ecology solutions ltd

AC GOATHAM AND SON LTD

LAND AT
PUMP LANE AND
BLOORS FARM,
LOWER RAINHAM,
KENT

INFORMATION FOR HABITATS REGULATIONS ASSESSMENT

Pursuant to Regulation 63 of The Conservation of Habitats and Species Regulations 2017

May 2019
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ecology solutions for planners and developers

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1. INTRODUCTION

1.1. Background

1.1.1. Ecology Solutions was commissioned by AC Goatham and Son Ltd in February 2019 to consider emerging development proposals for Land at Pump Farm and Bloors Farm, Lower Rainham, Kent (hereafter referred to as the application site) and to undertake detailed assessment of the potential impacts of the proposals on international / European designated sites.

1.1.2. The findings of this assessment work are set out within this 'Information for Habitats Regulations Assessment' document (IHRA), such that the Competent Authority (Medway Council in this case) has all the necessary information before it in order to carry out its duties in considering the application, in line with relevant planning policy and legislation, including specifically The Conservation of Habitats and Species Regulations 2017 (hereafter referred to as the Habitats Regulations).

Application Site Characteristics

1.1.3. The application site lies to the north of Lower Rainham in Kent. The application site is bound to the north-west by agricultural fields; to the north-east by existing residential properties along the B2004 Lower Rainham Road, with Riverside Country Park and the Medway Estuary situated beyond; to the south-east by allotments and Lower Bloors Lane, with Bloors Lane Community Woodland situated beyond, and to the south-west by a railway line, with existing residential development beyond.

1.1.4. The application site is approximately 50 hectares in size and comprises two parcels of land intersected by Pump Lane. The application site primarily comprises a commercial orchard with hedgerows / trees along boundaries. Several existing buildings are also present within the application site.

Development Proposals

1.1.5. The description of development is outlined below:

"Redevelopment of land off Pump Lane to include residential development comprising approximately 1,250 residential units, a local centre (with final uses to be determined at a later stage), a village green, a two form entry primary school, a 60 bed extra care facility, an 80 bed care home and associated accesses (vehicular, pedestrian, cycle)."

1.1.6. Parameter plans (in relation to land use, green and blue infrastructure, building heights and movement) have been produced by PRC Architects, and are included as Figures 2.1 to 2.4 inclusive of the Environmental Statement (ES). A copy of the Green and Blue Infrastructure Parameter Plan is also included at Appendix 1 of this assessment.

1.2. Purpose of this Report

1.2.1. This report specifically assesses the potential significant effects of the development proposals on international / European designated sites. Within this document specific regard is had to the test under Regulation 63 of the Habitats Regulations. Regulation 63 is described and considered further in Section 2 of this document.

1.2.2. Assessment under Regulation 63 of the Habitats Regulations is required in this instance, since the application site lies in proximity to a number of European / internationally designated sites, specifically:

- Medway Estuary and Marshes Special Protection Area (SPA) / Ramsar Site;
- Thames Estuary and Marshes SPA / Ramsar Site;
- The Swale SPA / Ramsar Site; and
- North Downs Woodland Special Area of Conservation (SAC).

1.2.3. The proximity of the application site to these international / European designated sites is described in detail at Section 3 of this report and is also shown on Plan ECO1.

1.2.4. As part of this assessment, professional judgement has been applied in some instances in order to interpret information. This report has been produced by experienced ecological consultants at Ecology Solutions who are members of the Chartered Institute of Ecology and Environmental Management (CIEEM) and are therefore qualified to make such judgements where appropriate.

1.2.5. This document assesses the likely significant effects of the development proposals as a whole, both alone and in combination with other plans / projects. It then goes on to consider whether the development proposals will give rise to an adverse effect on the integrity of the relevant designated sites.

1.2.6. It is the opinion of Ecology Solutions, following detailed assessment, that the development proposals would not result in a significant adverse effect on the integrity of any international / European designated sites, either alone or in combination with any other plans or projects, and that as such the test contained at Regulation 63 of the Habitats Regulations would not be failed.

2. LEGISLATIVE AND PLANNING POLICY BACKGROUND

2.1. This section of the document outlines further details regarding the legislation and planning policy of particular relevance to the development proposals.

2.2. Legislation and relevant case law

2.2.1. The proximity of the application site to international / European designated sites means that the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna (Habitats Directive) and the EC Directive on Wild Birds (Birds Directive) are of relevance. The Directives are transposed in UK legislation through the Habitats Regulations (2017).

2.2.2. It is also noted that the application site lies in proximity to a number of Ramsar sites; specifically, Medway Estuary and Marshes, Thames Estuary and Marshes, and the Swale. The UK is a signatory to the Convention on Wetlands of International Importance Especially as Wildfowl Habitat 1971, commonly known as the Ramsar Convention after the town in which it was signed. Parties to the Ramsar Convention are obliged to designate particular sites as Wetlands of International Importance.

2.2.3. The obligations imposed by the Convention are in themselves not particularly strong, in that they require the promotion and encouragement of the stated aims, rather than any specific action. However, as a matter of policy[1], Ramsar sites receive the same protection as designated SPAs and SACs. The procedures applicable to European sites are therefore to be applied to Ramsar sites, even though these are not European sites as a matter of law.

2.2.4. The relevant Directives and UK legislation are discussed below.

<u>Habitats and Birds Directives</u>

2.2.5. Under the EC Directive on the Conservation of Natural Habitats and of Wild Flora and Fauna, commonly referred to as the Habitats Directive (Council Directive 92/43/EEC), Member States are required to take special measures to maintain the distribution and abundance of certain priority habitats and species (listed in Annexes I and II of the Directive).

2.2.6. Each Member State is required to designate the most suitable sites as Special Areas of Conservation (SACs). All such SACs will form part of the Natura 2000 network under Article 3(1) of the Habitats Directive.

2.2.7. Article 2(3) sets out that member states have a duty, in exercising their obligations under the Habitats Directive to:

".. take account of economic, social and cultural requirements and local characteristics."

[1] As noted at paragraph 176 (b) of the National Planning Policy Framework (February 2019)

2.2.8. Under the EC Directive on Wild Birds (the Birds Directive) (Council Directive 2009/147/EC, formerly 79/409/EEC), Member States are required to take special measures to conserve the habitats of certain rare species of birds (listed in Annex I of the Directive) and regularly occurring migratory birds.

2.2.9. Each Member State is required to classify the most suitable areas of such habitats as Special Protection Areas (SPAs). This is designed to protect wild birds, and to provide sufficient diversity of habitats for all species so as to maintain populations at an ecologically sound level. All Bird Directive SPAs will also be part of the Natura 2000 network under article 3(1) of the Habitats Directive

2.2.10. Thus, there is an obligation under the Habitats Directive and the Birds Directive for member states to designate sites before turning to measures for their protection.

2.2.11. The protection afforded to SPAs and SACs is delivered through Article 6 of the Habitats Directive. Article 6(2) requires member states to take appropriate steps to avoid the deterioration of natural habitats and disturbance of species for which the sites have been designated, in so far as the disturbance could be significant in relation to the objectives of the Directive. Article 6(3) and Article 6(4) require that a plan or project not directly connected with the management of the site, but likely to have a significant effect upon it, either individually or in combination with other plans or projects, must be subject to an Appropriate Assessment of its implications on the site, in view of the site's Conservation Objectives.

2.2.12. Having undertaken an Appropriate Assessment, the competent authority may agree to a plan or project where it can be concluded that it will not adversely affect the integrity of the site. In light of a negative assessment on the implications for the integrity of the site, Article 6(4) provides that the plan or project may still proceed where it can be demonstrated that there are no alternatives and there are imperative reasons of over-riding public interest as to why it must proceed. In the event that a plan or project is to proceed on the basis of imperative reasons of over-riding public interest, by direction of Article 6(4), compensatory measures must be put in place to ensure that the overall coherence of the Natura 2000 network is protected.

<u>The Conservation of Habitats and Species Regulations 2017</u>

2.2.13. The Conservation of Species and Habitats Regulations 2017, commonly referred to as the Habitats Regulations, transpose the requirements of the Habitats Directive and Birds Directive into UK legislation. The Habitats Regulations aim to protect a network of sites in the UK that have rare or important habitats and species in order to safeguard biodiversity. The Habitats Regulations 2017 consolidate all of the previous amendments made to the Habitats Regulations 2010.

2.2.14. Under the Habitats Regulations, Competent Authorities have a duty to ensure that all the activities they regulate have no adverse effect on

the integrity of any of the Natura 2000 sites (e.g. SPAs and SACs). Regulation 63 of the Habitats Regulations requires that:

"63(1) A competent authority, before deciding to undertake, or give any consent, permission or other authorisation for a plan or project, which:-

(a) is likely to have a significant effect on a European site or a European offshore marine site (either alone or in combination with other plans or projects) and

(b) is not directly connected with or necessary to the management of the site,

must make an appropriate assessment of the implications of the plan or project for that site in view of that site's conservation objectives.

63(3) The competent authority must for the purposes of the assessment consult the appropriate nature conservation body and have regard to any representations made by that body within such reasonable time as the authority specifies.

63(5) In the light of the conclusions of the assessment, and subject to regulation 64, the authority may agree to the plan or project only after having ascertained that it will not adversely affect the integrity of the European site or the European offshore marine site (as the case may be).

63(6) In considering whether a plan or project will adversely affect the integrity of the site, the authority must have regard to the manner in which it is proposed to be carried out or to any conditions or restrictions subject to which it proposes that the consent, permission or other authorisation should be given."

2.2.15. Regulation 63 of the Habitats Regulations therefore sets out a two-stage process. The first test is to determine whether the plan / project is likely to have a significant effect on the European site. The second test (if applicable) is to determine whether the plan / project will affect the integrity of the European site.

2.2.16. Some key concepts of the Habitats Directive and Habitats Regulations have been clarified through case law. The most pertinent cases in relation to the development proposals are: the *Waddenzee* Judgement; the *Sweetman* Case; the *Dilly Lane* Case; the *People over Wind* Judgement; the *Holohan* Judgement; the *Wealden Judgement*; and the Dutch Nitrogen Cases. These are discussed below.

<u>Waddenzee Judgement</u>

2.2.17. In the *Waddenzee* case the European Court of Justice decided that an appropriate assessment is required for a plan or project where there is a probability or a risk that it will have a significant effect on the SPA. The Judgement states (at paragraph 3(a)) that:

"…any plan or project not directly connected with or necessary to the management of the site is to be subject to an appropriate assessment of its implications for the site in view of the site's conservation objectives if it cannot be excluded, on the basis of objective information, that it will have a significant effect on that site, either individually or in combination with other plans or projects."

2.2.18. Hence, the need for an Appropriate Assessment should be determined on a precautionary basis.

2.2.19. The Judgement gives clarity that the test of 'likely significant effect' should also be undertaken in view of the European site's Conservation Objectives. It is stated at paragraph 3(b) that:

"where a plan or project not directly connected with or necessary to the management of a site is likely to undermine the site's conservation objectives, it must be considered likely to have a significant effect on that site."

2.2.20. Paragraph 4 of the Judgement emphasises the requirement for the appropriate assessment to rely on objective scientific information:

"…an appropriate assessment…implies that, prior to its approval, all the aspects of the plan or project which can, by themselves or in combination with other plans or projects, affect the site's conservation objectives must be identified in the light of the best scientific knowledge in the field. The competent national authorities, taking account of the appropriate assessment of the implications…for the site concerned in the light of the site's conservation objectives, are to authorise such an activity only if they have made certain that it will not adversely affect the integrity of that site. That is the case where no reasonable scientific doubt remains as to the absence of such effects."

<u>Sweetman Case</u>

2.2.21. Further guidance in relation to the consideration of impacts in the light of the Habitats Regulations is provided in the *Sweetman* case. The case as set out by the Advocate General considered in detail the test for likely significant effect in paragraphs 50 and 51:

"50. The test which that expert assessment must determine is whether the plan or project in question has 'an adverse effect on the integrity of the site', since that is the basis on which the competent national authorities must reach their decision. The threshold at this (the second) stage is noticeably higher than that laid down at the first stage. That is because the question (to use more simple terminology) is not 'should we bother to check' (the question at the first stage) but rather 'what will happen to the site if this plan or project goes ahead; and is that consistent with "maintaining or restoring the favourable conservation status" of the habitat or species concerned'…

51. It is plain, however, that the threshold laid down at this stage of Article 6(3) may not be set too high, since the assessment must be undertaken having rigorous regard to the precautionary principle. That

principle applies where there is uncertainty as to the existence or extent of risks. The competent national authorities may grant authorisation to a plan or project only if they are convinced that it will not adversely affect the integrity of the site concerned. If doubt remains as to the absence of adverse effects, they must refuse authorisation."

2.2.22. The Court of Justice of the European Union (CJEU) agreed with the Advocate General's conclusions, and held:

"40. Authorisation for a plan or project, as referred to in Article 6(3) of the Habitats Directive, may therefore be given only on condition that the competent authorities – once all aspects of the plan or project have been identified which can, by themselves or in combination with other plans or projects, affect the conservation objectives of the site concerned, and in the light of the best scientific knowledge in the field – are certain that the plan or project will not have lasting adverse effects on the integrity of that site. That is so where no reasonable scientific doubt remains as to the absence of such effects."

2.2.23. Hence a plan or project may be authorised only if no reasonable scientific doubt remains as to the absence of effects. Reasonable scientific doubt will exist if the evidence is not sufficiently conclusive, or if there are gaps in the information.

Dilly Lane Case

2.2.24. The Secretary of State's decision to allow an appeal in relation to applications for a total of 170 new homes on a greenfield site off Dilly Lane, Hartley Wintney was challenged in High Court by Hart District Council. The legal challenge was made on the grounds that the Secretary of State had erred in departing from her Inspector's conclusions as to the effects on the Thames Basin Heaths SPA.

2.2.25. A key issue for the case was whether mitigation measures should be disregarded when assessing whether the project would have a significant effect on the SPA. Mr Justice Sullivan (now Lord Justice Sullivan) ruled in favour of the Secretary of State after concluding that there was no absolute legal rule that mitigation measures should be disregarded during the first stage – 'the likely significant test':

"55. The competent authority is not considering the likely effect of some hypothetical project in the abstract. The exercise is a practical one which requires the competent authority to consider the likely effect of the particular project for which permission is being sought. If certain features (to use a neutral term) have been incorporated into that project, there is no sensible reason why those features should be ignored at the initial, screening, stage merely because they have been incorporated into the project in order to avoid, or mitigate, any likely effect on the SPA."

People over Wind Case

2.2.26. The CJEU in *People over Wind v Coillte Teoranta* has revoked the position adopted under the *Dilly Lane* Decision that it was right and

proper for mitigation or avoidance measures, which formed a feature of a plan / project, to be viewed as integral to the plan / project and not excluded when considering the likely significance test at Regulation 63(1).

2.2.27. The decision by the CJEU ruled that:

"Article 6(3) of Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site."

2.2.28. In accordance with this ruling, avoidance or mitigation measures cannot be considered at the first stage of the test (the 'Likely Significant Effect' stage) and can only be considered at the Appropriate Assessment stage. The *People over Wind* ruling therefore conflicts with and overrules domestic case law in this regard.

<u>Holohan Judgement</u>

2.2.29. In the case of Holohan v. An Bord Pleanála the CJEU considered the appropriate assessment procedure to be adopted when considering potential impacts on a European Site. In considering this case, the CJEU ruled, amongst other matters:

a) An appropriate assessment (AA) must catalogue the entirety of the habitat types and species for which a site is protected.

b) It must also identify and examine the implications of the proposed project for the species present on that site and for which that site has not been listed. Additionally, it must examine the implications for habitat types and species outside the boundaries of the protected site, insofar as those implications are liable to affect the site's Conservation Objectives.

c) Where the competent authority rejects findings of an expert that additional information must be obtained, the Appropriate Assessment must include a detailed statement dispelling all reasonable scientific doubt concerning effects on the protected site.

2.2.30. This assessment document is fully compliant with the relevant parts of the Holohan Judgment. The qualifying interest features are referred to wherever appropriate in Section 4 below. The relevant information, as submitted to Europe relating to such matters, is included as relevant appendices to this assessment and referenced where appropriate. Consideration has been given to implications for habitats and species located outside of the international / European designated sites, with reference to the site's Conservation Objectives and the possibility that an adverse effect on the integrity of the site could arise.

Wealden Judgement

2.2.31. In relation to air quality impacts on designated sites (most notably in relation to Nitrogen deposition), until relatively recently, Natural England's advice regarding the screening threshold for a likely significant effect was as follows. Where either the resulting deposition / concentration equates to 'less than 1% of the relevant benchmark', or the predicted Annual Average Daily Traffic (AADT) value is less than 1000, a likely significant effect can be screened out for the project when it is considered both alone and in combination with other plans or projects.

2.2.32. However, relevant guidance has changed in the light of the High Court judgment in Wealden v SSCLG [2017] ('the Wealden Judgment').

2.2.33. The Wealden Judgment confirms that the use of the project / plan level 1000 AADT threshold (equivalent to 1% of the critical level/load for receiving habitat) as the only means of addressing in-combination effects was not appropriate, particularly where other AADT values are known and importantly which, when added together, breach the threshold. The 1000 AADT (and 1%) thresholds themselves were not questioned in terms of their use for assessment purposes.

2.2.34. The Judgment clarified that whilst the 1000 AADT (and 1% of the critical load / level) threshold is appropriate for use in screening assessments when applying the tests of the Habitats Regulations, a true in combination assessment must be undertaken, in view of all relevant AADT data.

2.2.35. As a result of the Wealden Judgement, updated guidance has been produced by Natural England (as referenced below) in relation to the assessment of road traffic emissions on European designated sites.

The Dutch Nitrogen Cases

2.2.36. On 7th November 2018 the Judgment of the CJEU was handed down pursuant to a reference for a Preliminary Ruling relating to the application of Article 6 of Directive 92/43/EEC (the Habitats Directive) in joined cases C-293/17 and C-294/17. The cases concerned authorisation schemes for agricultural activities which cause nitrogen deposition on Natura 2000 (European) sites in the Netherlands.

2.2.37. Key parts of the ruling (insofar as they are relevant to this assessment) are discussed below.

2.2.38. In line with preceding case law (Waddenzee and Sweetman, as discussed above) the need for scientific rigour and firm conclusions as to the absence of effects are a pre-requisite for authorisation of a plan / project. Ruling 3 in the case states:

"Article 6(3) of Directive 92/43 must be interpreted as not precluding national programmatic legislation which allows the competent authorities to authorise projects on the basis of an 'appropriate assessment' within the meaning of that provision, carried out in

advance and in which a specific overall amount of nitrogen deposition has been deemed compatible with that legislation's objectives of protection. That is so, however, only in so far as a thorough and in-depth examination of the scientific soundness of that assessment makes it possible to ensure that there is no reasonable scientific doubt as to the absence of adverse effects of each plan or project on the integrity of the site concerned, which it is for the national court to ascertain." [emphasis added]

2.2.39. Ruling 4 in the case states:

"Article 6(3) of Directive 92/43 must be interpreted as not precluding national programmatic legislation, such as that at issue in the main proceedings, exempting certain projects which do not exceed a certain threshold value or a certain limit value in terms of nitrogen deposition from the requirement for individual approval, if the national court is satisfied that the 'appropriate assessment' within the meaning of that provision, carried out in advance, meets the criterion that there is no reasonable scientific doubt as to the lack of adverse effects of those plans or projects on the integrity of the sites concerned." [emphasis added]

2.2.40. Ruling 5 in the case states:

"Article 6(3) of Directive 92/43 must be interpreted as precluding national programmatic legislation, such as that at issue in the main proceedings, which allows a certain category of projects, in the present case the application of fertilisers on the surface of land or below its surface and the grazing of cattle, to be implemented without being subject to a permit requirement and, accordingly, to an individualised appropriate assessment of its implications for the sites concerned, unless the objective circumstances make it possible to rule out with certainty any possibility that those projects, individually or in combination with other projects, may significantly affect those sites, which it is for the referring court to ascertain." [emphasis added]

2.2.41. Ruling 6 in the case confirms that any measures which are relied upon to mitigate or avoid adverse effects on the integrity of the European site in question, must be certain at the time of assessment. It is stated:

"Article 6(3) of Directive 92/43 must be interpreted as meaning that an 'appropriate assessment' within the meaning of that provision may not take into account the existence of 'conservation measures' within the meaning of paragraph 1 of that article, 'preventive measures' within the meaning of paragraph 2 of that article, measures specifically adopted for a programme such as that at issue in the main proceedings or 'autonomous' measures, in so far as those measures are not part of that programme, if the expected benefits of those measures are not certain at the time of that assessment." [emphasis added]

2.3. Guidance and other Relevant Documents

2.3.1. Guidance on the interpretation of key terms and concepts contained within the European and UK legislation of relevance to European

designated sites is provided through several documents issued by the European Commission and national organisations such as the Joint Nature Conservation Committee (JNCC) and Natural England. This guidance is discussed below.

Managing Natura 2000 Sites (European Communities, 2000)

2.3.2. The document entitled '*Managing Natura 2000 Sites the provisions of Article 6 of the Habitats Directive 92/43/CEE'*, published by the European Commission in 2000, provides guidelines to Member States on the interpretation of certain key concepts used in Article 6 of the Habitats Directive.

2.3.3. It should be noted that the section relating to Article 6(4) has subsequently been replaced through the publication of a further guidance document by the European Commission in 2007 entitled '*Guidance document on Article 6(4) of the Habitats Directive'*, which is considered below under the relevant heading.

2.3.4. This document states at Section 2.3.3 that conservation measures must correspond to the ecological requirements of the habitats and species present for which the site is designated and that these requirements *"involve all the ecological needs necessary to ensure their favourable conservation status".*

2.3.5. At section 3.5 the guidance states, in relation to deterioration and disturbance of habitats or species:

"Deterioration or disturbance is assessed against the conservation status of species and habitats concerned. At a site level, the maintenance of the favourable conservation status has to be evaluated against the initial conditions provided in the Natura 2000 standard data forms when the site was proposed for selection or designation, according to the contribution of the site to the ecological coherence of the network. This notion should be interpreted in a dynamic way according to the evolution of the conservation status of the habitat or the species."

2.3.6. Section 4.4.1 sets out that in determining what may constitute a likely 'significant' effect one should take into account the Conservation Objectives for the designated site and other relevant baseline information. In the second paragraph of this section of the document it is stated:

"In this regard, the conservation objectives of a site as well as prior or baseline information about it can be very important in more precisely identifying conservation sensitivities."

2.3.7. Section 4.5.3 of the document sets out the duty of Member States to provide certain specific information in support of the inclusion of a site within the Natura 2000 network. This information is to be provided in a format specified by the European Commission (the Natura 2000 Standard Data Form).

2.3.8. A link is drawn between the Standard Data Form and the formation of the site's conservation objectives within the text box at the end of section 4.5.3 of the guidance where it is stated:

"The information provided according to the standard data form established by the Commission forms the basis for a Member State's establishment of the site's conservation objectives."

2.3.9. With regard to an assessment of the effects of a plan / project on the integrity of a designated site, the 'integrity of the site' is defined at Section 4.6.3 as:

"… the coherence of the site's ecological structure and function, across the whole area, or the habitats, complex of habitats and / or populations of species for which the site is or will be classified."

2.3.10. The guidance is clear, within the text box at the foot of page 39, that an assessment as to the implications of the plan / project on the integrity of the designated site should be limited to an assessment against the site's conservation objectives:

"The integrity of the site involves its ecological functions. The decision as to whether it is adversely affected should focus on and be limited to the site's conservation objectives."

2.3.11. Section 5 of Managing Natura 2000 Sites deals with Article 6(4) of the Habitats Directive. It is noted that this section has been expanded upon and replaced by further guidance issued by the European Commission entitled "*Guidance document on Article 6(4) of the Habitats Directive 92/43/EEC*" (2007), which is considered below.

<u>Assessment of Plans and Projects Significantly Affecting Natura 2000 sites - Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC (European Commission, 2001)</u>

2.3.12. This document, published by the European Commission in 2001, gives guidance on carrying out and reviewing those assessments required under Article 6(3) and (4) of the Habitats Directive. It is provided as supplementary guidance and does not over-ride or replace any of that set out within '*Managing Natura 2000*' (European Commission, 2000) which as stated at page 6 of the document, "*is the starting point for the interpretation of the key terms and phrases contained in the Habitats Directive*". The guidance provided is not mandatory and it is clearly set out that its use is "*optional and flexible*" and that it is for "*Member States to determine the procedural requirements deriving from the directive*".

2.3.13. The guidance sets out the key stages in following the tests contained within the Habitats Directive. Pertinent to an assessment under Regulation 63, stages one and two are relevant. Stage one is the screening stage assessing the likelihood of a plan / project resulting in a significant effect upon the European site. The second comprises the Appropriate Assessment.

2.3.14. Section 3.2.4 is concerned with Appropriate Assessment and specifically, the assessment against the Conservation Objectives of the European site. Box 9 provides a list of five example Conservation Objectives for differing broad habitat types. One such example, that for a coastal site, taken from Box 9 is provided below:

"to maintain the status of the European features of this coastal site in favourable condition, allowing for natural change. Features include coastal shingle vegetation and lagoons (within a candidate special area of conservation (SAC), which is also an SPA)."

Internal Guidance to decisions on 'Site Integrity': A framework for provision of advice to competent authorities (English Nature, 2004)

2.3.15. Natural England (English Nature at the time) produced an internal guidance document on the provision of advice to competent authorities regarding the concept of 'site integrity' in undertaking an Appropriate Assessment.

2.3.16. This guidance sets out a definition for integrity. It states that integrity is considered at the site level and gives the following definition (taken from PPG9):

"The coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and / or levels of populations of the species for which it was classified".

2.3.17. Integrity is further defined within section 3.0 where it is stated that:

"In a dynamic context 'integrity' can be considered as a site having a sense of resilience and ability to evolve in ways that are favourable to conservation."

2.3.18. The need to maintain or restore the designated site to favourable conservation status is dealt with in the final paragraph of section 3.0. Natural England quotes guidance issued jointly by the Environment Agency, English Nature and Countryside Council for Wales.

2.3.19. The guidance provides a checklist within section 4.1, for assessing the likelihood of an adverse effect on integrity occurring as a result of the proposed plan / project. It is stated that if the answer to all of the questions posed within the checklist is "yes" then it is reasonable to conclude that there will be no adverse effect upon integrity. In the event that one or more of the answers is no, then the guidance suggests a series of further site-specific factors, listed at 4.2 – 4.7.

Common Standards Monitoring (JNCC, 2004)

2.3.20. Common Standards Monitoring (CSM) is a means by which condition objectives for habitats, species, or other features of designated sites (e.g. SSSIs and SPAs) are set based on key attributes of the features.

2.3.21. JNCC and the country Conservation Agencies (e.g. Natural England) developed guidance on the setting and assessing of condition

objectives, as required under the Birds and Habitats Directives and set out a framework for this in 1999. This framework is provided in the form of CSM guidance which comprises a suite of documents including an '*Introduction to the Guidance Manual on Common Standards Monitoring*' and several species / habitat specific documents. The Guidance Manual covers various relevant concepts and terms. It also provides a background to the setting of conservation objectives and sets out the desired approach to setting targets, monitoring, management and reporting on conservation measures in designated sites.

2.3.22. The Guidance Manual and CSM guidance for individual site attributes (e.g. its bird or reptile interest) set out specific criteria regarding the identification of interest features, targets and methods of assessment. There is in-built flexibility and allowances for 'judgements to be made' when assessing, for example, favourable condition.

2.3.23. It is understood that Natural England applies the CSM approach to European designated sites through an assessment of the SSSI unit condition. This is undertaken on a cycle of approximately six years. The assessment does not relate to the Conservation Objectives of the European site but provides a tool for tailoring future management of the SSSI such that favourable condition of the interest features can be maintained or restored as appropriate.

<u>Guidance document on Article 6(4) of the 'Habitats Directive' (European Commission, 2007)</u>

2.3.24. This document, published by the European Commission in 2007, is intended to provide clarification on key terms / concepts as referred to within '*Managing Natura 2000 Sites*' and replaces the section on Article 6(4) within that earlier document.

2.3.25. The document covers the concepts of 'Alternative Solutions', 'Imperative Reasons of Overriding Public Interest', 'Compensation Measures', 'Overall Coherence' and the 'Opinion of the Commission'.

2.3.26. With regard to ensuring the quality of an Appropriate Assessment, and to define exactly what needs to be compensated, it is stated at Section 1.3 that:

"Assessment procedures of plans or projects likely to affect Natura 2000 sites should guarantee full consideration of all elements contributing to the site integrity and to the overall coherence of the network, both in the definition of the baseline conditions and in the stages leading to identification of potential impacts, mitigation measures and residual impacts. These determine what has to be compensated, both in quality and quantity."

2.3.27. The need to use information contained within the Natura 2000 Standard Data Form, in tandem with the site's Conservation Objectives when undertaking an Appropriate Assessment is specifically referred to (under the second hyphenated point at Section 1.3 on page 5).

2.3.28. Section 1.3.2 gives guidance on the application of Article 6(4) in respect of reasons of overriding public importance and Section 1.4.1 gives guidance on the application of Article 6(4) in respect of compensatory measures.

Natura 2000 Standard Data Forms

2.3.29. A standard reporting format has been developed for Natura 2000 sites (SPAs and SACs) to ensure that the relevant site selection information is reported and stored in a consistent manner which can be easily made available.

2.3.30. A standard reporting form for SPAs and SACs was developed by the European Commission and published in 1996. The form is used for all sites designated or proposed to be designated as SPAs and SACs under the relevant Directives, with the information stored on a central database.

2.3.31. Article 4 of the Habitats Directive provides the legal basis for providing the data. Article 4 states that information shall include a map of the designated site, its name, location, extent and the data resulting from application of the criteria specified in Annex III and that this shall be provided in a format established by the Commission. Under Article 4 (paragraph 3) of the Birds Directive, Member States are required to provide the Commission with all relevant information to enable it to take any appropriate steps in order to protect relevant species in areas where the Directive applies.

2.3.32. Whilst it is the relevant country agency (i.e. Natural England) that is responsible for designating a site, it is the JNCC who are responsible for collating the lists of European and international designated sites, together with relevant supporting information. The Natura 2000 Data Forms for SPAs and SACs are therefore made available by JNCC.

2.3.33. Within the explanatory notes for Natura Standard Data Forms the following "main objectives" of the Natura data form / database are given:

1. *"to provide the necessary information to enable the Commission, in partnership with the Member States, to co-ordinate measures to create a coherent Natura 2000 network and to evaluate its effectiveness for the conservation of Annex I habitats and for the habitats of species listed in Annex II of Council Directive 92/43/EEC as well as the habitats of Annex I bird species and other migratory bird species covered by Council Directive 79/409/EEC."*

2. *"to provide information which will assist the Commission in other decision making capacities to ensure that the Natura 2000 network is fully considered in other policy areas and sectors of the Commission's activities in particular regional, agricultural, energy, transport and tourism policies."*

3. *"to assist the Commission and the relevant committees in choosing actions for funding under LIFE and other financial instruments where*

data relevant to the conservation of sites, such as ownership and management practice, are likely to facilitate the decision making process."

4. *"to provide a useful forum for the exchange and sharing of information on habitats and species of Community interest to the benefit of all Member States."*

Conservation Objectives

2.3.34. The formal European Site Conservation Objectives for SPAs and SACs are produced by Natural England. For clarity, a copy of the European Site Conservation Objectives (and where available, Supplementary Advice) for the relevant SPAs and SACs are included as appendices to this document.

Natural England Internal Guidance – "Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations" (June 2018)

2.3.35. In light of the Wealden Judgement, Natural England produced an internal Guidance Note in June 2018 which specifically considers how Natural England advises Competent Authorities in relation to the assessment of plans and projects likely to generate road traffic emissions to air which are capable of affecting European designated sites.

2.3.36. Section 4 of the guidance provides advice in relation to the screening for likely significant effects and outlines a series of sequential steps that Natural England staff will follow to apply the screening procedure when the statutory authority is asked to advise Competent Authorities. Five steps are involved, with the final step culminating in advice on the need for Appropriate Assessment, where thresholds are exceeded either alone or in combination.

2.3.37. Section 5 of the guidance subsequently considers advice to competent authorities on the scope and content of an Appropriate Assessment, should one be required.

2.3.38. In producing this assessment, detailed consideration has been afforded to the content of the Internal Guidance note, with the same 'steps' adopted and utilised as part of the assessment methodology. It is therefore considered that the approach outlined below accords with that set out in the guidance issued by the statutory authority.

2.4. Planning Policy

National Planning Policy Framework (NPPF) and ODPM / DEFRA Circular (ODPM / DEFRA, 2005)

2.4.1. Paragraphs 170 and 176 of the National Planning Policy Framework (February 2019) are of direct relevance. Paragraph 170 makes reference to protecting and enhancing sites of biodiversity value "*in a manner commensurate with their statutory status or identified quality in*

the development plan". Paragraph 176 asserts that potential SPAs, possible SACs, listed or proposed Ramsar sites and sites providing compensatory measures for adverse effects should be afforded the same level of protection as classified SPAs and designated SACs (referred to in the NPPF as 'habitats sites').

2.4.2. Guidance on the determination of whether an effect on a European designated site is likely to be significant, together with the scope of Appropriate Assessments and ascertaining the effect on the integrity, was previously provided within Circular 06/2005 "*Biodiversity and geographical conservation – statutory obligations and their impact within the planning system*" (DEFRA). The Circular originally accompanied Planning Policy Statement 9 (PPS9) and is referenced in the NPPF at footnote 56.

2.4.3. Current planning practice guidance available on the GOV.UK website[2] notes that updated guidance in relation to the law affecting European sites is being prepared by DEFRA and will, in due course, replace the advice set out in the Circular. On the basis that the Circular makes reference to a flow diagram based on similar information provided in European guidance, it is expected that any further guidance published in relation to the provisions in the NPPF could also include similar information to the Circular.

2.4.4. With respect to the significance test, the Circular states at paragraph 13 that:

"The decision as to whether an appropriate assessment is necessary should be made on a precautionary basis".

2.4.5. The *Waddenzee* Judgement is specifically referred to at paragraph 13 of the Circular. With regards to the need to undertake an Appropriate Assessment; this is only required where it is not possible to conclude, on the basis of objective information, that the plan / project will not have a significant effect on the European site, either individually or in-combination with other plans / projects.

2.4.6. Paragraph 14 clarifies that in considering the likely significance of an effect, the decision taker should assess whether the effect would be significant in terms of the site's Conservation Objectives.

2.4.7. Paragraph 15 clarifies the importance of assessing the likely significant effect on each of the interest features for which the site is designated.

2.4.8. Guidance on the scope of an Appropriate Assessment was provided at paragraph 17:

"If the decision-taker concludes that a proposed development (not directly connected with or necessary to the management of a site) is likely to significantly affect a European site, they must make an

[2] Ministry of Housing, Communities and Local Government. *Guidance - Natural Environment.* Available at: www.gov.uk/guidance/natural-environment (paragraph 011, revision date 12 06 2014)

Appropriate Assessment of the implications of the proposal for the site in view of the site's conservation objectives. These relate to each of the interest features for which the site was classified…The scope and content of an Appropriate Assessment will depend on the nature, location, duration and scale of the proposed project and the interest features of the relevant site. It is important that an Appropriate Assessment is made in respect of each interest feature for which the site is classified; and for each designation where a site is classified under more than one international obligation…"

2.4.9. At paragraph 20 the definition of 'integrity' for the purpose of interpreting the tests contained within the Habitats Regulations is given as:

"The integrity of a site is the coherence of its ecological structure and function, across its whole area that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was classified."

2.4.10. The Circular included a flow diagram setting out the series of steps competent authorities are required to take in considering proposals affecting internationally designated nature conservation sites. This was based on the information and flow charts given in guidance issued by the European Commission (European Commission Environment DG, 2001). A copy of this flow diagram is included at Appendix 2 of this IHRA assessment.

2.4.11. Paragraph 177 of the updated NPPF (February 2019) states that:

"*The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site*".

<u>Thames, Medway and Swale Estuaries Strategic Access Management and Monitoring Strategy (SAMMS)</u>

2.4.12. The North Kent Environmental Planning Group (which comprises a number of Local Planning Authorities in the North Kent area, including Medway Council) commissioned research to try and better understand the causes of bird declines recorded within the Thames Estuary and Marshes, the Medway Estuary and Marshes and The Swale SPAs and Ramsar sites. The research undertaken suggested that recreational disturbance may be one of the contributing factors to bird declines in these coastal sites.

2.4.13. As a result of this work, the Thames, Medway and Swale Estuaries Strategic Access Management and Monitoring Strategy (SAMMS) was developed and agreed, in conjunction with Natural England. The intention of the SAMMS was to identify and set out a strategic approach towards management and mitigation at the European designated sites, with a suite of strategic access, management and monitoring measures identified.

2.4.14. The strategic package of measures was costed and used to define a standardised 'tariff'. It was recommended that this tariff should be applied to all new residential development within 6km of the SPAs and Ramsar sites, with the contribution calculated to be (as of November 2015) £223.58 per new dwelling (index linked and subject to review).

2.4.15. As outlined in the Medway Council Interim Policy Statement (dated November 2015), the Council supports the implementation of the mitigation as a partnership between the North Kent local authorities, with contributions to be provided (as collected through the tariff) to the pooled budget to implement the strategy.

3. LOCATION OF APPLICATION SITE IN RELATION TO INTERNATIONAL / EUROPEAN DESIGNATED SITES

3.1. There are a number of international / European designated sites located within 10km of the application site (by straight line distance):

- Medway Estuary and Marshes Special Protection Area (SPA) / Ramsar Site;
- Thames Estuary and Marshes SPA / Ramsar Site;
- The Swale SPA / Ramsar Site;
- Queendown Warren Special Area of Conservation (SAC);
- North Downs Woodlands SAC; and
- Peter's Pit SAC.

3.2. The relationship between the application site and each of these designated sites is shown on Plan ECO1. The shortest distance from the application site to each of the locations referenced below is also illustrated on this plan.

3.3. In a number of cases, the application site is significantly separated from the international / European designated sites by road. However, in light of pre-application correspondence with Natural England, detailed consideration has been afforded to potential significant effects arising on all of these sites in this assessment, both when the development proposals are considered alone and in combination with other plans and projects.

<u>Medway Estuary and Marshes SPA / Ramsar Site</u>

3.4. The nearest international / European designated site is Medway Estuary and Marshes SPA / Ramsar site, which lies approximately 0.2km to the north of the application site boundary at its closest point (straight line distance – 'as the crow flies'). The SPA / Ramsar site is underpinned by Medway Estuary and Marshes Site of Special Scientific Interest (SSSI). Both designations share a common boundary.

3.5. The SPA / Ramsar site is separated from the application site by the B2004 Lower Rainham Road, agricultural fields and existing residential development in Lower Rainham.

3.6. Access into the majority of the SPA / Ramsar site is generally restricted due to the estuarine nature of the site (with habitats subject to inundation with the tide). However, it is noted that in some locations the designated site boundary incorporates land beyond the sea wall, including a number of public rights of way.

3.7. It is also noted that Riverside Country Park lies between the application site and the Medway Estuary. This is an extensive site (around 100 hectares in size) and is understood to be owned and managed by Medway Council. Some parts of the Country Park appear to lie within the boundary of the SPA / Ramsar site. A car park is located approximately 0.5km to the north-west of the application site at its closest point (straight line distance).

Thames Estuary and Marshes SPA / Ramsar Site

3.8. The next nearest coastal international / European designated site (via straight line distance) is Thames Estuary and Marshes SPA / Ramsar site, which lies approximately 8.4km to the north of the application site at its closest point. Both designations share a common boundary and are underpinned by South Thames Estuary and Marshes SSSI.

3.9. This SPA / Ramsar site is separated from the application site by the River Medway and open countryside on the Hoo Peninsula, which form a significant barrier. As a result, the distance between the application site and the nearest part of Thames Estuary and Marshes SPA / Ramsar site by road is approximately 19km in total (via Lower Rainham Road, the A289, Medway Tunnel and the A228).

3.10. As with Medway Estuary and Marshes, access into the SPA / Ramsar site is restricted due to the estuarine nature of the site, although there are a limited number of public rights of way present.

The Swale SPA / Ramsar Site

3.11. The Swale SPA / Ramsar site is situated approximately 8.9km to the east of the application site boundary at its closest point (straight line distance). Both designations share a common boundary and are underpinned by The Swale SSSI.

3.12. The SPA / Ramsar site is separated from the application site by existing development at Upchurch, Lower Halstow and Iwade, together with extensive areas of open countryside. The distance from the application site to The Swale SPA / Ramsar site by road is approximately 14.5km (along the B2004 Lower Rainham Road, the A2 and A249).

3.13. As with the international / European designated sites above, access into the Swale SPA / Ramsar site is similarly restricted due to the estuarine nature of the habitats present.

Queendown Warren SAC

3.14. The nearest SAC to the application site is Queendown Warren SAC, situated approximately 4.2km to the south-east of the application site boundary at its closest point (straight line distance). This SAC is underpinned by Queendown Warren SSSI.

3.15. The SAC is separated from the application site by existing development at Gillingham and Chatham, the M2 motorway and open fields. The distance by road from the application site to this SAC is approximately 7.4km (via B2004 Lower Rainham Road, the A2 and minor country lanes through the village of Meresborough). It is noted that the SAC is located over 300 metres to the south of the M2 motorway at its closest point, with only minor rural lanes situated within 200 metres of the site.

3.16. There are a number of existing footpaths and tracks at Queendown Warren SAC, with a small car park located to the north-east of the boundary of the European designated site.

North Downs Woodlands SAC

3.17. North Downs Woodlands SAC is situated approximately 7.9km to the south-west of the application site boundary at its closest point (straight line distance). The component SSSI which underpins this parcel of the European designated site is Wouldham to Detling Escarpment SSSI.

3.18. The SAC is also separated from the application site by existing development in Gillingham and Chatham, the M2 motorway and open fields. However, the SAC lies in close proximity to the strategic road network in two locations: the A229 at Kit's Coty to the west and A249 at Detling to the east. The distance by road from the application site to these two locations is approximately 15.1km (A229) and 16.4km (A249) respectively.

3.19. There are a number of public rights of way passing through the woodland, although it is apparent from OS mapping that the nearest component of the SAC is located on a very steep embankment, which is likely to restrict informal recreation to existing footpaths and routes.

Peter's Pit SAC

3.20. Peter's Pit SAC is located approximately 9.3km to the south-west of the application site boundary at its closest point (straight line distance). This SAC is underpinned by Peter's Pit SSSI.

3.21. The SAC is again significantly separated from the application site by existing development in Gillingham and Chatham, the M4 motorway and woodland. The distance by road from the application site to this European designated site is approximately 16.4km (via the Medway Tunnel, Rochester, Borstal and Wouldham).

3.22. Public access through the European designated site is restricted, in part due to the nature of the site (former chalk quarry).

4. CONSERVATION STATUS OF INTERNATIONAL / EUROPEAN DESIGNATED SITES

4.1. This section of the assessment describes the reasons for designation of all of the international / European designated sites listed above, together with supporting information and the Conservation Objectives (noting that these are not produced for Ramsar sites).

Medway Estuary and Marshes SPA

Qualifying Features

4.2. Medway Estuary and Marshes SPA was classified in December 1993 and covers an area of 4686.32 hectares. The SPA is underpinned by a single SSSI (Medway Estuary and Marshes SSSI).

4.3. As outlined in the Natura 2000 Standard Data Form (updated December 2015), the SPA qualifies under Article 4.1 of the Birds Directive (79/409/EEC) by supporting populations of European importance of the following Annex I species:

- Avocet *Recurvirostra avosetta* (breeding and wintering);
- Little Tern *Sterna albifrons* (breeding);
- Common Tern *Sterna hirundo* (breeding); and
- Bewick's Swan *Cygnus columbianus bewickii* (wintering)

4.4. The SPA also qualifies under Article 4.2 of the Directive by supporting populations of European importance of the following migratory species:

- Pintail *Anas acuta*;
- Shoveler *Anas clypeata*;
- Teal *Anas crecca*;
- Wigeon *Anas penelope*;
- Turnstone *Arenaria interpres*;
- Dark-bellied Brent Goose *Branta bernicla bernicla*;
- Dunlin *Calidris alpina alpina*;
- Knot *Calidris canutus;*
- Ringed Plover *Charadrius hiaticula*;
- Oystercatcher *Haematopus ostralegus*;
- Black-tailed Godwit *Limosa limosa islandica*;
- Curlew *Numenius arquata*;
- Grey Plover *Pluvialis squatarola;*
- Shelduck *Tadorna tadorna*.
- Greenshank *Tringa nebularia*; and
- Redshank *Tringa totanus*.

4.5. The SPA further qualifies under Article 4.2 of the Directive by regularly supporting in winter at least 20,000 waterfowl. Species listed on the Natura 2000 Standard Data Form include: Red-throated Diver *Gavia stellata*, Great Crested Grebe *Podiceps cristatus*, Cormorant *Phalacrocorax carbo*, Bewick's Swan, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Mallard *Anas platyrhynchos*, Pintail, Shoveler, Pochard *Aythya ferina*, Oystercatcher, Avocet, Ringed Plover, Grey Plover, Lapwing *Vanellus*

vanellus, Knot, Dunlin, Black-tailed Godwit, Curlew, Redshank, Greenshank and Turnstone.

4.6. The SPA Citation and Natura 2000 Standard Data Form for the SPA are included at Appendix 3 of this assessment.

Conservation Objectives

4.7. The European Site Conservation Objectives for Medway Estuary and Marshes SPA are included at Appendix 4 of this assessment, and are defined by Natural England as being:

"With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

Qualifying Features

A046a Branta bernicla bernicla; Dark-bellied brent goose (Non-breeding)
A048 Tadorna tadorna; Common shelduck (Non-breeding)
A054 Anas acuta; Northern pintail (Non-breeding)
A132 Recurvirostra avosetta; Pied avocet (Breeding)
A132 Recurvirostra avosetta; Pied avocet (Non-breeding)
A137 Charadrius hiaticula; Ringed plover (Non-breeding)
A141 Pluvialis squatarola; Grey plover (Non-breeding)
A143 Calidris canutus; Red knot (Non-breeding)
A149 Calidris alpina alpina; Dunlin (Non-breeding)
A162 Tringa totanus; Common redshank (Non-breeding)
A195 Sterna albifrons; Little tern (Breeding)
Waterbird assemblage
Breeding bird assemblage"

4.8. The Conservation Objectives also state that they should be "*read in conjunction with the accompanying Supplementary Advice document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above*".

4.9. Supplementary Advice in relation to Medway Estuary and Marshes SPA is available online as part of the Natural England Conservation Advice for Marine Protected Areas. Consideration has therefore also been afforded to this further information in producing this assessment

Medway Estuary and Marshes Ramsar Site

4.10. Medway Estuary and Marshes was designated as a Ramsar site in December 1993. The boundary of the Ramsar site is consistent with the SPA and is underpinned by Medway Estuary and Marshes SSSI.

4.11. The site qualifies under Ramsar Criterion 2, on account of the site supporting a number of rare plants and animals, including nationally scarce plants, and invertebrate species listed on the British Red Data Book.

4.12. The site also qualifies under Ramsar Criterion 5, on account of the site supporting an assemblage of international importance.

4.13. The site also qualifies under Ramsar Criterion 6, on account of the site supporting populations of Grey Plover, Redshank, Dark-bellied Brent Goose, Shelduck, Pintail, Ringed Plover, Knot and Dunlin at levels of international importance.

4.14. A copy of the Ramsar Information Sheet (RIS) for the site is included at Appendix 5 of this assessment.

Medway Estuary and Marshes SSSI

4.15. As outlined above, both the SPA and Ramsar site are underpinned by Medway Estuary and Marshes SSSI. The citation for the SSSI (of direct relevance to this assessment) lists those interest features (habitats and species) for which the site is designated. The full citation for this SSSI is reproduced at Appendix 6 of this assessment.

4.16. Detailed information on the current management and quality of the SSSI is provided in the SSSI unit condition assessments produced by Natural England. A copy of this information is reproduced at Appendix 7.

Thames Estuary and Marshes SPA

Qualifying Features

4.17. The Thames Estuary and Marshes SPA was classified in March 2000 and covers an area of 4802.47 hectares. The SPA is underpinned by Mucking Flats and Marshes SSSI and South Thames Estuary and Marshes SSSI (of relevance to this assessment).

4.18. As outlined on the Natura 2000 Standard Data Form (updated December 2015), the SPA qualifies under Article 4.1 of The Birds Directive (79/409/EEC) by supporting populations of European importance of the following Annex I species:

- Hen Harrier *Circus cyaneus* (wintering); and
- Avocet (wintering).

4.19. The SPA also qualifies under Article 4.2 of the Directive by supporting populations of European importance of the following migratory species:

- Dunlin;

- Knot;
- Black-tailed Godwit;
- Grey Plover;
- Redshank; and
- Ringed Plover.

4.20. The SPA further qualifies under Article 4.2 of the Directive by regularly supporting at least 20,000 waterfowl, with species listed on the Natura 2000 Standard Data Form including Avocet, Grey Plover, Knot, Dunlin, Black-tailed Godwit and Redshank.

4.21. The SPA Citation and Natura 2000 Standard Data Form for Thames Estuary and Marshes SPA is included at Appendix 8 of this assessment.

Conservation Objectives

4.22. The Conservation Objectives for Thames Estuary and Marshes SPA are included at Appendix 9 of this assessment, and are defined by Natural England as being:

"With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

A082 Circus cyaneus; Hen harrier (Non-breeding)
A132 Recurvirostra avosetta; Pied avocet (Non-breeding)
A137 Charadrius hiaticula; Ringed plover (Non-breeding)
A141 Pluvialis squatarola; Grey plover (Non-breeding)
A143 Calidris canutus; Red knot (Non-breeding)
A149 Calidris alpina alpina; Dunlin (Non-breeding)
A156 Limosa limosa islandica; Black-tailed godwit (Non-breeding)
A162 Tringa totanus; Common redshank (Non-breeding)
Waterbird assemblage"

4.23. The Conservation Objectives for the SPA also make reference to Supplementary Advice, which is also available online (part of the Natural England Conservation Advice for Marine Protected Areas). Consideration has therefore also been afforded to this further information in producing this assessment.

Thames Estuary and Marshes Ramsar Site

4.24. The Thames Estuary and Marshes Ramsar site was designated on 31 March 2000. It qualifies under Ramsar criteria 2, 5 and 6 and is also underpinned by the same SSSI components as the SPA.

4.25. The site also qualifies under Ramsar Criterion 2 on account of the site supporting one endangered plant species, at least 14 nationally scarce plants of wetland habitats and more than 20 British Red Data Book invertebrates.

4.26. The site also qualifies under Ramsar Criterion 5, on account of the site supporting an assemblage of international importance.

4.27. The site also qualifies under Ramsar Criterion 6, on account of the site supporting populations of Ringed Plover, Black-tailed Godwit, Grey Plover, Knot, Dunlin and Redshank at levels of international importance.

4.28. A copy of the RIS for the site is included at Appendix 10 of this assessment.

South Thames Estuary and Marshes SSSI

4.29. The citation for South Thames Estuary and Marshes SSSI (which underpins the SPA and Ramsar site) lists those interest features for which the site is designated. The citation for this SSSI is reproduced at Appendix 11 of this assessment.

4.30. Detailed information on the current management and quality of the SSSI is provided in the SSSI unit condition assessment, a copy of which is included at Appendix 12 of this assessment.

The Swale SPA

Qualifying Features

4.31. The Swale SPA was classified in August 1982 and covers an area of 6509.88 hectares. The SPA is underpinned by the Swale SSSI.

4.32. As outlined in the Natura 2000 Standard Data Form (updated December 2015), the SPA qualifies under Article 4.2 of The Birds Directive (79/409/EEC) by supporting populations of European importance of the following migratory species:

- Dark-bellied Brent Goose;
- Dunlin; and
- Redshank.

4.33. The site also qualifies under Article 4.2 of the Directive by regularly supporting at least 20,000 waterfowl. Species listed on the Natura 2000 Standard Data Form include: Dark-bellied Brent Goose, Gadwall *Anas strepera*, Teal, Oystercatcher, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank.

4.34. The SPA Citation and Natura 2000 Standard Data Form for the Swale SPA is included at Appendix 13 of this assessment.

Conservation Objectives

4.35. The Conservation Objectives for the Swale SPA are included at Appendix 14 of this assessment, and are defined by Natural England as being:

"With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- *The extent and distribution of the habitats of the qualifying features*
- *The structure and function of the habitats of the qualifying features*
- *The supporting processes on which the habitats of the qualifying features rely*
- *The population of each of the qualifying features, and,*
- *The distribution of the qualifying features within the site.*

A046a Branta bernicla bernicla; Dark-bellied brent goose (Non-breeding)
A149 Calidris alpina alpina; Dunlin (Non-breeding)
Breeding bird assemblage
Waterbird assemblage"

4.36. The Conservation Objectives for the SPA also make reference to Supplementary Advice, which is available online (part of the Natural England Conservation Advice for Marine Protected Areas). Consideration has therefore also been afforded to this further information in producing this assessment.

<u>The Swale Ramsar Site</u>

4.37. The Swale Ramsar site was designated on 31 August 1982. It qualifies under Ramsar criteria 2, 5 and 6.

4.38. The site qualifies under Ramsar Criterion 2 on account of the nationally scarce plants that it supports in addition to at least seven British Red Data Book invertebrates.

4.39. The site also qualifies under Ramsar Criterion 5 as it supports an assemblage of international importance of wintering waterfowl, and under Criterion 6 on account of the site supporting Redshank, Dark-bellied Brent Goose and Grey Plover at levels of international importance.

4.40. A copy of the RIS for the site is included at Appendix 15 of this assessment.

The Swale SSSI

4.41. The citation for the Swale SSSI (which underpins the SPA and Ramsar site) lists those interest features for which the site is designated. The citation for this SSSI is reproduced at Appendix 16 of this assessment.

4.42. Detailed information on the current management and quality of the SSSI is provided in the SSSI unit condition assessment, a copy of which is included at Appendix 17 of this assessment.

Queendown Warren SAC

Qualifying Features

4.43. Queendown Warren SAC was designated in June 1995 and covers an area of 14.48 hectares. The SAC is underpinned by Queendown Warren SSSI.

4.44. The SAC supports one Annex I habitat of European importance which is listed as a primary reason for its designation: *"Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites). (Dry grasslands and scrublands on chalk or limestone, including important orchid sites)."*

4.45. No additional qualifying criteria (additional Annex I habitats or the presence of Annex II species) are listed for this designated site.

4.46. The SAC citation and Natura 2000 Standard Data Form for Queendown Warren SAC are included at Appendix 18 of this assessment.

Conservation Objectives

4.47. The Conservation Objectives for Queendown Warren SAC are included at Appendix 19 of this assessment and are defined by Natural England as being:

"With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats*
- *The structure and function (including typical species) of qualifying natural habitats, and*
- *The supporting processes on which qualifying natural habitats rely*

Qualifying Features:

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)"

4.48. As above, the Conservation Objectives also make reference to Supplementary Advice, a copy of which is included at Appendix 20 of this assessment. Consideration has therefore also been afforded to this further information in producing this assessment.

Queendown Warren SSSI

4.49. The citation for Queendown Warren SSSI (which underpins the SAC) lists those interest features for which the site is designated. The citation for this SSSI is reproduced at Appendix 21 of this assessment.

4.50. Detailed information on the current management and quality of the SSSI is provided in the SSSI unit condition assessment, a copy of which is included at Appendix 22 of this assessment.

North Downs Woodlands SAC

Qualifying Features

4.51. North Downs Woodlands SAC was designated in January 2001 and covers an area of 288.58 hectares. The SAC is underpinned by two SSSIs; Halling to Trottiscliffe Escarpment SSSI and Wouldham to Detling Escarpment SSSI (of relevance to this assessment).

4.52. The SAC comprises two Annex I habitats of European importance which are listed as primary reasons for its designation:

- *Taxus baccata woods of the British Isles. (Yew-dominated woodland);*
- *Asperulo-Fagetum beech forests. (Beech forests on neutral to rich soils)*

4.53. The SAC also supports an additional Annex I as a qualifying feature, although this is not a primary reason for the selection of the site: *"Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia). (Dry grasslands and scrublands on chalk and limestone)."*

4.54. No additional qualifying criteria (presence of Annex II species) are listed for this designated site.

4.55. The SAC citation and Natura 2000 Standard Data Form for North Downs Woodlands SAC are included at Appendix 23 of this assessment.

Conservation Objectives

4.56. The Conservation Objectives for North Downs Woodlands SAC are included at Appendix 24 of this assessment and are defined by Natural England as being:

"With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of qualifying natural habitats*
- *The structure and function (including typical species) of qualifying natural habitats, and*
- *The supporting processes on which qualifying natural habitats rely*

Qualifying Features:

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia); Dry grasslands and scrublands on chalk or limestone
H9130. Asperulo-Fagetum beech forests; Beech forests on neutral to rich soils
H91J0. Taxus baccata woods of the British Isles; Yew-dominated woodland"

4.57. As above, the Conservation Objectives also make reference to Supplementary Advice, a copy of which is included at Appendix 25 of this assessment. Consideration has therefore also been afforded to this further information in producing this assessment.

Wouldham to Detling Escarpment SSSI

4.58. The citation for Wouldham to Detling Escarpment SSSI (which underpins the SAC) lists interest features for which the site is designated. The citation for this SSSI is reproduced at Appendix 26 of this assessment.

4.59. Detailed information on the current management and quality of the SSSI is provided in the SSSI unit condition assessment, a copy of which is included at Appendix 27 of this assessment.

Peter's Pit SAC

Qualifying Features

4.60. Peter's Pit SAC was designated in May 2001 and covers an area of 28.91ha. The SAC is underpinned by Peter's Pit SSSI.

4.61. The SAC is designated on account of the site supporting large populations of the Annex II species Great Crested Newt *Triturus cristatus* as a primary reason for the selection of the site. The site does not support any additional Annex I habitats or Annex II species.

4.62. The SAC citation and Natura 2000 Standard Data Form for Peter's Pit SAC are included at Appendix 28 of this assessment.

Conservation Objectives

4.63. The Conservation Objectives for Peter's Pit SAC are included at Appendix 29 of this assessment and are defined by Natural England as being:

"With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- *The extent and distribution of the habitats of qualifying species*
- *The structure and function of the habitats of qualifying species*
- *The supporting processes on which the habitats of species rely*
- *The populations of qualifying species, and,*
- *The distribution of qualifying species within the site.*

Qualifying Features:

S1166. Triturus cristatus; Great crested newt."

4.64. As above, the Conservation Objectives also make reference to Supplementary Advice, a copy of which is included at Appendix 30 of this assessment. Consideration has therefore also been afforded to this further information in producing this assessment.

<u>Peters Pit SSSI</u>

4.65. The citation for Peter's Pit SSSI (which underpins the SAC) lists those interest features for which the site is designated. The citation for this SSSI is reproduced at Appendix 31 of this assessment.

4.66. Detailed information on the current management and quality of the SSSI is provided in the SSSI unit condition assessment, a copy of which is included at Appendix 32 of this assessment.

5. ASSESSMENT OF THE IMPLICATIONS OF THE DEVELOPMENT PROPOSALS FOR THE CONSERVATION OBJECTIVES OF THE INTERNATIONAL / EUROPEAN DESIGNATED SITES

5.1. Section 2 of this document sets out the legislation, guidance and case law of relevance to an assessment of the implications of a plan / project on a European site. Having regard to this legislation and supporting guidance, it is clear that the assessment is a two-stage process, the first being the 'likely significant effect', and the second being the 'integrity test'.

5.2. It is clear that the Conservation Objectives of a European site are the most important consideration in determining whether the plan / project will have an adverse effect on the site, including any effects on its integrity. Indeed, some guidance indicates that it is only the Conservation Objectives against which the plan / project should be tested in line with the Habitats Directive / Regulations. However, other European guidance implies that additional information is relevant.

5.3. It is evident that there is a clear hierarchical approach to assessing effects on European sites in line with the Habitats Directive / Regulations. The primary test is that against the Conservation Objectives with other considerations following these. Such other considerations would include:

- Other features of interest associated with the site; and
- Other relevant baseline information for the site.

5.4. In line with the above, whilst the qualifying interest features of the site and other baseline information have informed this assessment, the greatest weight has been placed upon the formal Conservation Objectives for the European sites, as set out by Natural England. As noted above, consideration has also been afforded to the Supplementary Advice to the Conservation Objectives, produced by Natural England, where relevant.

5.5. This section includes a description of the potentially significant effects arising from the development proposals at the application site on the integrity of each of the international / European designated sites outlined above. The potential effects are assessed within this section in order to address the test under Regulation 63 (1) in the first instance (the 'likely significant effect' stage). The assessment of potential significant effects is undertaken at this stage of the development proposals 'alone' (i.e. not 'in-combination').

5.6. In undertaking this assessment, regard has been had to the best available scientific knowledge. Further consideration under the Habitats Regulations can therefore be undertaken consistent with the *Waddenzee* Judgement, which requires the use of the best scientific knowledge to inform a decision where no reasonable scientific doubt remains as to the presence and / or absence of effects that would adversely affect the integrity of the designated site (see Section 2 above).

5.7. Furthermore, consideration is given to the *People over Wind* Judgement, which confirmed the view of the CJEU that avoidance or mitigation measures can only be taken into consideration at the Appropriate

Assessment stage. This overrules the domestic *Dilly Lane* judgement in the High Court (see Section 2 above).

Identification of potential pathways

5.8. As outlined in detail in Section 4 above, a number of the international / European designated sites situated within 10km of the application site are designated as both SPAs and Ramsar sites. Given that the reasons for the classification of each of the sites which are both an SPA and Ramsar site are essentially similar, it is reasonable to consider the potential impacts upon the designations together, as opposed to undertaking a separate assessment for each.

5.9. On this basis, assessment has been undertaken in relation to the following sites (grouped as stated below):

- Medway Estuary and Marshes SPA / Ramsar Site;
- Thames Estuary and Marshes SPA / Ramsar Site;
- The Swale SPA / Ramsar Site;
- Queendown Warren SAC;
- North Downs Woodlands SAC; and
- Peter's Pit SAC.

5.10. It is necessary to give specific consideration to the extent to which land associated with the development proposals could be classed as 'supporting habitat' for the international / European sites. Supporting habitat (which is sometimes referred to as 'functionally linked land') is that which, whilst not designated, plays an important role in the maintenance of populations of qualifying bird interest features at the SPA / Ramsar site, and/or qualifying species associated with the SAC. This would include, for example, land which provides an important foraging resource for such species. In some instances, adverse impacts on supporting habitat can lead to a conclusion that the plan / project is likely to have a significant effect on the European designated site.

5.11. As outlined in Section 4 above, Medway Estuary and Marshes, Thames Estuary and Marshes and The Swale SPAs / Ramsar sites are designated on account of wetland birds and wildfowl which are predominantly associated with estuarine habitats.

5.12. It is acknowledged that qualifying bird interest features associated with these international / European sites such as Golden Plover and Dark-bellied Brent Geese may utilise sites further inland for foraging. However, the extent to which land provides opportunities for these species depends on a number of factors, not least the current use of the land and management regime, in light of the specific requirements of the birds concerned.

5.13. Guidance with regards to the consideration of off-site impacts on the integrity of European / internationally designated sites is outlined in the English Nature Internal Guidance note regarding integrity (as summarised in Section 2 above). Section 4.6 of this document relates specifically to consideration of off-site impacts that affect a mobile species whilst it is off-site, and specifically states the following:

"Any impact to the designated species (or habitat upon which they are dependent) which causes a significant decline in the size, distribution, structure or function of the population within the designated site, should be considered to have an adverse effect on the integrity of the site. However, a clear link needs to be made between the population being impacted and that of the population within the designated site."

5.14. With the exception of a small number of existing buildings, the application site comprises a commercial orchard used for the growing of top fruit. Grassland areas associated with the orchard are intensively managed, being regularly mown with herbicide treatment applied to the edges. Tall hedgerows with trees are present along the boundaries of the site, which subdivide the site into a number of separate parcels and, together with the orchard, limit sight lines for birds on the ground. For these reasons, the habitats present within the application site do not provide opportunities for qualifying species associated with the international / European designated sites.

5.15. Furthermore, as outlined in the Breeding Bird Survey report (The Ecology Partnership, July 2018; Technical Appendix 15.4 of the ES), specific bird surveys were undertaken at the application site between April and June 2018. None of the qualifying species associated with the SPAs / Ramsar sites were recorded during any of the surveys. This provides further evidence to indicate that the habitats present within the application site boundary are not utilised by qualifying bird species.

5.16. In light of the above, it may therefore be concluded that the application site does not represent land which could be classed as important 'supporting habitat' for any of the SPAs / Ramsar sites considered within this assessment.

5.17. As outlined in Section 3 above, with the exception of Medway Estuary and Marshes SPA / Ramsar site, the application site is significantly separated from all other international / European designated sites in the locality by existing development in Gillingham and Chatham, open countryside and/or significant barriers (such as the River Medway). On this basis, it is considered that there would be no significant direct effects arising on any of these sites as a result of factors such as lighting or noise during the construction or operational phases of the development proposals.

5.18. Medway Estuary and Marshes SPA / Ramsar site lies approximately 200 metres to the north of the application site at its closest point and is separated by agricultural fields and existing (albeit scattered) development along the B2004 Lower Rainham Road. Despite this considerable distance, on a precautionary basis further consideration has been afforded to the potential pathway for direct effects on this site through lighting and noise during construction and operation of the development.

5.19. As outlined in the Flood Risk Assessment and Drainage Strategy (Peter Brett Associates, January 2019; Technical Appendix 8.1 of the ES), hereafter referred to as the FRA, there are no watercourses which flow through or which lie adjacent to the application site boundary. However, there is a potential hydrological pathway between the application site and

the Medway Estuary and Marshes SPA / Ramsar site, in the form of the existing surface water and foul water network that the development proposals would connect with. There are no hydrological links between the application site and any other international / European designated sites.

5.20. As the development proposals are for new residential development, there is also a potential pathway for effects to arise as a result of an increase in recreational pressure; specifically, through physical damage and degradation to habitats, and disturbance to qualifying species associated with the SPAs / Ramsar sites.

5.21. Potential recreational effects are considered to be relevant in particular for Medway Estuary and Marshes SPA / Ramsar site, given its proximity to the site. Although located significantly further away by road (as noted in Section 3 above), as recreational disturbance has been identified as a potential factor for other coastal SPAs / Ramsar sites, consideration has also been afforded to potential effects that could arise at Thames Estuary and Marshes SPA / Ramsar site and the Swale SPA / Ramsar site.

5.22. Queendown Warren SAC, North Downs Woodlands SAC and Peter's Pit SAC are all located a significant distance by road from the application site (7.4km, 15.1km and 16.4km respectively). Notwithstanding this, on a precautionary basis, consideration has also been afforded to the potential for recreational effects to arise at these European designated sites as a result of the development proposals.

5.23. In light of the Wealden Judgement, there is also a potential pathway for an significant effect to arise on international / European designated sites through air quality impacts associated with an increase in road traffic. As such, consideration has been afforded to effects arising on international / European designated sites in the local area, including in particular those situated in proximity to the strategic road network in the locality.

5.24. Potential pathways for significant effects on the international / European designated sites are therefore considered to be limited to the following:

- Direct impacts through lighting and noise (in respect of Medway Estuary and Marshes SPA / Ramsar site only);
- Hydrological impacts (in respect of Medway Estuary and Marshes SPA / Ramsar site only);
- Physical damage and degradation to habitats arising from an increase in recreation;
- Disturbance effects (from dog walking / walking); and
- Air quality impacts associated with increase in traffic emissions.

5.25. These identified pathways for effects are considered in detail below.

<u>Direct impacts from lighting and noise (Medway Estuary and Marshes SPA / Ramsar site)</u>

Vulnerability

5.26. With regard to lighting, it is generally accepted by ecologists that direct illumination of an ecological receptor can be regarded as having a potential

significant impact where illumination is at a level of 1 lux or above. Exceptions to this rule of thumb exist in relation to species which are particularly sensitive to lighting impacts, such as the Greater Horseshoe bat *Rhinolophus ferrumequinum* (not relevant to this assessment) and a lower threshold is applicable in such instances. There is however no reason to suggest that an alternative threshold should be applicable in relation to the relevant SPAs / Ramsar sites.

5.27. Increased noise generated during the construction phase has the potential to disturb qualifying bird species associated with Medway Estuary and Marshes SPA / Ramsar site. Percussive (regular and/or 'sharp') noises in particular have the greatest potential to cause disturbance. Whilst the effect is temporary and reversible, this can cause birds to cease feeding and / or take flight leaving the area of influence, using up valuable energy resources, which can be of particular importance during cold / adverse weather in the winter period. Environment Agency studies have shown that very loud noises (in excess of 70dB) can have impacts on birds at a distance of up to 300 metres.

5.28. In relation to operational impacts from noise levels, qualifying bird interest features are likely to exhibit a level of habituation to noise associated with current land uses in the local area. Indeed, species may tolerate (i.e. further habituate to) increases in noise levels or frequency of events in the long term.

Consideration of Likely Significant Effects

5.29. The nearest part of Medway Estuary and Marshes SPA / Ramsar site is located approximately 200 metres to the north of the application site. The designated sites are separated from the application site by Lower Rainham Road (with some existing street lighting), a number of existing dwellings, treelines and agricultural fields. It is therefore clear that any increase in direct illumination of the designated sites (at a level at or above 1 lux) would not occur as result of the development proposals.

5.30. On this basis, potential lighting impacts could not be considered to be significant when the project is considered either alone or in combination with the existing baseline situation. In any event, in line with best practice and standard engineering protocols, measures will be adopted to minimise lightspill as part of the detailed design and operation of the development proposals.

5.31. As outlined in the Noise and Vibration Impact Assessment (Peter Brett Associates, January 2019), baseline surveys have been undertaken to ascertain the ambient noise levels at the application site and local area. Whilst the assessment does not specifically pertain to European designated sites, the work undertaken is of relevance to the assessment of potential effects that could feasibly arise as a result of the development proposals.

5.32. With regards to the existing baseline, the survey location adjacent to Lower Rainham Road identified baseline ambient noise levels of 64dB $L_{Aeq,T}$ during the day, and 57dB $L_{Aeq,T}$ at night. It is therefore apparent that the northern boundary of the site is subject to a current baseline level of noise associated with road traffic along Lower Rainham Road. As such, any

potential for any additional noise impacts arising from the proposals, either during the construction or the operational period, should be considered against this background (i.e. the proposals would not represent a 'novel' noise source).

5.33. Moreover, the nearest part of the SPA / Ramsar site is located approximately 200 metres to the north of Lower Rainham Road. Given this distance, it is anticipated that noise levels would be much lower than those recorded along the road itself.

5.34. Furthermore, should qualifying bird species utilise the nearest parts of the SPA / Ramsar site, they would invariably be habituated to the existing background noise levels. It is noted however that the vast expanse of intertidal mud within the international / European designated site provides ample opportunities for birds within the site.

5.35. Based on research work undertaken by the Institute of Estuarine and Coastal Studies[3] and Barber (2010), it is well known that birds will habituate to long-term, continuous noise effects. As such, the greatest potential for adverse effects to arise is likely to occur as a result of 'short, sharp' noise events, particularly where these occur in conjunction with particular conditions which are likely to exacerbate the effect (i.e. during very cold weather).

5.36. At present, the existing acoustic environment at the nearest part of the SPA / Ramsar site to the application site is likely to be characterised by continuous, low level noise associated with road traffic along Lower Rainham Road, as well as informal recreation (see below). Given that the development proposals are for new residential development, including residential care and a primary school, it is considered that the development proposals would not lead to a significant effect at the SPA / Ramsar site during the operational period.

5.37. Construction activities are more likely to involve sudden noise events, with comparatively greater potential for instantaneous disturbance events. Studies have indicated an approximate threshold of 50dB for impulsive noise. Noting that ambient noise levels along Lower Rainham Road already exceed this threshold, is considered that short term disruptive noise events arising during construction are highly unlikely to lead to a disturbance effect upon qualifying birds. Furthermore, the application site is visually screened from the nearest part of the SPA / Ramsar site, a factor which is known to be of relevance with regards to the likelihood of disturbance arising to qualifying birds (as identified in particular in the IECS study cited above).

5.38. Given the negligible increase in noise levels arising during construction, in light of the baseline situation, it is considered that the potential for adverse effects to qualifying species from noise impacts during construction is negligible.

5.39. In summary therefore, it is considered that the development proposals would not be likely to give rise to significant effects upon international /

[3] Cutts, N., Phelps, A. & Burdon, D. (2009) *Construction and waterfowl: Defining Sensitivity, Response, Impacts and Guidance*. Report to Humber INCA

European designated sites as a result of lighting or noise impacts, either during the construction or operational periods, either alone or in combination with other plans or projects.

5.40. It is considered that this conclusion may be reached without requirement for any specific mitigation or avoidance measures required specifically for the SPA / Ramsar site, beyond those which form an integral part of the construction works or operation of the site (e.g. standard engineering protocols and best practice). As such, it is considered that this complies with relevant case law (specifically the *People over Wind* Judgement).

Hydrological impacts

Vulnerability

5.41. Estuarine habitats are susceptible to toxic contamination, sedimentation and erosion, with the latter two also affecting the structure of the habitats present. Toxic contamination has the potential to kill off benthic, and other invertebrates as well as plant species. Via the uptake of toxins by these groups, knock on effects on organisms further up the food chain (e.g. birds) are also possible. The hydrology of Medway Estuary and Marshes SPA / Ramsar site is for the most part associated with the tidal influences of the estuary.

Consideration of Likely Significant Effects

5.42. As noted above, the development proposals are located approximately 200 metres from the nearest part of the international / European designated site, and there are no watercourses which flow through or which lie adjacent to the application site which are linked to the SPA / Ramsar site.

5.43. As such there is no potential pathway for an adverse effect to arise to the designated site during the construction phase through hydrological impacts, such as surface run-off, contaminated water or siltation. In any event, it is expected that standard mitigation measures and best engineering practice shall be employed throughout the construction period. Such measures would include (as necessary) the provision of spill kits to machine operators, use of interceptors/bunds where appropriate and agreed safe storage protocols for any chemicals on site.

5.44. It is important to note that any such measures implemented during construction, which are likely to be secured under a Construction Environmental Management Plan (CEMP), form an integral part of the design of the scheme, and are not required specifically or especially in relation to the European designated sites.

5.45. As outlined in the FRA, the surface water drainage strategy for the proposed development involves the delivery of a Sustainable Urban Drainage System (SuDS). As illustrated on the Drainage Strategy plan (which forms part of the planning application), the proposals will utilise a series of attenuation basins and swales throughout the site. Measures will be incorporated to restrict runoff velocities within the swales during extreme events.

5.46. Paragraph 6.2.4 of the FRA highlights the findings of the Ground Conditions Assessment, which indicate that the "*potentially highly permeable chalk aquifer is overlain by circa 2m to 6m of low permeability clays*". As such, the development proposals intend to include deep bore or trench soakaways within or adjacent to attenuation basins. This would enable more surface water runoff to be discharged to ground, as opposed to the existing sewer network. However, given that further investigation will be required to confirm that infiltration drainage is viable, a precautionary approach has been adopted and the drainage strategy assumes a 'no-infiltration' system.

5.47. As outlined in paragraph 6.2.6 of the FRA, the proposed drainage system would be connected to an existing surface water sewer (MH2754), which eventually discharges into the River Medway via an existing outfall. The rate of discharge into the surface water sewer will be maintained at current ('green field') run-off rates. The design of the SuDS will ensure that water quality associated with development runoff will be managed through a series of measures, such as gully pots on highways (to remove physical sediment and contaminants), hydrocarbon interceptors, attenuation ponds (removal of residual fine sediment and absorbed contaminants) before discharge to the existing surface water sewer. The final detail of the drainage strategy will be informed by further technical studies and will be agreed with the Lead Local Flood Authority (Medway Council) at the detailed planning stage.

5.48. As outlined in Section 7 of the FRA, in terms of foul water drainage the proposed development will connect to the existing public sewer network. Given its proximity to the site, it is considered likely that waste water will be treated at Motney Hill Waste Water Treatment Works (WWTW). To date, Southern Water have not raised any concerns with regards to capacity at the site.

5.49. Given that the design of the development proposals incorporates appropriate measures including the delivery of a SuDS system (proposed irrespective of the international / European designated site), the risk of potential adverse effects (via hydrological pathways) occurring as a result of the development proposals are considered to be *de minimis* in nature.

5.50. On this basis, it may be concluded that the development proposals would not be likely to have a significant effect on the European / international designated sites via hydrological impacts, either considered alone or in combination with other plans or projects.

<u>Physical damage and degradation to habitats</u>

Vulnerability

5.51. Whilst more generally associated with disturbance of species, visitor pressure can in some instances cause degradation of habitats through erosion, soil enrichment from dog faeces / urine, littering and fire setting for example. This assessment has focussed upon the extent to which any effects could be deemed as significant.

5.52. Recreational pressure on a wildlife site has the potential to cause the degradation of its qualifying habitat features. Evidence suggests that such

effects relate to erosion of habitat features through walking and cycling, trampling of vegetation, soil enrichment (through dog fouling), fly-tipping/littering and fires. In all but the case of fires, these potential pathways for impacts are directly related to the frequency of visits and management of visitors on site. In the case of fire damage, this is generally as a result of anti-social behaviour (arson) and is more prevalent in habitats in close proximity to residential areas.

5.53. Furthermore, some habitat types are more susceptible to damage as a result of an increase in recreational disturbance than others. Vegetation associated with some habitats can be fragile and therefore more vulnerable to disturbance and damage than other habitat types. However, sensitive habitats can be influenced by a range of other factors that are not related to recreational pressure, including scrub encroachment, natural erosion, grazing and hydrology.

5.54. Where existing tracks and public rights of way (PROW) are clearly defined on the ground (well work tracks) and where suitable visitor management initiatives (e.g. signage) and a maintenance plan are in place, adverse impacts from visitor pressure are as a consequence far more limited in extent. This is because erosion impacts, often associated with walkers, runners, horses and cyclists, are concentrated along specific routes, leaving the wider area free from such effects.

Consideration of Likely Significant Effects

5.55. The proposed development will deliver up to 1,250 new residential units. Considering an average number of residents of 2.4 people per household[4] for Medway, the new development could give rise to approximately 3,000 additional people.

5.56. Some of these new residents would be expected to own pets, including dogs, and access to nearby recreational areas for dog walking will be required. Evidence from the Pet Food Manufacturers Association (PFMA) indicates that 21% of households in the south-east of England own a dog[5]. On this basis, it is assumed that the development proposals would result in an increase of approximately 263 dogs.

5.57. As outlined in detail in Section 3, with the exception of Medway Estuary and Marshes SPA / Ramsar site (see below), the application site is significantly separated from all other international / European designated sites. Table 1 below summarises the shortest distance by road for the application site that new residents would need to travel to each of these sites.

[4] Figure for average household size (persons) for Medway, taken from 2011 Census
[5] PFMA (2019). *Dog Population 2019*.

Site Name	Minimum Distance (by road) from application site
Queendown Warren SAC	7.4 km
The Swale SPA / Ramsar site	14.5 km
North Downs Woodland SAC	15.1 km
Peter's Pit SAC	16.4 km
Thames Estuary and Marshes SPA / Ramsar site	19 km

Table 1: Minimum distance from the application site to international / European designated sites

5.58. It is important to note that the distances above do not take into consideration whether there are opportunities for car parking; as such, it is probable that residents would need to travel even further to reach car parks (if they are present).

5.59. It is therefore evident that any new resident would need to travel a very significant distance by car in order to reach just the nearest part of these international / European designated sites. By definition, visitors would then need to access the sites themselves in order to have a potential effect upon them. On this basis, it is considered highly unlikely that new residents would visit the SPA / SAC / Ramsar sites in any significant numbers, even more so on a regular basis.

5.60. Furthermore, as noted above, the qualifying features of Medway Estuary and Marshes SPA / Ramsar site, The Swale SPA / Ramsar site and Thames Estuary and Marshes SPA / Ramsar site essentially comprise populations and assemblages of wildfowl and wetland birds (with the exception of wetland plants and invertebrate features associated with Ramsar site). Whilst recreational pressure can potentially result in degradation to the habitats which are associated with (and which support) these qualifying features, the qualifying features of these SPAs and Ramsar sites, in and of themselves, are not sensitive to physical damage and degradation.

5.61. Moreover, it is noted that the key habitats for qualifying species at these sites are estuarine in nature. These habitats are in the main inaccessible for walkers and dog walkers, with the vast majority of the designated sites not accessible. It is clear from OS mapping and aerial photography that public footpaths at Medway Estuary and Marshes SPA / Ramsar site are primarily restricted to the boundary of the designated site. Any potential effects as a result of physical damage (trampling or erosion) or localised nutrient enrichment would therefore be restricted to existing footpaths.

5.62. Whilst it is noted that access into the coastal SPA / Ramsar sites is possible in some locations – for instance at Horrid Hill for Medway Estuary and Marshes SPA / Ramsar site – there are a limited number of footpaths and tracks, with few opportunities for visitors to stray from the designated routes into the marshy or mudflat habitats.

5.63. It is considered that other factors relating to physical habitat damage and degradation are of far greater significance; for instance, the potential for estuarine habitats to change dynamically in light of restrictions imposed from coastal defences. In this light, it is considered that the potential for an

adverse effect to the coastal SPAs / Ramsar sites from physical damage or degradation to habitats (arising as a result of an increase in recreational pressure) is very limited indeed.

5.64. Having considered the Supplementary Advice to the Conservation Objectives for each of the coastal SPAs, no reference is made to potential damage to habitats associated with the qualifying features arising from recreational pressure.

5.65. Qualifying features associated with the SACs identified within 10km radius of the application site are potentially more susceptible to physical damage arising from an increase in recreational pressure. However, there are a number of important factors to consider in relation to each of these sites, as outlined below.

5.66. Both North Downs Woodland SAC and Peter's Pit SAC are located a very significant distance by road from the application site (over 15km). Moreover, there do not appear to be specific parking opportunities associated with the nearest components of these sites to the application site. As such, the probability of new residents driving to either of these designated sites for informal recreation is considered to be very unlikely indeed.

5.67. Moreover, the site-specific characteristics of both of these sites would further limit the potential for habitat damage to occur. North Downs Woodlands SAC is located on a steep south-facing slope, which is likely to discourage access into the European designated site beyond the recognised public rights of way. Similarly, whilst there is a public right of way passing through Peter's Pit SAC (which is managed by Kent Wildlife Trust), it is understood that no public access is permitted due to health and safety (as the site represents a former quarry).

5.68. Although there is a car park located to the north-east of Queendown Warren SAC, and access is possible within the European designated site, given the distance that residents would need to travel from the application site along country lanes, it is considered very unlikely that there would be a significant increase in informal recreation at this site.

5.69. No reference to potential damage arising from informal recreation is made in either the Supplementary Advice to the Conservation Objectives for any of these SAC, nor the SSSI citations or condition assessments for the components which underpin these sites.

5.70. Given the above, any risk of potential adverse effects (from physical damage and degradation to habitats) occurring as a result of the development proposals are considered to be *de minimis* in nature.

5.71. On this basis, it may be concluded that the development proposals would not be likely to have a significant effect on any international / European designated sites via physical damage or degradation to habitats, either considered alone or in combination with other plans or projects.

5.72. Moreover, it is considered that this conclusion may be reached prior to the consideration of any avoidance or mitigation measures.

5.73. Nonetheless, as noted below, the development proposals incorporate a package of measures including a financial contribution towards strategic mitigation at the North Kent Coast European sites (SAMM) to mitigate for potential effects at the European designated site, the provision of areas of informal open space within the site, and also discussions regarding additional measures to further promote off-site open space in the local area.

Disturbance effects

Vulnerability

5.74. With respect to disturbance of bird species, recreational disturbance has the potential to displace birds either temporarily or sometimes permanently. If such disturbance is continuous, or very frequent, it could cause the habitat to become unsuitable for birds, resulting in an affect on their distribution in the immediate locality. This type of disturbance is most likely to occur near to well-used footpaths and may result from a range of recreational uses.

5.75. The level of disturbance to wetland bird species varies by according to the activity undertaken. It is generally recognised that dog walking has the greatest potential to lead to disturbance of birds, especially where dogs are off the lead. However, such disturbance is still typically focused along accessible rights of way, particularly where access into the European sites is restricted for both people and dogs.

5.76. Consideration must also be afforded to particularly sensitive periods for disturbance. During Winter, birds are susceptible to adverse effects through disturbance due to food sources being scarcer and efficient use of energy being of heightened importance to survival. During the breeding season, disturbance can result in adult birds being flushed from nests, leaving eggs or young exposed to the elements and predation. Prolonged or repeated disturbance can cause the adults to abandon a nest site.

Consideration of Likely Significant Effects

5.77. As outlined in Section 4 above, the coastal SPAs / Ramsar sites are designated on account of the presence of wetland and wildfowl bird populations. With the exception of Avocet, Little Tern and Common Tern (in the Medway Estuary), these sites are designated on account of the wintering populations and assemblages that they support.

5.78. As outlined above, the new development could give rise to approximately 3,000 additional people and an increase of approximately 263 additional dogs. Informal recreational activity associated with new residents is likely to include both walking and dog walking.

5.79. Medway Estuary and Marshes SPA / Ramsar site lies approximately 200m to the north of the application site at its closest point. It is noted that there are a number of footpaths and public rights of way which lead to the north from Lower Rainham Road, which provide access to Riverside Country Park and the international / European designated site.

5.80. Whilst no pedestrian links are proposed leading from the proposed development towards the application site, given that the main access point (for traffic) to the site is via Lower Rainham Road, there remains potential for new residents to access the SPA / Ramsar site on foot. Access is possible via a number of pathways, roads and public rights of way which lead to the north from Lower Rainham Road.

5.81. Similar to the other coastal SPAs / Ramsar sites, Medway Estuary and Marshes SPA / Ramsar site supports a footpath network which tends to be focused around the edge of the shoreline and estuary habitats, which are likely to be attractive to new residents. As noted previously, disturbance arising as a result of an increase in recreational pressure would be focused along existing routes, and as such should be viewed as a potential increase in existing pressures, as opposed to introduction of a new pathway for an effect.

5.82. With the exception of Medway Estuary and Marshes SPA, all other international / European designated sites are located a significant distance away from the application site, with a drive of at least 7.4km required to reach the nearest part of any other site. As such, the likelihood of regular (i.e. daily) basis for informal recreation is considered to be very limited indeed, due to the significant distance which would need to be travelled. It is however possible that a proportion of new residents could visit the designated sites, on an occasional basis.

5.83. In the context of existing visitor pressure at Thames Estuary and Marshes SPA / Ramsar site and The Swale SPA / Ramsar site, and given the distances concerned, in light of the above it is considered that the application proposals are unlikely to lead to any significant increase in recreational pressure when considered alone. However, there remains a very small potential for an effect to arise when the proposals are considered in combination with other plans and projects.

5.84. As outlined in Section 4 above, Queendown Warren SAC and North Downs Woodland SAC are designated on account of the qualifying Annex I habitats present; specifically, calcareous grassland, Yew woodland and Beech woodland. Peter's Pit SAC is designated on account of the presence of Great Crested Newts. None of these features are susceptible to disturbance effects from informal recreation. Whilst the SSSI citations list other features associated with these sites, including faunal species / groups, given the significant distance from the application site it is considered unlikely that disturbance would arise, such that could result in any adverse effect upon the integrity of the European designated sites.

5.85. In summary, in the absence of avoidance and mitigation measures, there remains potential for a significant effect to arise on the integrity of Medway Estuary and Marshes SPA / Ramsar site through disturbance from informal recreation. There is also some (albeit very minor) potential for an effect to arise on Thames Estuary and Marshes SPA / Ramsar site / The Swale SPA / Ramsar site when the project is considered in combination with other plans and projects. As such further consideration (in the form of an Appropriate Assessment) is necessary (see Section 6 below).

Air quality impacts (increased traffic emissions)

Vulnerability

5.86. Qualifying habitats within a number of designated sites are known to be particularly sensitive to changes in air quality. Exceeding critical values for air pollutants may result in changes to the chemical status of habitats, accelerating or damaging plant growth, altering vegetation structure and composition and thereby affecting the quality and availability of habitats, and in turn their suitability to support qualifying species (e.g. for feeding, nesting and roosting birds associated with the SPAs).

5.87. Critical loads and levels are thresholds below which such harmful effects on sensitive habitats will not occur to a notable level, according to the best available scientific evidence. There is significant variation in the sensitivity of habitats, with some identified to be very sensitive (such as heathland and species-rich grassland) and others comparatively less so.

5.88. Emissions from vehicular traffic arising as a result of the development proposals provides a potential pathway for air quality effects to arise on designated sites. The primary pollutants which can (in some circumstances) give rise to adverse effects on European designated sites include oxides of nitrogen (NOx), which can contribute towards eutrophication (enrichment of nutrients / minerals) and acidification.

5.89. Acid deposition relates to the acidifying effect of pollutants, which can be either acidic, such as in the case of nitric acid, or basic as in the case of ammonia, on soils and hydrological systems. Acidification can occur through either wet (affiliated with precipitation) or dry deposition (gasses or particles). With reductions in SO_2, NOx (and reduced nitrogen compounds) are now the major contributor to acid deposition in the UK. Acid deposition can cause direct damage to plants, causes a change in the chemical balance of soils and hydrological systems and can substantially reduce microbial activity.

5.90. Nitrogen deposition is the input of (reactive) nitrogen compounds, most notably in the form of NOx, NH_3 (ammonia), nitrous oxide and nitrates along with other chemical form of nitrogen. These inputs can be in the form of dry deposition (gases or particles) or wet deposition (affiliation with precipitation). The key effects of nitrogen deposition are acidification (described above), eutrophication and an increase in the availability of reduced forms of nitrogen such as ammonium.

5.91. Nitrogen is a key plant growth nutrient and all plants require it to grow. Vascular plants take up the majority of their nitrogen through their root system but some nitrogen can be absorbed via stomata or the cuticle. Non-vascular plants (e.g. lichens and bryophytes) can absorb nitrogen through their entire surface. Most plants use reactive nitrogen (see above), but some can use organic nitrogen (e.g. amino acids). In the event that carbon assimilation is restricted, for example by insufficient phosphorous, light or water availability, then nitrogen can accumulate to excess and become toxic.

5.92. Eutrophication is the term given to the enrichment of soils and the aquatic environment by increased nutrients / minerals. Nitrogen deposition (by various means) is a major source of eutrophication. Aside from direct effects on non-vascular plants, over time adverse effects can occur on those plants which do not have capacity to assimilate nitrogen in the presence of increased nitrogen availability (for example from deposition). In this scenario such plants can be outcompeted by plants that can. Overall species loss within the community is caused by shading and / or an inability to compete for other resources. Low growing species and non-vascular plants are at increased risk.

Consideration of Likely Significant Effects

5.93. With regards to the potential for effects to arise as a result of increased nitrogen deposition from increased road traffic emissions, regard has been given to the guidance produced by Natural England. The approach towards assessment is outlined in an Internal Guidance Note, entitled "*Natural England's approach to advising competent authorities on the assessment of road traffic emissions under the Habitats Regulations*" (June 2018).

5.94. Section 4 of the Internal Guidance Note provides advice on screening for likely significant effects and details a number of sequential steps which should be followed. Consideration has been afforded to each of these steps below, in light of detailed analysis of likely effects arising from the development proposals.

Step 1 – Does the proposal give rise to emissions which are likely to reach a European site?

5.95. In the first instance, the Natural England guidance seeks to identify whether development proposals give rise to emissions that could reach a European site. The key factor to consider at this initial stage is the distance between an emission source (in this case, the road network) and the receptor (the European site).

5.96. It is a commonly held view by air quality specialists that in the majority of instances, deposition at 200 metres from a road is at a level which is so small as to be insignificant (i.e. *de minimis*). Both Natural England and Highways England[6] (the relevant statutory authorities in such matters) concur that 200 metres is an appropriate screening distance for use in assessment purposes. That is to say, potential effects can be screened out of the assessment process where qualifying interest features of a European designate site do not fall within 200 metres of a road affected by the plan or project. This position is outlined in paragraph 4.10 of the Internal Guidance note and is similarly reflected in the Design Manual for Roads and Bridges (DMRB).

5.97. Given the scale of the development, and in line with pre-application advice from Natural England, consideration has been afforded not only to the road network in close proximity to the application site, but also the wider strategic road network (including the M2 motorway and major A roads).

[6] Highways England. Design Manual for Roads and Bridges, Volume 11 Section 3, Part 1 – Air Quality

5.98. As illustrated at Plan ECO1 (and summarised in Section 3 above), Medway Estuary and Marshes SPA / Ramsar site is located approximately 0.2km to the north of the application site at its closest point. However, it is noted that at a number of locations, sections of the SPA / Ramsar site lie within 200 metres of the B2004 Lower Rainham Road and the A289 Danes Hill / Gads Hill, leading towards the west. Noting that the primary road access for the development will be onto Lower Rainham Road, it is therefore clear that the potential for an effect must be considered further.

5.99. Furthermore, as noted in Section 3 above and illustrated on Plan ECO1, both Thames Estuary and Marshes SPA / Ramsar site and the Swale SPA / Ramsar site lie immediately adjacent to major roads (the A228 serving the Isle of Grain and the A249 serving the Isle of Sheppey respectively). Notwithstanding the significant distance that any new residents would need to travel to reach the nearest points (19km and 14.5km respectively, as stated in Section 3 above), consideration of potential air quality effects is therefore also required in respect of these sites.

5.100. The nearest component of North Downs Woodland SAC also lies within 200 metres of the strategic road network in two locations – the A229 at Kit's Coty to the west, and the A248 at Detling to the east. Again, notwithstanding the distances concerned (15.1km and 16.4km respectively), consideration has also been afforded to this European site.

5.101. Queendown Warren SAC is located approximately 310 metres to the south of the M2 motorway at its closest point. Whilst there are a number of minor roads which lie within 200 metres of the SAC, they are isolated from the wider strategic road network and may best be described as rural lanes. On this basis, and given the distances concerned, it is considered that air quality effects arising from traffic emissions can be scoped out in respect of this site.

5.102. Similarly, Peter's Pit SAC is located well over 200 metres from any major roads (with the nearest such road, the A228, situated approximately 900 metres to the west). As such it may be concluded that air quality effects can also be scoped out in respect of this site.

Step 2 – Are the qualifying features of sites within 200m of a road sensitive to air pollution?

5.103. The next point to consider is whether or not the qualifying features of the European site are sensitive to air quality impacts. Initially this is undertaken at a broad scale, considering the qualifying features (habitats and species) for which the site has been classified or designated.

5.104. The Air Pollution Information System (APIS) is a primary source of information relating to air pollution sensitivities and effects in relation to European designated sites and their relevant qualifying interest features. The APIS website is hosted and maintained by the Centre for Ecology and Hydrology (CEH), with the following partner organisations; Joint Nature Conservation Committee (JNCC), Natural England, Environment Agency, Northern Ireland Environment Agency (NIEA), Scottish Natural Heritage (SNH), Sniffer, Natural Resources Wales (NRW) and the Scottish Environment Protection Agency (SEPA).

5.105. APIS provides key information about the sensitivity of features to specific pollutants, both in terms of broad category (habitat, ecosystems and species) and by qualifying feature on each designated site.

5.106. Further information with regards to the sensitivity of qualifying features to air quality effects arising from emissions may also be found in the Supplementary Advice to Conservation Objectives published by Natural England. This is particularly the case with regards to the coastal / estuarine sites which are of relevance to this assessment.

5.107. Having considered the information available on APIS, it is apparent that whilst not all qualifying features are sensitive to air quality effects, a number of those associated with the SPAs / Ramsar sites and also North Downs Woodlands SAC are sensitive to nitrogen deposition. On this basis, further consideration in relation to all of these sites is required.

Step 3 – Could the sensitive qualifying features of the site be exposed to emissions?

5.108. It is axiomatic that not all qualifying features associated with a European designated site are distributed evenly throughout each site. It would therefore be incorrect to assume that all qualifying features are present at any given location within the designated site. On this basis, as outlined in the Natural England Internal Guidance note, the Conservation Objectives of the site are "*unlikely to apply equally to all parts of a site*".

5.109. Consideration has therefore been afforded as to whether the qualifying features associated with each of the European designated sites are (or may be) located within 200 metres of the strategic road network.

5.110. Whilst detailed assessment of all features in each zone has not been undertaken (for instance, through specific habitat survey work), regard has been afforded to the information and datasets available on the MAGIC website[7], managed by Natural England with a number of partners including Department for Environment, Food and Rural Affairs (DEFRA), Historic England, Environment Agency, Forestry Commission and Marine Management Organisation.

5.111. In particular, consideration has been afforded to the Priority Habitat Inventory dataset, published by Natural England, which illustrates the geographic distribution and extent of habitats of principal importance. Whilst in some instances there are differences (for instance, between the Annex I habitats associated with SACs and Priority Habitats), this dataset provides very useful information for the purposes of this assessment. Regard has also been afforded to the Intertidal Substrate Foreshore (England and Scotland) dataset, published by the British Geological Survey, insofar as it relates to the coastal SPAs / Ramsar sites.

5.112. With regards to Medway Estuary and Marshes SPA / Ramsar site, it is apparent from the Priority Habitat dataset, Ordnance Survey mapping and aerial photography that the parts of the designated site which lie within 200

[7] MAGIC website. Available at: https://magic.defra.gov.uk/.

metres of the B2004 Lower Rainham Road and the A289 Danes Hill / Gads Hill comprise either intertidal mudflats (which represents the vast majority) or coastal saltmarsh (in one location close to Gads Hill). On this basis, assessment is required in respect of sensitive qualifying species associated with these habitats (in accordance with information on APIS and the Supplementary Advice).

5.113. With regards to Thames Estuary and Marshes SPA / Ramsar site, information obtained from mapping, aerial photography and MAGIC identifies that habitats within 200m of the A228 include reedbeds and coastal / floodplain grazing marsh. Assessment is therefore required in respect of sensitive qualifying species associated with these habitats.

5.114. Similarly, with regards to the Swale SPA / Ramsar site, habitats within 200m of the A249 include coastal / floodplain grazing marsh, semi-improved grassland, reedbeds, lowland fens, intertidal mudflats and coastal saltmarsh. Assessment is therefore required in respect of sensitive qualifying species associated with these habitats.

5.115. With regards to North Downs Woodlands SAC, habitats identified in the nearest parts of the strategic road network include deciduous woodland (to the west of the A249) and coniferous woodland (to the east of the A229). Assessment is therefore required in respect of qualifying habitats which fall under these broad categories (i.e. both of the Annex I habitats for which the site has been designated).

Step 4 – Application of screening thresholds

5.116. As outlined in the Internal Guidance Note, if a plan or project has not been screened out, the next step is to consider the risk from road traffic emissions associated with the proposal. Guidance from Natural England (and Highways England) considers that the process contribution can be considered either in terms of the predicted average annual daily traffic flow (AADT as a proxy for emissions) or the predicted emissions themselves (the actual process-contribution).

5.117. In accordance with the Internal Guidance Note, an increase in 1000 AADT for traffic numbers or 1% of the critical load or level for emissions is considered to be significant. It is stated that these thresholds are:

"*considered by Natural England's air quality specialists (and by industry, regulators and other statutory nature conservation bodies) to be suitably precautionary, as any emissions below this level are widely considered to be imperceptible and, in the case of AADT, undetectable through the DRMB model. There can therefore be a high degree of confidence in its application to screen for risks of an effect.*"

5.118. Where the screening assessment indicates that effects are screened out alone, the screening assessment is then applied in combination.

5.119. David Tucker Associates (DTA) has undertaken a specific assessment in order to identify relevant increase in traffic movements as a result of the development proposals, when considered in combination with other relevant plans or projects, notably the emerging Medway Local Plan, recent

consents and wider general traffic growth. This assessment has considered both the local road network (including in particular the B2004 Lower Rainham Road and A289 Danes Hill / Gads Hill), and also key locations in the wider strategic road network associated with Thames Estuary and Marshes SPA / Ramsar site, Swale SPA / Ramsar site and North Downs Woodlands SAC (as noted above).

5.120. The DTA assessment is broad and detailed, presenting AADT analysis for the key strategic road network. The impact of the development proposals, in AADT terms, is described fully, with reference to the projected position at 2022 in combination with the Medway Local Plan and those other plans and projects assessed as part of undertaking the Medway Local Plan HRA. Thus, for HRA purposes, an 'in combination' assessment of AADT has been undertaken.

5.121. In the first instance, consideration was afforded to the change in AADT anticipated as a result of the development proposals (considering the proposals alone and in combination), using the figures calculated by DTA as a proxy for air quality effects. Where potential for an effect was identified, detailed air quality modelling was subsequently undertaken by Peter Brett Associates (PBA), as outlined below.

5.122. It is noted that 2017 was selected as the baseline year for both traffic and air quality modelling, as it represents the most recent year for which monitoring data and meteorological data (required for further detailed assessment, as outlined below) is available. The 'future' assessment year (both with and without the proposed development) was taken to be 2022.

Traffic Modelling (Change in AADT)

5.123. The results of the traffic modelling work undertaken by DTA are outlined in Tables 2 to 4 below (with the full detail and methodology provided in Chapters 5 and 6 of the Transport Assessment, Technical Appendix 10.1 of the ES). It should be noted that the figures outlined below have been rounded to the nearest whole number.

5.124. Table 2 relates to Medway Estuary and Marshes SPA / Ramsar site. As outlined below, the development proposals are expected to result in an increase in over 1000 AADT (alone) both along the B2004 Lower Rainham Road towards the west and also along the A289 Danes Hill / Gads Hill. Whilst the increase in traffic along Lower Rainham Road towards the east both alone and in combination with the Medway Local Plan is less than 1000 AADT, it is evident that more detailed assessment is required (as outlined below).

Road	Baseline AADT (2017)	AADT – 2022 Without Development (with Medway Local Plan)		AADT – 2022 With Development (including Medway Local Plan)		Total AADT
		Increase	Total	Impact of Development Proposal	Total Increase	
B2004 Lower Rainham Road (East of access)	8,776	+793	9,569	+92	+886	9,662
B2004 Lower Rainham Road (West of access)	8,776	+793	9,569	+2,512	+3,305	12,081
A289 Danes Hill / Gads Hill	34,242	+3,058	37,300	+2,023	+5,081	39,323

Table 2: Traffic Modelling of locations relevant to Medway Estuary and Marshes SPA / Ramsar site

5.125. With regards to Thames Estuary and Marshes SPA / Ramsar site, as outlined in Table 3 below the development proposal is anticipated to result in a nugatory increase in AADT along the A228 compared to the existing situation (increase of +10). It is therefore clear that a potential air quality effect arising as a result of the development proposals, when considered alone, can be scoped out.

5.126. With regards to potential for an in-combination effect, the predicted increase in AADT (including the Local Plan and the development proposals) is +776, which still falls significantly below the 1000 AADT threshold identified for a measurable effect. On this basis, it is considered that the potential for effects arising from air quality on Thames Estuary and Marshes SPA / Ramsar site, both alone and in combination, can be robustly scoped out.

Road	Baseline AADT	AADT – 2022 Without Development (with Medway Local Plan)		AADT – 2022 With Development (including Medway Local Plan)		Total AADT
		Increase	Total	Impact of Development Proposal	Total Increase	
A228 at Grain	8,582	+766	9,348	+10	+776	9,358

Table 3: Traffic Modelling of location relevant to Thames Estuary and Marshes SPA / Ramsar site

5.127. Similarly, as outlined in Table 4 below, the predicted increase in AADT arising as a result of the development proposals on the A249 passing through the Swale SPA / Ramsar site is insignificant when considered alone (increase of +21). However, when considered in combination with the Medway Local Plan, the increase is significantly greater than 1000 AADT (increase of +3,306). On this basis, whilst potential effects alone can be scoped out, there remains potential to contribute (to a miniscule degree) towards an effect when considered in combination with other plans and projects. Further detailed assessment has therefore been undertaken, as below.

Road	**Baseline AADT**	**AADT – 2022 Without Development (with Medway Local Plan)**		**AADT – 2022 With Development (including Medway Local Plan)**		**Total AADT**
		Increase	**Total**	**Impact of Development Proposal**	**Total Increase**	
A249 at Iwade	36,795	+3,286	40,081	+21	+3,306	40,101

Table 4: Traffic Modelling of location relevant to Swale SPA / Ramsar site

5.128. Assessment undertaken with regards to the two sections of the strategic road network in close proximity to North Downs Woodlands SAC, as presented in Table 5 below, also identifies that the increase in AADT arising as a result of the development proposals is significantly lower than 1000 AADT (with figures of +21 and +545 respectively). As such, the potential for an effect arising when the proposals are considered alone can be scoped out.

5.129. However, again when considered in combination with the Medway Local Plan the increase is significantly greater than 1000 AADT (increases of +4,373 and +6,437 respectively), and as such there remains potential for an in-combination effect. Further consideration is therefore required in respect of this site.

Road	**Baseline AADT**	**AADT – 2022 Without Development (with Medway Local Plan)**		**AADT – 2022 With Development (including Medway Local Plan)**		**Total AADT**
		Increase	**Total**	**Impact of Development Proposal**	**Total Increase**	
A249 at Detling	48,974	+4,373	53,347	+21	+4,394	53,368
A229 at Kit's Coty	65,983	+5,892	71,875	+545	+6,437	72,420

Table 5: Traffic Modelling of location relevant to North Downs Woodlands SAC

5.130. In summary, based on consideration of AADT data, the assessment has identified that there is potential for an effect to arise on Medway Estuary and Marshes SPA / Ramsar site both alone and in combination.

5.131. With regards to the Swale SPA / Ramsar site and North Downs Woodlands SAC, maximum increases of +21 AADT and +545 AADT resulting from the proposed development proposals are predicted. It is concluded by Ecology Solutions that in both cases the predicted increase is *de minimis* given the baseline AADT figures. For clarity, +21 AADT represents an increase of approximately 0.06% of the current baseline AADT for the A249 (Swale), whilst +545 AADT represents an increase of approximately 0.83% of the current baseline for the A229 (North Downs Woodlands). In both cases, this increase is so small that any effects arising would not be measurable against the baseline AADT.

5.132. However, in combination with the predictions associated with the Medway Local Plan, the AADT screening threshold of 1000 is clearly breached with regards to both of these international / European designated sites.

5.133. Taking a precautionary approach, and in view of Natural England's published guidance and relevant case law, further detailed consideration of the proposals has been undertaken in order to ascertain whether an adverse effect on the integrity of the international / European designated sites would arise as a result of the development proposals. As such, further detailed consideration has been afforded to site specific air quality data as discussed below.

<u>Dispersion Modelling (Air Quality)</u>

5.134. As outlined in detail in the Air Quality Chapter of the ES, atmospheric dispersion modelling has been undertaken by Peter Brett Associates, both in respect of human receptors and also the international / European designated sites as outlined above. The results of the assessment work undertaken are presented in Chapter 12 of the ES (including relevant figures and appendices), which should be read in conjunction with this assessment.

5.135. Dispersion modelling has been undertaken at a number of key locations associated with each of the international / European designated sites as outlined above. Transects were selected such that the impact of emissions at increased distance from the source (road) can be assessed. A total of five transects were identified in respect of Medway Estuary and Marshes SPA / Ramsar site (E1 to E5 inclusive); two transects were identified in respect of the Swale SPA / Ramsar site (L1 and L2) and two transects were identified in respect of North Downs Woodlands SAC (L3 and L4). The locations of these transects are shown at Figures 12.2, 12.5, 12.6 and 12.7 respectively.

5.136. Three scenarios were assessed: baseline flows as per 2017; future assessment of 2022 including traffic growth, committed development and measures in the Medway Local Plan, and the 2022 future assessment which additionally includes the proposed development. As such, the assessment considers effects in combination.

5.137. Given that the anticipated completion date for the proposed development is 2029, to ensure that a worst-case scenario has been modelled, the air quality assessment work was undertaken using 2029 traffic data. It is

considered that this approach fully accords with the precautionary principle and allows for robust assessment of the potential for adverse effects to arise on the integrity of the international / European designated sites.

5.138. The model used by PBA for assessment purposes includes vehicle emissions factors from the Emissions Factors Toolkit (EFT). The EFT is published by DEFRA and the Devolved Administrations. It allows for the calculation of road vehicle pollutant emission rates for NOx (amongst other pollutants) for a specified year, road type, vehicle speed and fleet composition. The EFT is updated periodically to account for updates in available data, including emission factors.

5.139. The current version of the EFT (version 8.0.1) was released in December 2017 with the emission factors for NOx taken from the European Environment Agency COPERT 5 emission calculation tool. The EFT can be used to predict future year emissions based on assumptions on the change to the fleet composition. However, recent evidence has shown that vehicle emissions of NOx have not been reducing in line with these projections.

5.140. In order to take account of uncertainties relating to future year vehicle emissions, the assessment has been undertaken utilising 2021 emission factors and background concentrations combined with traffic data from 2029 to predict impacts within the 2022 assessment year, which is considered to be a conservative assumption of emissions in the future. Further justification of this approach is outlined in Technical Appendix 12.3 of the ES.

5.141. The relevant critical loads associated with each of the international / European designated sites which were utilised in the assessment are outlined in Table 12.2 of the ES Chapter and replicated in Table 6 below. These figures have been used having regard to information available on APIS, the Supplementary Advice to the Conservation Objectives for the European sites, and also the habitats present within 200 metres of the strategic road network (see step 3 above).

Pollutant	Critical Load / Level	Background Deposition	Associated Habitat / Feature
Medway Estuary and Marshes SPA / Ramsar site			
Nitrogen Deposition	20 – 30 kgN / ha / yr	13.21 kgN / ha / yr	Saltmarsh
Acid Deposition	N / A		
Swale SPA / Ramsar site			
Nitrogen Deposition	15 – 30kgN / ha / yr	14.2 kgN / ha / yr	Rich Fens
Acid Deposition	N / A		
North Downs Woodlands SAC			
Nitrogen Deposition	5 – 15 kgN / ha / yr	25.87 kgN / ha / yr	Coniferous Woodland
Acid Deposition	0.142 keq / ha / yr	1.85 keq / ha / yr	Coniferous Woodland

Table 6: Critical Loads for the European designated sites

5.142. With regards to NOx, as outlined on APIS the critical level for all habitats is set at 30 µg / m3 (annual mean) and 75 µg / m3 (24-hour mean).

5.143. The detailed results of the dispersion modelling are presented in Technical Appendix 12.7 of the ES and are discussed in detail in paragraphs 12.162 to 12.181 inclusive of the ES Chapter. Consideration is afforded to each site in turn below.

Medway Estuary and Marshes SPA / Ramsar Site

5.144. With regards to baseline NOx levels, at a number of locations within the Medway Estuary and Marshes SPA / Ramsar site the critical level is already exceeded. Indeed, this is identified to be the case at three of the five modelled transects (E3, E4 and E5), in terms of annual mean NOx levels. In the case of transect E3, the critical load is exceeded for over 100 metres from the nearest point to the A289 Gads Hill, up to 60 metres from E4 and also at E5.

5.145. The figures presented in Technical Appendix 12.7 of the ES demonstrate that the predicted concentrations of NOx show a decline in concentrations between the 2017 and 2022 baseline scenarios in all locations, which is due to vehicle emissions in future years as a result of improvements in vehicle technology.

5.146. Furthermore, comparing the 2022 assessment including the proposed development, in each case the predicted concentrations will still be lower than the current (2017) baseline. However, as noted in paragraph 12.165, the change in concentrations arising from the development proposals are over 1% of the identified critical load when considered alone at two locations (E3 and E4). As such, in respect of NOx, on a precautionary basis further consideration is required at the Appropriate Assessment stage (see below).

5.147. In relation to nitrogen deposition, the predicted deposition rates under all three assessment scenarios are assessed to be below the critical load. Furthermore, the change in nitrogen deposition arising as a result of the emissions from the proposed development are less than 1% of the critical load. On this basis, it is considered that there is no potential for effects arising either alone or in combination as a result of nitrogen deposition on Medway Estuary and Marshes SPA / Ramsar site.

Swale SPA / Ramsar site

5.148. With regards to baseline NOx levels (annual and 24-hour), at location L1 the critical level is already exceeded up to 20 metres either side of the road (annual) and by up to 40 metres either side of the road (24-hour). The critical levels are not exceeded at location L2.

5.149. In addition, the nitrogen deposition rates exceed the lower level of the critical load at the majority of receptors along the L1 and L2 transects at present.

5.150. However, as the figures presented in Technical Appendix 12.7 demonstrate, detailed modelling of potential effects arising from the

development proposals does not identify any change in either NOx concentrations or nitrogen deposition rates. On this basis, it is considered that effects are *de minimis* and there is no potential for an effect either alone or in combination on Swale SPA / Ramsar site as a result of air quality impacts from road traffic emissions.

North Downs Woodlands SAC

5.151. With regards to baseline NOx levels (both annual and 24-hour), modelling has identified that critical levels are already exceeded at transect L3 (A249), but not at transect L4 (A229).

5.152. In terms of both nitrogen and acid deposition, the existing baseline rates exceed the critical loads at all receptors along both transects L3 and L4; indeed, to a significant degree.

5.153. However, again as demonstrated in Technical Appendix 12.7 of the ES, detailed modelling of the proposed development does not identify any change to either NOx, nitrogen deposition or acid deposition in respect of either of the modelled transects. On this basis, it is considered that effects are *de minimis* and there is no potential for an effect either alone or in combination on North Downs Woodlands SAC as a result of air quality impacts from road traffic emissions.

<u>Summary</u>

5.154. In summary, having undertaken detailed assessment work in respect of air quality matters, it is concluded that the development proposals are not likely to have to a significant effect on the integrity of any international / European designated sites situated in close proximity to the strategic road network, either considered alone or in combination with other plans or projects.

5.155. Further consideration (in the form of Appropriate Assessment) is however required in respect of NOx at Medway Estuary and Marshes SPA / Ramsar site, which is presented in Section 6 below.

6. MITIGATION / AVOIDANCE MEASURES AND APPROPRIATE ASSESSMENT

6.1. As outlined above, it is concluded that the development proposals would not be likely to have a significant effect on the European / international designated sites through lighting, noise, hydrological impacts or physical damage and degradation to habitats, either when considered alone or in combination with other plans or projects. No specific avoidance or mitigation measures are therefore required in this regard.

6.2. However, in the absence of avoidance or mitigation measures there remains potential for the development proposals to lead to a significant effect on Medway Estuary and Marshes SPA / Ramsar site via potential disturbance effects (and, on a precautionary basis, to contribute towards such an effect at the other coastal international / European designated sites).

6.3. Further detailed assessment is also required in respect of NOx associated with road traffic emissions, specifically in relation to Medway Estuary and Marshes SPA / Ramsar site.

6.4. In the first instance, further consideration has been afforded to the air quality issues to ascertain whether the development proposals are likely to lead to an adverse effect upon the integrity of the international / European sites. Subsequently, consideration is afforded to the package of avoidance and mitigation measures which are proposed as part of the new development.

Further Air Quality Assessment

6.5. As noted above, in respect of NOx, detailed dispersion modelling has identified that an increase in over 1% of the critical level is anticipated to arise at two locations at Medway Estuary and Marshes SPA / Ramsar site (E3 and E4) as a result of the development proposals. On this basis, further assessment was considered necessary.

6.6. Section 5 of the Internal Note produced by Natural England provides further guidance with regards to undertaking an Appropriate Assessment in respect of road traffic emissions and air quality issues. Particular regard has therefore been given to this section of the document.

6.7. It is important to note the Natural England guidance states that:

"*At appropriate assessment stage, Natural England recommends that this same 1% threshold is <u>not</u> used as a means of determining whether there is an adverse effect on site integrity from a road traffic project. Other factors are relevant which may mean that a plan or project that exceeds the 1% screening threshold can still demonstrate no adverse effect on site integrity through an appropriate assessment*"

6.8. On this basis, it is important to reiterate that whilst the development proposals breach this threshold, this simply serves to indicate that further consideration is required, and does not in and of itself indicate that the proposals would result in an adverse effect on the integrity of Medway Estuary and Marshes SPA / Ramsar site.

6.9. In the Internal Guidance Note, Natural England subsequently list a number of factors which are recommended for further consideration in an appropriate assessment. These have been considered in turn, as outlined in the paragraphs below.

6.10. As outlined in Section 5 of this assessment, regard has been afforded to the extent to which sensitive qualifying features of Medway Estuary and Marshes SPA / Ramsar site are located in close proximity to the road network, and could therefore be exposed to an increase in emissions arising from road traffic movements. However, noting that potential effects in relation to NOx only have been identified, these have been specifically considered further.

6.11. Effects from airborne NOx are most likely on habitat/species which are permanently exposed to the air. Habitats which are underwater, or if exposed for periods of time, are regularly flushed by water / subject to tidal influences, are likely to be affected more by water based nutrient loadings arising from other sources (e.g. from agricultural run-off and other discharges into the Medway Estuary).

6.12. As outlined above, the only features which are likely to be exposed to emissions at locations E3 and E4 are intertidal habitats which are covered by the tide with different regularities depending on the tidal reach (mudflats and saltmarsh). Whilst full inundation of all saltmarshes is usually restricted to high tides, it is clear that the majority of the habitats located within 200 metres of Lower Rainham Road and Gads Hill / Danes Hill, comprise mudflats. As such, the habitats concerned will be covered either daily by most tides, or regularly each month on spring tides.

6.13. For these reasons, notwithstanding the findings of the assessment, it is considered that, the predicted increase in NOx arising from the proposed development is unlikely to pose a credible risk to habitats within the European designated site, and there is unlikely to be an adverse effect on the integrity of the site arising as a result.

6.14. Detailed consideration has also been afforded to the Conservation Objectives of the European site. As Natural England's guidance makes clear, the key question is, in view of the objectives, can it be ascertained that, should the plan or project go ahead, there will be no adverse effect from it on the site's integrity so that the site's conservation objectives will not be undermined.

6.15. As the site represents an SPA, the attribute most likely to be undermined in this case would be '*the structure and function of the habitats of the qualifying species*'. For the reasons outlined above, it is considered that the predicted increase in NOx levels would not pose a risk to habitats associated with the designated site, and certainly not to the extent that they could lead to any change to the structure and function of those habitats

supporting qualifying bird species, that could adversely affect the integrity of the SPA.

6.16. Furthermore, in relation to each of the qualifying features associated with the SPA, it is noted in the Supplementary Advice to the Conservation Objectives that "*there is evidence from survey or monitoring that shows the feature to be in good condition and/or currently un-impacted by anthropogenic activities*".

6.17. It is important to note that as outlined above, at these specific locations the critical level for NOx is already exceeded. It is therefore clear that there is no evidence to indicate that air quality effects are currently resulting in adverse effects to the integrity of the site, despite the fact that the critical level of NOx is currently above the identified threshold.

6.18. Importantly, the air quality assessment shows that under both the 'development' and 'no development' scenarios, NOx levels are predicted to decrease below existing levels, in line with the ongoing trend towards improving air quality. On this basis, notwithstanding that NOx is not considered to be a credible risk to the European designated site for the reasons outlined above, the development proposals would not impede this downward 'real world' trend of declining emissions between the baseline year and the occupation of the development.

6.19. Notwithstanding the above, in accordance with Air Quality Planning Guidance from Medway Council a package of mitigation measures is proposed, as an integral part of the development proposals. Further consideration in this regard is provided in the Air Quality Chapter of the ES. Whilst the measures summarised in the ES are not considered necessary as specific mitigation for effects arising on the European designated site, they will no doubt serve to further reduce the potential for any air quality effects both to ecological and human receptors.

6.20. On this basis, in light of the detailed assessment presented above, it is Ecology Solutions view that the development proposals are not likely to lead to an adverse effect on the integrity of Medway Estuary and Marshes SPA / Ramsar site as a result of air quality impacts.

Recreational Disturbance

6.21. As outlined in Section 5 above, potential disturbance effects to qualifying bird species arising from an increase in informal recreation at Medway Estuary and Marshes SPA / Ramsar site (and other coastal sites) have been identified.

6.22. To address these effects, a package of avoidance and mitigation measures are proposed. This comprises three key elements: firstly, provision of an appropriate financial contribution towards management and monitoring at the SPA / Ramsar sites, in accordance with the North Kent Coast SAMM; secondly, the provision of enhancements to on-site public open space to maximise opportunities for informal recreation including dog walking; and thirdly engagement with Medway Council to provide further contributions towards off-site recreational opportunities in the local area. These three measures are discussed in detail below.

6.23. As outlined above in Section 2, in line with the *People over Wind* judgement, relevant avoidance and mitigation measures can be considered at the Appropriate Assessment stage.

Financial Contribution towards Strategic Mitigation

6.24. The proposed development will provide an appropriate financial contribution towards the Thames, Medway and Swale Estuaries SAMMS project. As outlined in Section 2 above, this will fund the delivery of strategic mitigation and visitor management at the North Kent Coast sites, including the Medway Estuary.

6.25. In accordance with the SAMMS, it is understood that the contribution of £245.56 per dwelling shall be made towards the strategic mitigation strategy and will be secured by an appropriate legal agreement (Section 106 or Unilateral Undertaking).

6.26. It is noted that explicit reference is made to Riverside Country Park (which lies to the north of the application site and forms the southern boundary of the Medway Estuary) in the SAMMS report produced by Footprint Ecology. Whilst it is important to bear in mind that the key focus is to avoid and mitigate for potential recreational effects on a 'net' basis (considering both existing and new pressures), it is therefore anticipated that funding provided as part of the development proposals could be used to deliver enhancements at this key location.

Enhancements to On-Site Open Space

6.27. Given the nature of the coast, it is widely recognised that the provision of alternative informal open space has a reduced role to play in terms of mitigation for potential effects arising from informal recreation (as it is not possible in most circumstances to 'replicate' the same experience, unlike provision of open space for European designated sites supporting heathland habitats, for instance).

6.28. On this basis, provision of a financial contribution is considered to be, in relative terms, of greater weight than delivery of alternative areas for informal recreation as part of an avoidance and mitigation strategy. However, the provision of attractive open space does have a role to play in mitigating for a potential increase in activity from new (and indeed existing) residents. As such, detailed consideration has been afforded to ensuring that the development proposals provide on-site opportunities for informal recreation.

6.29. As illustrated on the Green and Blue Infrastructure Parameter Plan (included at Appendix 1), a network of informal public open space is proposed throughout the application site. The proposed landscape arrangement incorporates existing natural hedgerows in addition to proposed new planting, including grassland, trees, scrub and wetland features associated with SuDS. As illustrated on the Indicative Recreation Plan, a copy of which is included at Appendix 33, areas of open space will be distributed throughout the site, with more extensive blocks of open space in the central part of the site and corridors of open space extending

across and around the site. This will ensure that all new dwellings will be located in close proximity to areas of open space, enabling residents to easily access the wider network.

6.30. As illustrated on the Indicative Recreation Plan, the emerging development proposals would include four dog walking routes measuring 1.9km in the western area, 1.4km in the north-west area, 1.5km in the south-west area and 1.2km in the southern area of the site. Residents would be able to link these together to form longer routes, if desired, or alternatively shorten them by passing through the proposed development.

6.31. These routes also provide the opportunities for residents for walking or running trails. The proposed routes, which could be way-marked and promoted to new residents, are within different locations throughout the site to ensure the spaces are convenient and readily accessible to encourage as much use by the residents as possible (providing opportunities 'on the doorstep' for regular activities such as dog walking). During the darker winter months, the interior roads are proposed to include street lighting, which facilitates dog walking and exercise when daylight hours are shorter.

6.32. Further to the provision of the dog walking routes, the development proposals also incorporate a number of fenced 'off-lead areas' which are also dispersed throughout the site. These 'off-lead' areas will allow residents to let their dogs run free in a secure area, with dog bins proposed in strategic locations to conserve the attractiveness of these areas for those without dogs.

6.33. It is also noted that the southern part of the site is higher, and slopes downward towards Lower Rainham Road. Areas of open space in this part of the site will allow views of the coast and Country Park to be enjoyed by residents using these spaces, delivering a similar type of visitor 'experience' to walks closer to the estuary.

6.34. In order to avoid providing a direct link which new residents could use to easily access the European designated site on foot, the development proposals will not provide enhanced pedestrian linkage between the application site and the Country Park towards the north. In addition, there are no general parking areas proposed within the site, aside from those within the care and village centre, both of which will be subject to parking and management controls. As such, the development would not provide parking for individuals to park and then access the Country Park and European designated sites beyond.

6.35. Although the proposal is an outline application, it is considered that the detailed design principles / matters as outlined above can be controlled by a suitably worded condition or within a S106 agreement, as required.

6.36. As stated above, the intention is to create a network of areas of open space which offers opportunities for recreation (including dog walking) which will be easily accessible to the new residents associated with the development proposals. It is accepted that the proposals will not (and indeed cannot) deliver an experience directly equivalent to that found at the coast, and some new residents may visit the SPA / Ramsar site on occasion. It is expected however that the open space provision will reduce the overall

number of potential visits to the SPA / Ramsar site (and SSSI) by offering an easily accessible area for regular (e.g. daily / routine) dog walks by new residents, and that the delivery of additional mitigation measures (as outlined above and below) would address the potential for any additional effect.

6.37. It is also noted that the open space provision would provide a new facility for existing local residents, thereby potentially reducing the number of visits to the SPA / Ramsar site by existing residents. The above measures are commended as representing a suitable measure which will alleviate both existing and potential increased recreation at the SPA / Ramsar site.

Further Off-site Measures

6.38. In addition to the measures above (financial contribution towards SAMMS and delivery of on-site open space), in order to ensure that there is no potential for any adverse effects to arise discussions will be held with Medway Council in relation to the delivery of further off-site measures. Potential measures that will be explored include additional wardening at Riverside Country Park or other specific mitigation for effects arising at the SPA / Ramsar site, and delivery of other areas of open space in the local area to provide alternative areas for informal recreation.

6.39. It is envisaged that this would be delivered under a separate financial contribution, secured via a Section 106 legal agreement, as required. The details of additional bespoke measures would be agreed with both Medway Council and Natural England.

Summary

6.40. Taking into account the avoidance and mitigation measures outlined above, at the Appropriate Assessment stage it is considered that the development proposals will avoid any potential significant adverse effects when the project is considered alone or in combination. At worst, the plan / project would give rise to effects which would be classed as de minimis.

6.41. As noted above, the avoidance / mitigation strategy outlined above corresponds with the North Kent Coast SAMMS.

6.42. Discussions have also been held recently with Natural England in line with their Discretionary Advice Service (DAS). The approach towards avoidance and mitigation has specifically sought to take on board the points raised.

Specific consideration of the In-Combination Test

6.43. It is considered by Ecology Solutions that the potential effects identified in relation to the development proposals will be avoided or fully mitigated through the implementation of the measures described above, such that, at the Appropriate Assessment stage, it may be concluded that there would be no significant residual adverse effects on the SPA / Ramsar site (or SSSI) when the plan / project is considered alone. In this light, in combination effects would not be possible.

6.44. Since development proposals are scrutinised so carefully by Competent Authorities and the relevant Statutory Authorities in light of the Habitats Regulations, recent case law and guidance, it is not likely that another plan / project would come forward without sufficient mitigation or avoidance measures to offset any perceived deleterious effects on a European designated site.

6.45. Along with other local planning authorities in close proximity to the North Kent Coast European sites, and as outlined above, Medway Council has adopted a strategic level mitigation / avoidance tool in relation to new residential development, which necessarily takes full account of potential in combination effects on the European designated site. As such, all plans and projects which come forward in the local area should comply with the strategic mitigation measures outlined in the SPD designed to avoid adverse effects on the European sites, such that a lawful consent can be granted.

6.46. On the basis that all relevant development proposals will provide appropriate mitigation / avoidance measures, in line with a strategic package of measures (in relation to potential in combination effects), as agreed with Natural England, it is therefore concluded that there would not be any potential significant in-combination effects on the SPA / Ramsar site.

Assessment Method for Determining Effects on Site Integrity

6.47. Judgements of whether the integrity of the European sites are likely to be adversely and significantly affected should be made in relation to the features for which the European site was designated, their formal Conservation Objectives, and set against the definition of integrity.

6.48. As referenced in Section 2 above, English Nature (now Natural England) produced internal guidance on determining site integrity (English Nature, 2004), which includes "*a simple, pragmatic checklist for assessing the likely effect on integrity*". This asks the competent authority to pose a series of five questions, as follows:

a) That the area of Annex I habitats (or composite features) will not be reduced?

b) That there will be no direct effects on the populations of the species for which the site was designated or classified?

c) That there will be no indirect effects on the populations of the species for which the site was designated or classified due to loss or degradation of their habitat (quantity/quality)?

d) That there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?

e) That there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?

6.49. The guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there is not an adverse effect on the integrity. If the answer is 'No' to one or more of the questions, then further site-specific factors need to be considered in order to reach a decision.

6.50. These site-specific factors are:

- Scale of impact;
- Long-term effects and sustainability;
- Duration of impact and recovery/reversibility;
- Dynamic systems;
- Conflicting feature requirements;
- Off-site impacts; and
- Uncertainty in cause and effect relationships and a precautionary approach.

6.51. This process has been used to assess the impact of the potential effects on the integrity of the international / European designated sites.

6.52. The effects of the proposed development, together with avoidance and mitigation measures, are considered in relation to Natural England's site integrity checklist in Table 7 below:

	Qualifying Interest Feature
Medway Estuary and Marshes SPA	Populations of European importance of Annex I species: Avocet (breeding and wintering), Little Tern (breeding), Common Tern (breeding), Bewick's Swan (wintering) Populations of European importance of migratory species: Pintail, Shoveler, Teal, Wigeon, Turnstone, Dark-bellied Brent Goose, Dunlin, Knot, Ringed Plover, Oystercatcher, Black-tailed Godwit, Curlew, Grey Plover, Shelduck, Greenshank, Redshank Regularly supports at least 20,000 waterfowl
Medway Estuary and Marshes Ramsar site	Ramsar criterion 2: Supports rare and notable plants and invertebrates Ramsar criterion 5: Assemblage of international significance Ramsar criterion 6: Populations of Grey Plover, Redshank, Dark-bellied Brent Goose, Shelduck, Pintail, Ringed Plover, Knot, Dunlin
Has the Information for Appropriate Assessment shown that:-	
1) the area of Annex I habitats (or composite features) will not be reduced?	**Yes**. The proposed development will result in no losses through land take to any European / international site. Qualifying habitats are located away from public access due to estuarine nature of the site and no effects would arise as a result of the development proposals.
2) there will be no direct effect on the population of the species for which the site was designated or classified?	**Yes**. Avoidance and mitigation put forward in respect of potential for disturbance through increased recreation on qualifying bird species of the SPA / Ramsar site through delivery of bespoke package of measures.

3) there will be no indirect effects on the populations of species for which the site was designated or classified due to loss or degradation of their habitat (quantity / quality)?	**Yes**. The proposed development will have no significant adverse effects on the designating features of any of the European / international sites, either alone or in combination. The application site does not comprise or represent supporting / functionally linked habitat for qualifying features of the site.
4) there will be no changes to the composition of the habitats for which the site was designated (e.g. reduction in species structure, abundance or diversity that comprises the habitat over time)?	**Yes**. The proposed development will have no significant adverse effects on the designating features of any of the European / international sites, either alone or in combination.
5) that there will be no interruption or degradation of the physical, chemical or biological processes that support habitats and species for which the site was designated or classified?	**Yes**. The proposed development will have no significant adverse effects on the designating features of any of the European / international sites, either alone or in combination. Avoidance and mitigation put forward in respect of potential for disturbance through increased recreation on qualifying bird species of the SPA / Ramsar site through delivery of a bespoke package of measures.

Table 7: Consideration of Natural England's integrity checklist

6.53. As stated previously, the Natural England guidance suggests that if the answer to all of these questions is 'Yes' then it is reasonable to conclude that there will not be an adverse effect on integrity. It follows that in this case there is no need to consider any further site-specific factors in order to reach a decision.

6.54. As the project alone or in combination would not contribute to an overall significant effect that may have an adverse effect on the integrity of any of these European / international designated sites, the proposed development would by definition be acceptable, subject to securing the mitigation and avoidance measures proposed.

6.55. It is therefore concluded that the development proposals would by definition be acceptable under the tests of the Habitats Regulations and therefore in those terms it is considered that the Competent Authority could legally and safely grant consent for the proposed plan / project.

Summary Conclusion of Appropriate Assessment

6.56. Having considered all of the potential significant effects that could arise from the development proposals, in light of the avoidance and mitigation measures which form an integral part of the development, Ecology Solutions conclude that the proposals would not be likely to give rise to a significant effect on the integrity of the Medway Estuary and Marshes SPA / Ramsar site (or indeed, any other international / European designated site)

when the development proposals are considered, either alone or in combination with other plans or projects. No additional adverse impacts have been identified in relation to Medway Estuary and Marshes SSSI and no additional mitigation would be required.

7. SUMMARY AND CONCLUSIONS

7.1. As outlined in this Information for Habitats Regulations Assessment report, produced by Ecology Solutions, a detailed assessment of the implications of the development proposals on international / European designated sites has been undertaken, in view of the European site's Conservation Objectives.

7.2. The findings of this work are set out within this document such that the Competent Authority (Medway Council), in exercising their duties under the Habitats Regulations, has all the necessary information before them in considering the development proposals.

7.3. Assessment under Regulation 63 of the Habitats Regulations is required in this instance, since the Appeal Site lies within proximity to a number of international / European designated sites, including Medway Estuary and Marshes SPA / Ramsar site in addition to other sites situated in close proximity to the strategic road network.

7.4. All relevant potential pathways for significant effects to arise on the European / international designated sites as a result of the development proposals have been fully examined. Where necessary, mitigation / avoidance measures, which are integral to the project, have been described. This assessment has been undertaken with due regard had to relevant legislation, case law and planning decisions, guidance and information provided by Natural England.

7.5. Having considered all of the potential significant effects that could arise from the development proposals, in light of the avoidance and mitigation measures, Ecology Solutions conclude that the proposals would not result in any adverse effects on the integrity on any European / international designated sites (in view of their conservation objectives), when the development proposals are considered alone or in combination with other plans or projects.

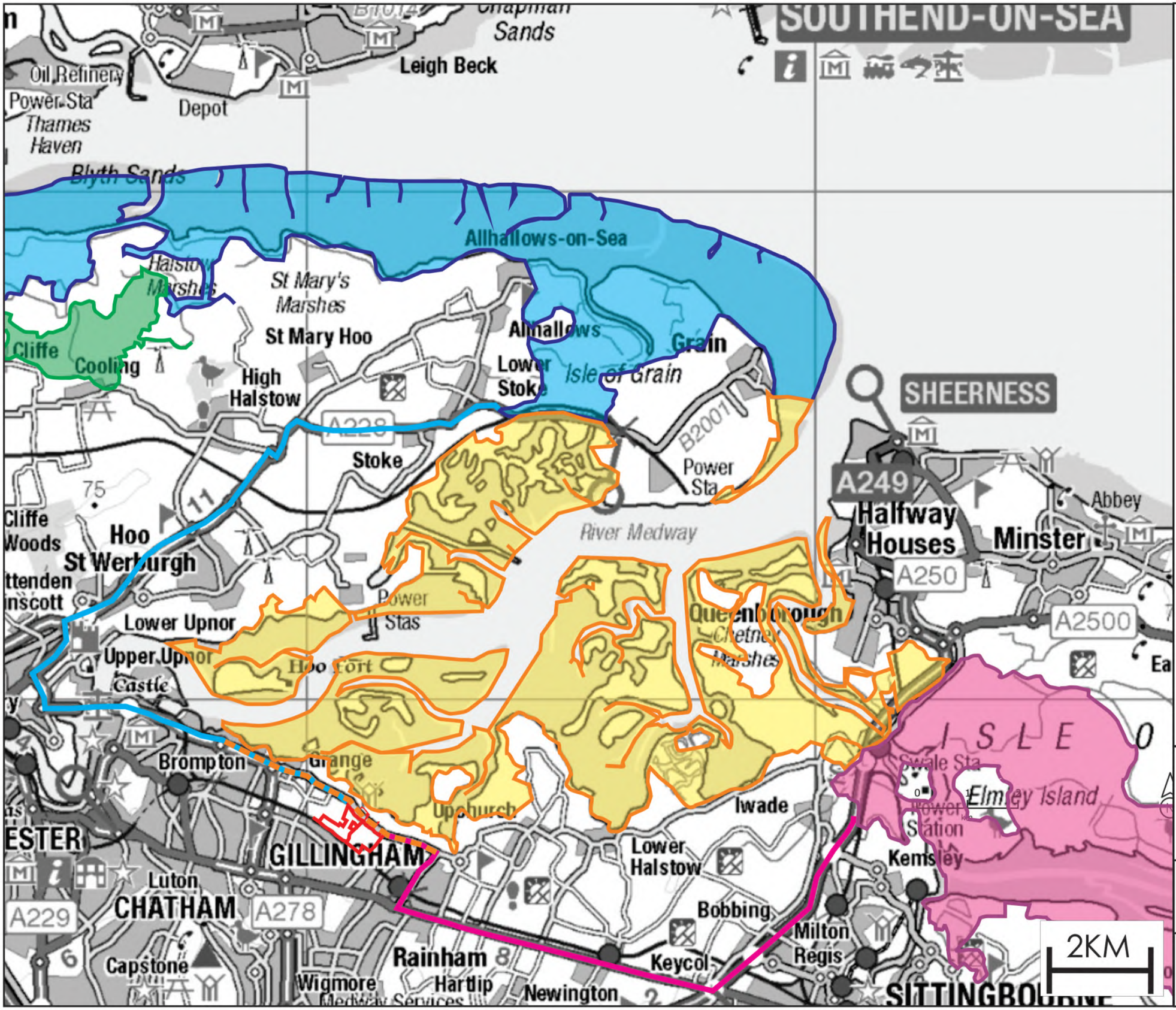
7.6. As such, the development proposals would, by definition, be acceptable subject to securing the mitigation and avoidance measures proposed. In those terms the competent authority could legally and safely grant consent for the proposed plan/project.

PLANS AND APPENDICES

PLANS

PLAN ECO1

Application Site Location in relation to International / European Designated Sites (North)



KEY:

- APPLICATION SITE LOCATION
- MEDWAY ESTUARY & MARSHES SPA / RAMSAR SITE
- THAMES ESTUARY & MARSHES SPA / RAMSAR SITE
- THAMES ESTUARY & MARSHES RAMSAR SITE
- SWALE SPA / RAMSAR SITE
- SHORTEST DISTANCE BY ROAD TO MEDWAY ESTUARY & MARSHES SPA / RAMSAR SITE
- SHORTEST DISTANCE BY ROAD TO THAMES ESTUARY & MARSHES SPA
- SHORTEST DISTANCE BY ROAD TO SWALE SPA / RAMSAR SITE

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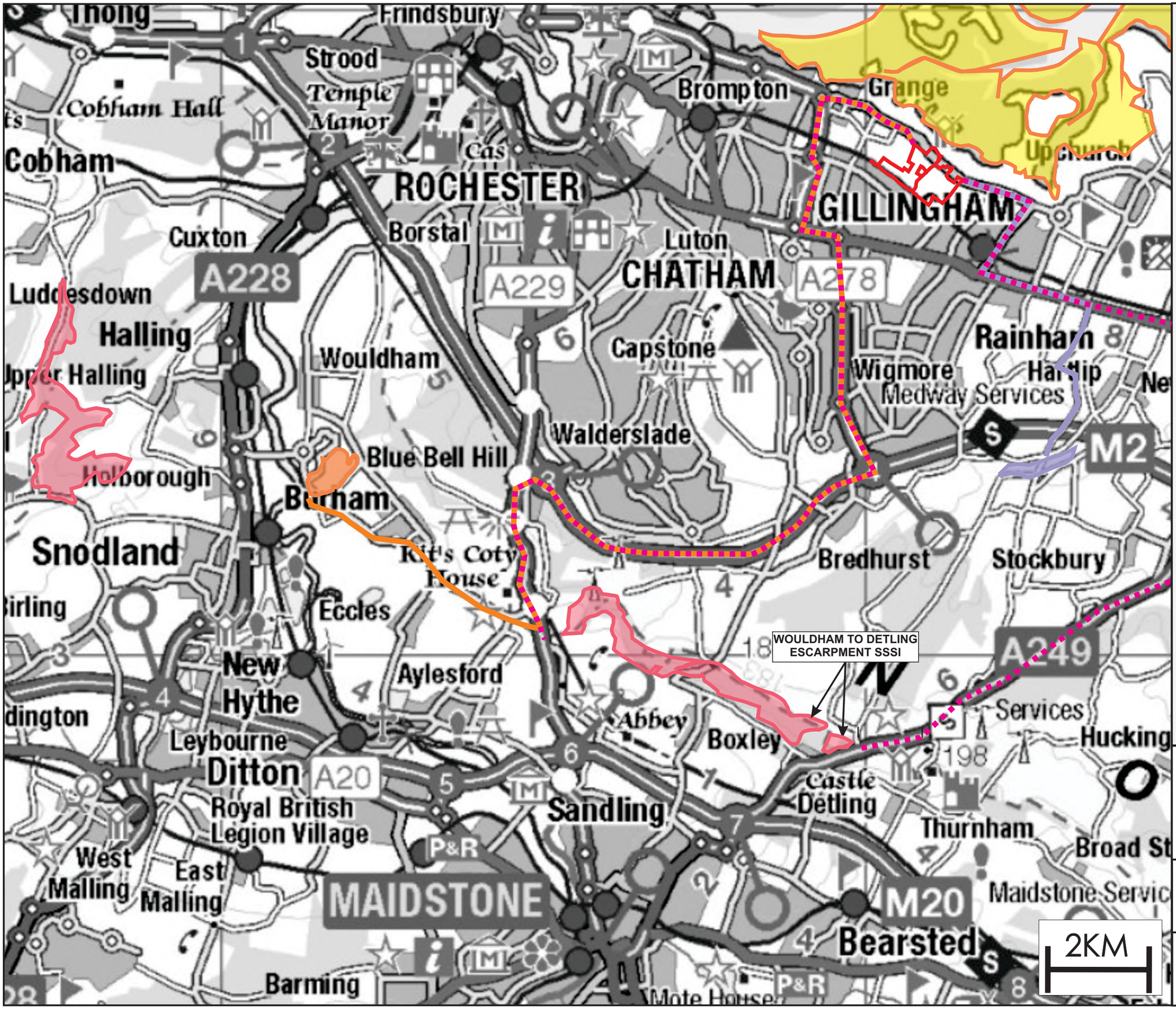
8252. LAND AT PUMP LANE AND BLOORS FARM, LOWER RAINHAM, KENT

PLAN ECO1: APPLICATION SITE IN RELATION TO INTERNATIONAL/ EUROPEAN DESIGNATED SITES (NORTH)

PLAN ECO2

Application Site Location in relation to International / European Designated Sites (South)



KEY:

- APPLICATION SITE LOCATION
- MEDWAY ESTUARY & MARSHES SPA / RAMSAR SITE
- QUEENDOWN WARREN SAC
- NORTH DOWNS WOODLANDS SAC
- PETER'S PIT SAC
- SHORTEST DISTANCE BY ROAD TO QUEENDOWN WARREN SAC
- SHORTEST DISTANCE BY ROAD TO NORTH DOWNS WOODLAND SAC
- SHORTEST DISTANCE BY ROAD TO PETER'S PIT SAC

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8252. LAND AT PUMP LANE AND BLOORS FARM, LOWER RAINHAM, KENT

PLAN ECO2: APPLICATION SITE IN RELATION TO INTERNATIONAL/ EUROPEAN DESIGNATED SITES (SOUTH)

APPENDICES

APPENDIX 1

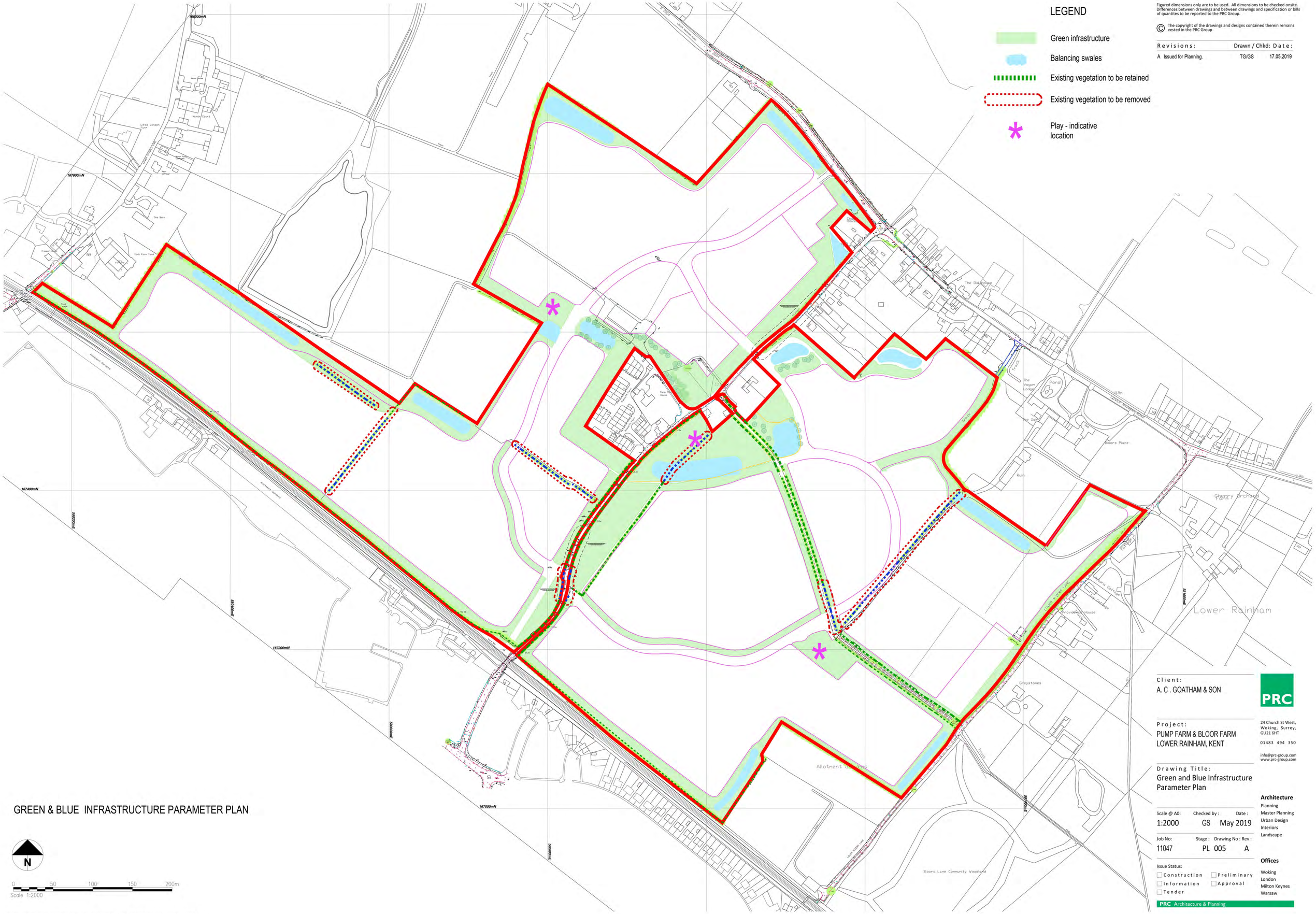
Green and Blue Infrastructure Parameter Plan (Drawing Ref. 11047 005 Rev A) (PRC Architects)

Figured dimensions only are to be used. All dimensions to be checked onsite. Differences between drawings and between drawings and specification or bills of quantites to be reported to the PRC Group.

Revisions:	Drawn / Chkd:	Date:
A Issued for Planning.	TG/GS	17.05.2019

LEGEND

- Green infrastructure
- Balancing swales
- Existing vegetation to be retained
- Existing vegetation to be removed
- Play - indicative location



GREEN & BLUE INFRASTRUCTURE PARAMETER PLAN

N

0 50 100 150 200m

Scale 1:2000

Client:
A. C . GOATHAM & SON

PRC

Project:
PUMP FARM & BLOOR FARM
LOWER RAINHAM, KENT

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Drawing Title:
Green and Blue Infrastructure Parameter Plan

Scale @ A0:	Checked by :	Date :
1:2000	GS	May 2019

Job No:	Stage :	Drawing No :	Rev :
11047	PL	005	A

Issue Status:
- ☐ Construction
- ☐ Preliminary
- ☐ Information
- ☐ Approval
- ☐ Tender

Architecture
Planning
Master Planning
Urban Design
Interiors
Landscape

Offices
Woking
London
Milton Keynes
Warsaw

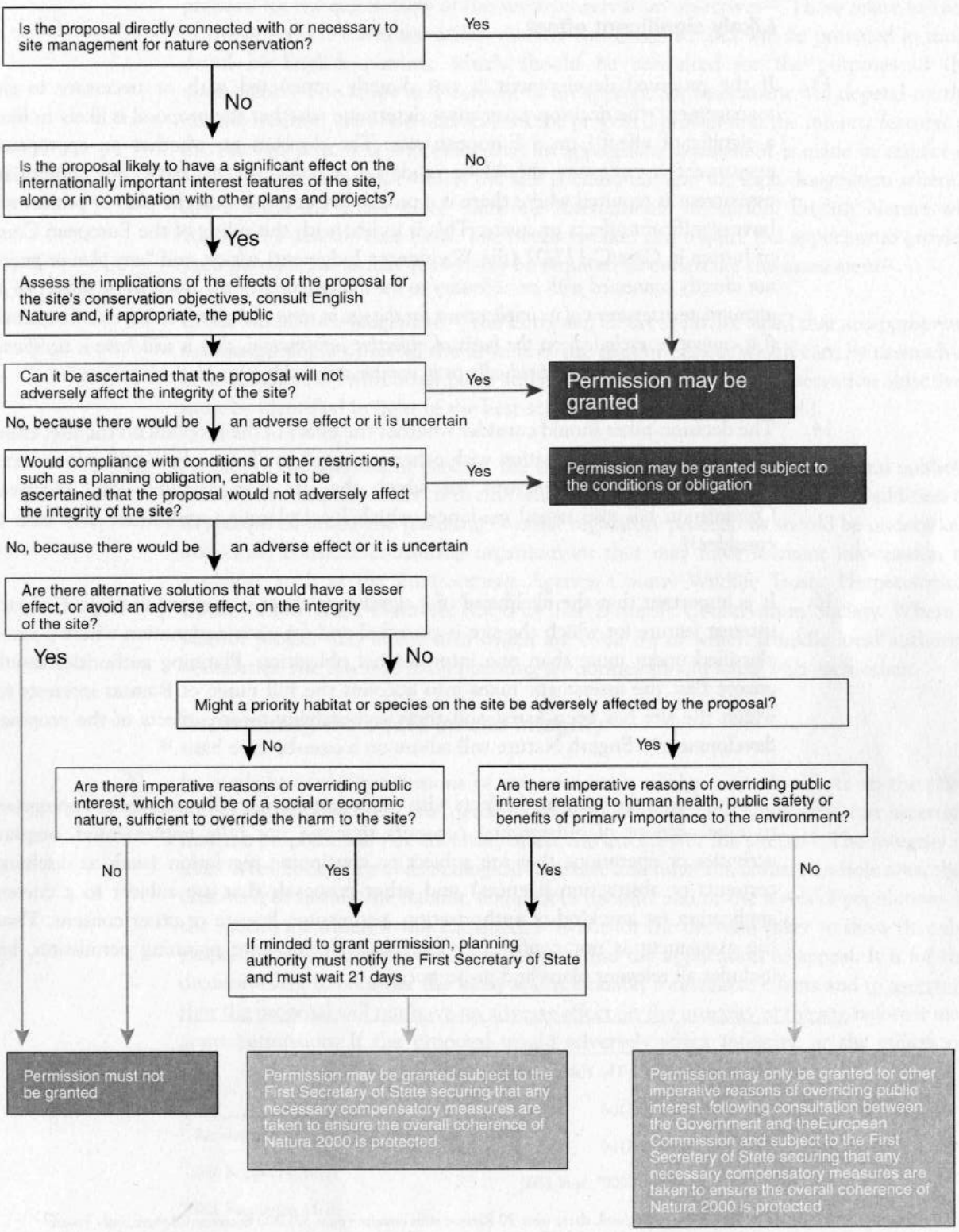
PRC Architecture & Planning

G:\11047 Lower Rainham Masterplan\2_Planning\Drg Sheets\11047 PL 005 - Green and Blue Infrastructure Parameter Plan.dwg

APPENDIX 2

Flow Diagram from ODPM / Defra Circular

Figure 1: Consideration of development proposals affecting Internationally Designated Nature Conservation Sites



APPENDIX 3

Medway Estuary and Marshes SPA Citation and Natura 2000 Standard Data Form

EC Directive 79/409 on the Conservation of Wild Birds: Special Protection Area.

Medway Estuary and Marshes (Kent)

The Medway Estuary and Marshes proposed Special Protection Area is a wetland of international importance comprising grazing marshes, inter-tidal flats and saltmarshes. The site provides breeding and wintering habitats for important assemblages of wetland bird species, particularly wildfowl and waders.

The boundaries of the proposed Special Protection Area are coincident with those of the Medway Estuary and Marshes Site of Special Scientific Interest (SSSI), apart from the exclusion of a section of inter-tidal mudflats in the west of the SSSI and other small areas of land in the north of the site at Abbey Court, Middle Stoke, and Grain. The proposed designation applies only to land above the Mean Low Water mark. The proposed Special Protection Area is an integral part of the larger Thames estuary and contributes to its overall regional significance for bird species, in a European context.

The Medway Estuary and Marshes qualifies under Article 4.1 of the EC Birds Directive by supporting, in summer, nationally important breeding populations of avocet *Recurvirostra avosetta* (28 pairs, 7% British breeding population) and little tern *Sterna albifrons* (24 pairs, 1% British breeding population) both Annex 1 species.

The site also qualifies under Article 4.1 by regularly supporting a nationally important wintering population of avocet. During the five year period 1986/87 to 1990/91, the average peak count was 70 birds, representing 7% of the British population.

The site also qualifies under Article 4.2 as a wetland of international importance by virtue of regularly supporting over 20,000 waterfowl, with an average peak count of 53,900 birds recorded in the five winter period 1986/87 to 1990/91. This total includes internationally or nationally important wintering populations of the following migratory waterfowl (figures given are average peak counts for the five winter period 1986/87 to 1990/91): 4,130 dark-bellied brent geese *Branta bernicla bernicla* (2.4% of the world population, 4.6% of the British wintering population), 5,900 shelduck *Tadorna tadorna* (2.3% of the North West European population, 7.9% of British), 980 pintail *Anas acuta* (1.4% of the North West European wintering, 3.9% British), 740 ringed plover *Charadrius hiaticula* (1.4% of the East Atlantic Flyway population, 3.2% of British), 4,810 grey plover *Pluvialis squatarola* (3.2% of EAF, 22.9% of British), 3,690 knot *Calidris canutus* (1.0% of EAF, 1.6% of British), 22,900 dunlin *Calidris alpina* (1.6% of the EAF, 5.3% of British), 4,180 redshank *Tringa totanus* (2.7% of the EAF, 5.5% of British), 250 great crested grebe *Podiceps cristatus* (2.5% of British), 5,200 wigeon *Anas penelope* (2.0% of British), 2,400 teal *Anas crecca* (2.4% of British), 150 shoveler *Anas clypeata* (1.7% of British), 3300 oystercatcher *Haematopus ostralegus* (1.1% of British), 390 black-tailed godwit *Limosa limosa* (7.9% of British), 1,900 curlew *Numenius arquata* (2.1% of British), 17 spotted redshank *Tringa*

erythropus (8.5% of British), 12 greenshank *Tringa nebularia* (3.0% of British) and 630 turnstone *Arenaria interpres* (1.4% of British).

The site also qualifies under Article 4.2 by virtue of regularly supporting, in summer, a diverse assemblage of breeding migratory waterfowl including oystercatcher *Haematopus ostralegus*, lapwing *Vanellus vanellus*, ringed plover *Charadrius hiaticula*, redshank *Tringa totanus*, shelduck *Tadorna tadorna*, mallard *Anas platyrhynchos*, teal *Anas penelope*, shoveler *Anas clypeata*, pochard *Aythya ferina* and common tern *Sterna hirundo*, the last an Annex 1 species. The site thus has an important role in maintaining the ranges of several species which have been affected by changes in their habitat elsewhere in Britain.

The site also qualifies under Article 4.2 by virtue of regularly supporting, in winter, a diverse assemblage of wintering species including red-throated diver, *Gavia stellata* great crested grebe *Podiceps cristatus*, cormorant *Phalacrocorax carbo*, shelduck *Tadorna tadorna*, mallard *Anas platyrhynchos*, teal *Anas crecca*, shoveler *Anas clypeata*, pochard *Aythya ferina*, oystercatcher *Haematopus ostralegus*, ringed plover *Charadrius hiaticula*, dunlin *Calidris alpina*, and redshank *Tringa totanus*; and also the following Annex 1 species: Bewick's swan *Cygnus columbianus bewickii*, hen harrier *Circus cyaneus*, merlin *Falco columbarius*, golden plover *Pluvialis apricaria*, short-eared owl *Asio flammeus* and kingfisher *Alcedo atthis*.

During severe winter weather elsewhere, the Medway Estuary and Marshes can assume even greater national and international importance as wildfowl and waders from many other areas arrive, attracted by the relatively mild climate, compared with continental European areas, and the abundant food resources available.

SPA Citation
March 1993
SJP

This citation / map relates to a site entered in the Register of European sites for Great Britain.
Register reference number UK001207
Date of registration 25 AUG 1999
Signed .....
on behalf of the Secretary of State for the Environment

NATURA 2000 – STANDARD DATA FORM

Special Protection Areas under the EC Birds Directive.

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Protection Areas (SPAs) in the United Kingdom is available from the SPA home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SPAs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9012031**
SITENAME	**Medway Estuary and Marshes**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
A	UK9012031

1.3 Site name

Medway Estuary and Marshes

1.4 First Compilation date	1.5 Update date
1993-12	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1993-12
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.677222222	51.40055556

2.2 Area [ha]:

4686.32

2.3 Marine area [%]

69.1

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ4	Kent

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Gl
B	A054	Anas acuta			w	697	697	i	P	G	B		C	
B	A056	Anas clypeata			w	76	76	i		G	C		C	
B	A052	Anas crecca			w	1824	1824	i		G	C		C	
B	A050	Anas penelope			w	4346	4346	i		G	C		C	
B	A053	Anas platyrhynchos			w	884	884	i		G	C		C	
B	A169	Arenaria interpres			w	561	561	i		G	C		C	
B	A059	Aythya ferina			w	4	4	i		G	C		C	
B	A675	Branta bernicla bernicla			w	3205	3205	i		G	B		C	
B	A672	Calidris alpina alpina			w	25936	25936	i		G	B		C	
B	A143	Calidris canutus			w	541	541	i		G	C		C	

B	A137	Charadrius hiaticula			w	768	768	i		G	B		C	
B	A082	Circus cyaneus			w				P	DD	C		C	
B	A037	Cygnus columbianus bewickii			w	16	16	i		G	C		B	
B	A098	Falco columbarius			w				P	DD	C		C	
B	A001	Gavia stellata			w				P	DD	C			
B	A130	Haematopus ostralegus			w	3672	3672	i		G	C		C	
B	A616	Limosa limosa islandica			w	957	957	i		G	B		C	
B	A160	Numenius arquata			w	1900	1900	i		G	C		C	
B	A017	Phalacrocorax carbo			w	231	231	i		G	C		C	
B	A141	Pluvialis squatarola			w	3406	3406	i		G	B		C	
B	A005	Podiceps cristatus			w	67	67	i		G	C		C	
B	A132	Recurvirostra avosetta			w	314	314	i		G	B		B	
B	A132	Recurvirostra avosetta			r	28	28	p		G	B		B	
B	A195	Sterna albifrons			r	28	28	p		G	C		C	
B	A193	Sterna hirundo			r	77	77	p		G	C		C	
B	A048	Tadorna tadorna			w	4465	4465	i		G	B		C	
B	A164	Tringa nebularia			w	10	10	i		G	B		C	
B	A162	Tringa totanus			w	3690	3690	i		G	B		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	BBA	Breeding bird assemblage												X
B	WATR	Waterfowl assemblage			65496	65496	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N03	15.0
N10	15.0
N07	1.0
N09	1.0
N06	1.0
N02	67.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: alluvium 2 Terrestrial: Geomorphology and landscape: floodplain,coastal 3 Marine Geology: shingle,mud 4 Marine: Geomorphology: intertidal sediments (including sandflat/mudflat),estuary

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) During the breeding season the area regularly supports: Recurvirostra avosetta (Western Europe/Western Mediterranean - breeding) 6.2% of the GB breeding population 5 year mean, 1988-1992 Sterna albifrons (Eastern Atlantic - breeding) 1.2% of the GB breeding population 5 year mean, 1991-1995 Sterna hirundo (Northern/Eastern Europe - breeding) 0.6% of the GB breeding population Count,as at 1994 Over winter the area regularly supports: Cygnus columbianus bewickii (Western Siberia/North-eastern & North-western Europe) 0.2% of the GB population 5 year peak mean 1991/92-1995/96 Recurvirostra avosetta (Western Europe/Western Mediterranean - breeding) 24.7% of the GB population 5 year peak mean 1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Anas acuta (North-western Europe) 1.2% of the population 5 year peak mean 1991/92-1995/96 Anas clypeata (North-western/Central Europe) 0.8% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Anas crecca (North-western Europe) 1.3% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Anas penelope (Western Siberia/North-western/North-eastern

Europe) 1.6% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Arenaria interpres (Western Palearctic - wintering) 0.9% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Branta bernicla bernicla (Western Siberia/Western Europe) 1.1% of the population 5 year peak mean 1991/92-1995/96 Calidris alpina alpina (Northern Siberia/Europe/Western Africa) 1.9% of the population 5 year peak mean 1991/92-1995/96 Calidris canutus (North-eastern Canada/Greenland/Iceland/North-western Europe) 0.2% of the population 5 year peak mean 1991/92-1995/96 Charadrius hiaticula (Europe/Northern Africa - wintering) 1.6% of the population 5 year peak mean 1991/92-1995/96 Haematopus ostralegus (Europe & Northern/Western Africa) 1% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Limosa limosa islandica (Iceland - breeding) 12.9% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Numenius arquata (Europe - breeding) 1.7% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Pluvialis squatarola (Eastern Atlantic - wintering) 2% of the population 5 year peak mean 1991/92-1995/96 Tadorna tadorna (North-western Europe) 1.5% of the population 5 year peak mean 1991/92-1995/96 Tringa nebularia (Europe/Western Africa) 2.6% of the population in Great Britain No count period specified. Tringa totanus (Eastern Atlantic - wintering) 2.1% of the population 5 year peak mean 1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 65496 waterfowl (5 year peak mean 1991/92-1995/96) Including: Gavia stellata , Podiceps cristatus , Phalacrocorax carbo , Cygnus columbianus bewickii , Branta bernicla bernicla , Tadorna tadorna , Anas penelope , Anas crecca , Anas platyrhynchos , Anas acuta , Anas clypeata , Aythya ferina , Haematopus ostralegus , Recurvirostra avosetta , Charadrius hiaticula , Pluvialis squatarola , Vanellus vanellus , Calidris canutus , Calidris alpina alpina , Limosa limosa islandica , Numenius arquata , Tringa totanus , Tringa nebularia , Arenaria interpres

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	M02		B
H	I01		B
H	M01		B
H	G01		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	D05		I
H	A02		I
H	A06		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/3212324
http://publications.naturalengland.org.uk/category/6490068894089216

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

☐	Yes
☐	No, but in preparation
X	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX 4

European Site Conservation Objectives for Medway Estuary and Marshes SPA

European Site Conservation Objectives for Medway Estuary and Marshes Special Protection Area Site Code: UK9012031

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A046a *Branta bernicla bernicla*; Dark-bellied brent goose (Non-breeding)
A048 *Tadorna tadorna*; Common shelduck (Non-breeding)
A054 *Anas acuta*; Northern pintail (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)
A137 *Charadrius hiaticula*; Ringed plover (Non-breeding)
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
A195 *Sterna albifrons*; Little tern (Breeding)
Waterbird assemblage
Breeding bird assemblage

This is a European Marine Site

This SPA is a part of the Swale & Medway European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

APPENDIX 5

Ramsar Information Sheet (RIS) for Medway Estuary and Marshes Ramsar Site

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY	
Designation date	Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 15 December 1993

3. Country:

UK (England)

4. Name of the Ramsar site:

Medway Estuary and Marshes

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

51 24 02 N 00 40 38 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Canterbury

On the north coast of Kent, within the Greater Thames estuary.

Administrative region: Kent

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 4696.74

Min.	-1
Max.	3
Mean	1

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

A complex of rain-fed, brackish, floodplain grazing marsh with ditches, and intertidal saltmarsh and mudflat. These habitats together support internationally important numbers of wintering waterfowl. Rare wetland birds breed in important numbers. The saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

2, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

The site supports a number of species of rare plants and animals. The site holds several nationally scarce plants, including sea barley *Hordeum marinum*, curved hard-grass *Parapholis incurva*, annual beard-grass *Polypogon monspeliensis*, Borrer's saltmarsh-grass *Puccinellia fasciculata*, slender hare`s-ear *Bupleurum tenuissimum*, sea clover *Trifolium squamosum*, saltmarsh goose-foot *Chenopodium chenopodioides*, golden samphire *Inula crithmoides*, perennial glasswort *Sarcocornia perennis* and one-flowered glasswort *Salicornia pusilla*. A total of at least twelve British Red Data

Book species of wetland invertebrates have been recorded on the site. These include a ground beetle *Polistichus connexus*, a fly *Cephalops perspicuus*, a dancefly *Poecilobothrus ducalis*, a fly *Anagnota collini*, a weevil *Baris scolopacea*, a water beetle *Berosus spinosus*, a beetle *Malachius vulneratus*, a rove beetle *Philonthus punctus*, the ground lackey moth *Malacosoma castrensis*, a horsefly *Atylotus latistriatuus*, a fly *Campsicnemus magius*, a solider beetle, *Cantharis fusca*, and a cranefly *Limonia danica*. A significant number of non-wetland British Red Data Book species also occur.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
47637 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:	
Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering	3103 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3)
Common redshank , *Tringa totanus totanus*,	3709 individuals, representing an average of 1.4% of the population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Dark-bellied brent goose, *Branta bernicla bernicla*,	2575 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
Common shelduck , *Tadorna tadorna*, NW Europe	2627 individuals, representing an average of 3.3% of the GB population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	1118 individuals, representing an average of 1.8% of the population (5 year peak mean 1998/9-2002/3)
Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	540 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	3021 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	8263 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species with peak counts in spring/autumn:	
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	721 individuals, representing an average of 2% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
Details of bird species occuring at levels of National importance are given in Section 22

15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	alluvium, mud, shingle
Geomorphology and landscape	coastal, floodplain, intertidal sediments (including sandflat/mudflat), estuary
Nutrient status	eutrophic
pH	circumneutral
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	no information
Water permanence	usually permanent, usually seasonal / intermittent
Summary of main climatic features	Annual averages (Greenwich, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/greenwich.html) Max. daily temperature: 14.8° C Min. daily temperature: 7.2° C Days of air frost: 29.1 Rainfall: 583.6 mm Hrs. of sunshine: 1461.0

General description of the Physical Features:

The Medway Estuary feeds into and lies on the south side of the outer Thames estuary. It forms a single tidal system with the Swale and joins the Thames estuary between the Isle of Grain and Sheerness. It has a complex arrangement of tidal channels, which drain around large islands of saltmarsh and peninsulas of grazing marsh. The mudflats are rich in invertebrates and also support beds of *Enteromorpha* and some eelgrass *Zostera* spp. Small shell beaches occur, particularly in the outer part of the estuary. Grazing marshes are present inside the sea-walls around the estuary. The complex and diverse mixes of coastal habitats support important numbers of waterbirds throughout the year.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Medway Estuary feeds into and lies on the south side of the outer Thames estuary. It forms a single tidal system with the Swale and joins the Thames estuary between the Isle of Grain and

Sheerness. It has a complex arrangement of tidal channels, which drain around large islands of saltmarsh and peninsulas of grazing marsh.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces, Sediment trapping, Flood water storage / desynchronisation of flood peaks, Maintenance of water quality (removal of nutrients)

19. Wetland types:

Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	58.3
H	Salt marshes	16.8
4	Seasonally flooded agricultural land	13.8
Other	Other	9.3
M	Rivers / streams / creeks: permanent	1.2
Tp	Freshwater marshes / pools: permanent	0.4
J	Coastal brackish / saline lagoons	0.2
E	Sand / shingle shores (including dune systems)	0.02

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The intertidal flats are of fine, silty sediment. The saltmarsh shows a transition from pioneer communities containing *Zostera* to high saltmarsh dominated by *Atriplex portulacoides*. The grazing marsh grassland is mesotrophic and generally species-poor. It does, however, contain scattered rarities, mostly annuals characteristic of bare ground. Where the grassland is seasonally inundated and the marshes are brackish the plant communities are intermediate between those of mesotrophic grassland and those of saltmarsh. The grazing marsh ditches contain a range of flora of brackish and fresh water. The aquatic flora is a mosaic of successional stages resulting from periodic clearance of drainage channels. The dominant emergent plants are *Phragmites australis* and *Bolboschoenus maritimus*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

The site holds several nationally scarce plants, including: *Hordeum marinum, Parapholis incurva, Polypogon monspeliensis, Puccinellia fasciculata, Bupleurum tenuissimum, Trifolium squamosum, Chenopodium chenopodioides, Inula crithmoides, Sarcocornia perennis, Salicornia pusilla*

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Mediterranean gull , *Larus melanocephalus*, Europe	10 apparently occupied nests, representing an average of 9.2% of the GB population (Seabird 2000 Census)
Black-headed gull , *Larus ridibundus*, N & C Europe	7050 apparently occupied nests, representing an average of 5.5% of the GB population (Seabird 2000 Census)
Sandwich tern , *Sterna (Thalasseus) sandvicensis sandvicensis*, W Europe	333 apparently occupied nests, representing an average of 3.1% of the GB population (Seabird 2000 Census)
Common tern , *Sterna hirundo hirundo*, N & E Europe	228 apparently occupied nests, representing an average of 2.2% of the GB population (Seabird 2000 Census)
Little tern , *Sterna albifrons albifrons*, W Europe	28 pairs, representing an average of 1.4% of the GB population (5 year mean 1991-1995)

Species with peak counts in spring/autumn:

Great cormorant , *Phalacrocorax carbo carbo*, NW Europe	271 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)
Little egret , *Egretta garzetta*, West Mediterranean	125 individuals, representing an average of 7.5% of the GB population (5 year peak mean 1998/9-2002/3)
Pied avocet , *Recurvirostra avosetta*, Europe/Northwest Africa	645 individuals, representing an average of 18.9% of the GB population (5 year peak mean 1998/9-2002/3)
Whimbrel , *Numenius phaeopus*, Europe/Western Africa	49 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian curlew , *Numenius arquata arquata*, N. a. arquata Europe (breeding)	3575 individuals, representing an average of 2.4% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	68 individuals, representing an average of 11.3% of the GB population (5 year peak mean 1998/9-2002/3)
Ruddy turnstone , *Arenaria interpres interpres*, NE Canada, Greenland/W Europe & NW Africa	600 individuals, representing an average of 1.2% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Northern shoveler , *Anas clypeata*, NW & C Europe	214 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian oystercatcher , *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering	3632 individuals, representing an average of 1.1% of the GB population (5 year peak mean 1998/9-2002/3)

European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	4500 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site.

Invertebrates.

A total of more than twelve British Red Data Book species of wetland invertebrates have been recorded on the site, including:

Polystichus connexus, Cephalops perspicuus, Peocilobothrus ducalis, Anagnota collini, Baris scolopacea, Berosus spinosus, Malachius vulneratus, Philonthus punctus, Malacostoma castrensis, Atylotus latistriatus, Campsicnemus magius, Cantharis fusca, Limonia danica, Lestes dryas, Hydrochus ignicollis, Hydrophilus piceus, Dicranomyia danica and *Lejops vittata*.

---

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Tourism
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

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24. Land tenure/ownership:

Ownership category	On-site	Off-site

Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
National/Crown Estate	+	
Private	+	+
Public/communal	+	+
Other	+	+

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Collection of non-timber natural products: (unspecified)	+	
Fishing: commercial	+	+
Fishing: recreational/sport	+	+
Gathering of shellfish	+	
Bait collection	+	
Permanent arable agriculture		+
Permanent arable agriculture	+	+
Livestock watering hole/pond	+	+
Grazing (unspecified)	+	+
Hunting: recreational/sport	+	+
Industrial water supply	+	
Industry		+
Sewage treatment/disposal	+	+
Harbour/port	+	+
Flood control	+	
Transport route	+	+
Urban development		+
Non-urbanised settlements		+
Military activities		+

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Water diversion for irrigation/domestic/industrial use	1		+	+	+
Dredging	1	Continued maintenance dredging for port facilities and jetties may be contributing to adverse effects, e.g. through removal of sediment from the estuary. Maintenance dredging is subject to regulation and will be assessed under a protocol currently being trialled by Defra.	+	+	+
Erosion	2		+		+
Eutrophication	2	The Medway shows symptoms of eutrophication, particularly growth of green algae which covers large areas of the intertidal mudflats in late summer. Studies by the Environment Agency also indicate that the waters in the Medway are hyper-nutrified for nitrogen and phosphorus.	+	+	+
Recreational/tourism disturbance (unspecified)	1		+		+
Transport infrastructure development	1	Construction of new road bridge on to Isle of Sheppey, resulting in loss of some designated habitat and disturbance during construction. Scheme was assessed under Habitats Regulations and compensatory habitat provided (outside current designated site).	+	+	+

For category 2 factors only.
What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Erosion - The North Kent Coastal Habitat Management Plan (CHaMP) has been produced (Anon. 2002). The Environment Agency is to produce a Shoreline Management Plan/Flood Defence Strategy for the in the Medway and Swale and decisions on future flood risk management will need to take into account the effects on features within the designated sites.
Large-scale trials of mudflat recharge to address erosion.

Eutrophication - Water quality and sources of nutrient inputs are subject to further investigation by the

Environment Agency as part of the Agency's review of consents under the Habitats Regulations. Stage 3 of the Review of Consents (appropriate assessment) is scheduled for completion by March 2006, at which point any consented discharges having an adverse effect on site integrity will be identified.
Is the site subject to adverse ecological change? YES

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Environmentally Sensitive Area (ESA)	+	

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Intertidal invertebrates and biotopes are being surveyed as part of a project on behalf of English Nature and the Medway Swale Estuary Partnership. Additional surveys are being carried out by the Environment Agency and the water industry to investigate the effects of (off-site) water abstraction on the invertebrate communities and birds associated with (on-site) fresh water flows.

Habitat.
ENSIS monitoring.
Experimental mudflat recharge using dredging spoil.
MNCR littoral and sublittoral survey.
Kent Wildlife Habitat Survey, and North Kent Marshes Saltmarsh Survey (Kent County Council);
Botanical survey of sea walls in north Kent, and study of factors affecting the occurrence of nationally scarce plant species on sea walls in north Kent SSSIs (English Nature)

Other

A carrying capacity study (for recreational uses) is currently being funded by the Medway Swale Estuary Partnership.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Gillingham Riverside Country Park.
E.ON Oakham Marsh Nature Reserve
The Medway Wildlife Ranger Service provides information to recreational boat users during peak season.
The Medway Swale Estuary Partnership publications and website (www.medway-swale.org.uk) provide information on the environmental features and uses of the estuary.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

Yachting, angling, wildfowling, jet skiing, waterskiing, birdwatching. Bird watching occurs throughout the year and wildfowling is restricted to the period September to February. The remaining activities occur year-round but are more prevalent in the summer months. Disturbance from these activities is a current issue but is being addressed through further research, negotiation and information dissemination. In this context, a River Leisure Usage Survey has been carried out by the Medway Swale Estuary Partnership, and the Partnership is funding a carrying capacity study for recreational uses. The Kent Coastal Network is also organising a stakeholders working group to consider the impacts and management of jet-skis within this and other coastal sites in Kent.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
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APPENDIX 6

Medway Estuary and Marshes SSSI Citation

COUNTY: KENT SITE NAME: MEDWAY ESTUARY AND MARSHES

BOROUGH: ROCHESTER UPON MEDWAY/SWALE/GILLINGHAM

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: ROCHESTER UPON MEDWAY CITY COUNCIL, Swale Borough Council, Gillingham Borough Council

National Grid Reference: TQ 850 720 Area: 6,840.14 (ha.) 16,895.14 (ac.)

Ordnance Survey Sheet 1:50,000: 178 1:10,000: TQ 76 NE, TQ 77 SE, TQ 86 NW/NE, TQ 87, TQ 96 NW, TQ 97 SW

Date Notified (Under 1949 Act): 1968 Date of Last Revision: 1981

Date Notified (Under 1981 Act): 1984 Date of Last Revision: 1992

Other Information:
Previously known as the Medway Marshes SSSI, a former part of this site, north of the A228 to the Isle of Grain, is included with other SSSIs in the new South Thames Estuary and Marshes SSSI. Parts of the site are listed in *A Nature Conservation Review*, D A Ratcliffe (ed) Cambridge University Press 1977. The site has been extended to include adjacent areas of grazing marsh and estuarine habitats. The notification only extends to land above the Mean Low Water Mark (MLWM). The site is a candidate for designation under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention), and as a Special Protection Area under European Commission Directive 79/409 on the Conservation of Wild Birds.

Reasons for Notification:
The Medway Estuary and Marshes form the largest area of intertidal habitats which have been identified as of value for nature conservation in Kent and are representative of the estuarine habitats found on the North Kent coast. A complex of mudflats and saltmarsh is present with in places grazing marsh behind the sea walls which is intersected by dykes and fleets. The area holds internationally important populations of wintering and passage birds and is also of importance for its breeding birds. An outstanding assemblage of plant species also occurs on the site.

The Medway Estuary is now believed to be the most important area in North Kent for wintering wildfowl with shelduck *Tadorna tadorna*, brent goose *Branta bernicla*, grey plover *Pluvialis squatarola*, ringed plover *Charadrius hiaticula*, pintail *Anas acuta*, dunlin *Calidris alpina*, and redshank *Tringa totanus* occurring in numbers of international significance. Also present in numbers of national significance are turnstone *Arenaria interpres*, black-tailed godwit *Limosa limosa*, curlew *Numenius arquata*, great crested grebe *Podiceps cristatus*, shoveler *Anas*

clypeata, teal *Anas crecca*, wigeon *Anas penelope* and white-fronted goose *Anser albifrons.* Passage migrants include ruff *Philomachus pugnax*, whimbrel *Numenius phaeopus* and avocet *Recurvirostra avosetta.*

The Chetney Peninsula is among the most important wildfowl breeding areas in Kent. Breeding species include avocet, shelduck, shoveler, pochard *Athyia ferina*, mute swan *Cygnus olor*, tufted duck *Athyia fuligula*, teal *Anas crecca* and gadwall *Anas strepera.*

The saltmarsh, in addition to serving as a roosting area for waders at high tide, and supporting breeding birds such as redshank *Tringa totanus*, blackheaded gull *Larus ridibundus* and common tern *Sterna hirundo*, also has an interesting flora. The most abundant plants include sea aster *Aster tripolium*, sea lavender *Limonium vulgare*, cord-grass *Spartina anglica* and saltmarsh-grass *Puccinellia maritima*, but among the many others are several scarce species such as golden samphire *Inula crithmoides**, perennial glasswort *Salicornia perennis** and one-flowered glasswort *Salicornia pusilla**. The estuary is one of the best places in Britain for the study of glassworts.

The grazing marsh is a complex habitat of pasture, seawalls and counterwalls, and numerous dykes and fleets. Each of these has its own characteristic assemblage of plants and animals. Both breeding and wintering birds are of interest; the former include lapwing *Vanellus vanellus*, redshank, pochard, mallard *Anas platyrhynchos* and gadwall, while in winter large flocks of many wildfowl and wader species are present. The vegetation is primarily a mixture of several species of grass, but with a considerable variety of other plants, some uncommon, for example sea barley *Hordeum marinum**, slender hare's-ear *Bupleurum tenuissimum**, oak-leaved goose-foot *Chenopodium glaucum*** and sea clover *Trifolium squamosum*.* The dykes and their margins usually have sea club-rush *Scirpus maritimus* as the most abundant plant, but here too rarities can be found, sometimes in quite large amounts: annual beard-grass *Polypogon monspeliensis**, small goose foot *Chenopodium botryodes**, golden dock *Rumex maritimus** and brackish water-crowfoot *Ranunculus baudotii** are examples of these.

In addition to the habitats already described, the site includes smaller areas of scrub, reedbeds and sand dune which add to the variety of interest. The shell sand beaches of the Isle of Grain are of particular interest in that they are the only examples of such habitat remaining so far up the Thames estuary. They have a distinctive flora including sand couch *Elymus farctus*, sea holly *Eryngium maritimum*, sea sandwort *Honkenya peploides*, sea rocket *Cakile maritima* and prickly saltwort *Salsola kali.*

+*Wildfowl and Wader Counts 1988–89*, D G Salmon et al, Wildfowl Trust, 1989.
*Nationally scarce species: recorded from 16–100 10 × 10km squares.
**Nationally rare species: recorded from 1–15 10 × 10 km squares in Britain, and listed in *British Red Data Books: 1 Vascular Plants*, F H Perring and L Farrell, RSNC 1983.

APPENDIX 7

Medway Estuary and Marshes SSSI Condition Assessment (May 2019)

Report generated on: 01 May 2019

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment	Adverse Condition Reasons
Medway Estuary and Marshes SSSI - KENT (MEDWAY, SWALE)									
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	001	1016729	72.9679	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	021	1016735	11.5746	0.00	07/09/2010	Unfavourable - No change	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	AGRICULTURE - UNDERGRAZING,LACK OF CORRECTIVE WORKS - INAPPROPRIATE DITCH MANAGEMENT,
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	023	1016733	51.3294	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	027	1016725	78.9346	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
INSHORE SUBLITTORAL SEDIMENT - CL	Abbi Bamping	030	1026505	52.2423	0.00	18/02/2015	Unfavourable - Recovering	Hooe Island is in the process of agreeing a post industrial use restoration plan. The island has been used for decades to take river dredging in particular from the construction of Chatham Docks. The island is divided up into bunded sections which have been used to accept dredging. There is an external bund around the whole exterior of the island under a Environmental Permit administered through the EA. There is some bank stabilisation and plans being agreed ecological restoration and conservation management aimed at s41 invertebrates and birds. The site is currently a mix of successional communities on dredged material within the bunded areas with some extensive areas of ruderal and some very small patches of reed bed. The bunds are generally rough MG5 type grassland. The eastern end of the island has not been used for dredging and has a good area of salt marsh. WeBs counts for 2003 to 2008 in the Medway Estuary and Marshes indicates number of wintering and breeding birds is too low inc Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly across the SSSIs for reasons which are not clear. KH Feb 15	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	031	1016710	36.9229	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	032	1006832	17.2095	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	033	1016730	90.1099	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	034	1016743	130.5532	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	035	1016741	16.4337	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	039	1006834	7.9622	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	040	1016731	50.8661	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	041	1006835	13.5144	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	042	1006836	36.5098	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	043	1006837	9.8524	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	048	1016734	16.9688	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	049	1006840	28.2927	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	054	1016742	26.4866	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	055	1006843	38.5214	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	056	1006844	40.4921	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	057	1006846	34.1972	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	058	1016739	2.5861	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	074	1016740	22.1652	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	075	1025669	6.3601	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	

FEN, MARSH AND SWAMP - Lowland	Abbi Bamping	076	1016736	1.1218	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
FEN, MARSH AND SWAMP - Lowland	Abbi Bamping	099	1019186	20.9055	0.00	01/04/2011	Unfavourable - Recovering	S agreement live from 1st April 2011. covering ditch and reedbed restoration.	
LITTORAL SEDIMENT	Abbi Bamping	100	1023903	2163.432	0.00	20/03/2017	Unfavourable - Declining	Algal blooms were detected on Bartlett spit and Bishops ooze on 8-8-2016directly in front of the Motney Sewage treatment works outfall - smothering the mudflats and impacting on the food availability for the Medway bird assemblage	
LITTORAL SEDIMENT	Abbi Bamping	101	1023904	1647.766	0.00	07/09/2010	Unfavourable - Recovering	This assessment was based on bird data alone and has not taken into account habitat features. Data supplied by BTO (WeBs counts for 2003 to 2008) in the Medway Estuary and Marshes indicates that the criterion for a number of wintering and breeding birds (population should be maintained above 50% of that at designation) is not met. These birds are Little Tern, Dark-bellied Brent Goose, Shelduck, Wigeon, Teal, Great Crested Grebe, Ringed Plover, Grey Plover, Dunlin, Curlew and Redshank. Wintering and breeding bird numbers have declined significantly at this site for reasons which are not clear. Management is in place to maintain the habitat required to support the assemblage of wintering and breeding birds through stewardship schemes, ditch management, the consenting process and the Local Development Framework process. Drawing from previous condition assessments, habitat quality is thought to be good and not the cause of declines. As it is currently unclear as to why bird declines are occurring, a number of reasons are being investigated including disturbance, bird movements within the region and internationally. Further consideration on condition will be given when the results of current research are available; in the meantime the site remains recovering but at risk.	
INSHORE SUBLITTORAL SEDIMENT - CL	Abbi Bamping	106	1029490	22.5552	0.00	27/02/2009	Destroyed	This area of mudflats was lost to planning development (car park) which is part of Sheerness Docks. The special interest feature has been irretrievably lost.	PLANNING PERMISSION - PLANNING PERMISSION - GENERAL,

APPENDIX 8

Thames Estuary and Marshes SPA Citation and Natura 2000 Standard Data Form

EC Directive 79/409 on the Conservation of Wild Birds: Special Protection Area

Name: Thames Estuary and Marshes

Unitary Authority/County: Essex County Council, Gravesham Borough Council, Kent County Council, Medway Council, and Thurrock Borough Council.

Consultation proposal: Mucking Flats and Marshes SSSI and South Thames Estuary and Marshes SSSIs have been recommended as a Special Protection Area because of the site's European ornithological interest.

The Thames Estuary and Marshes Special Protection Area is a wetland of European importance comprising a mosaic of intertidal habitats, saltmarsh, coastal grazing marshes, saline lagoons and chalk pits. The site provides wintering and breeding habitats for important assemblages of wetland bird species, particularly wildfowl and waders as well as supporting migratory birds on passage. The site forms part of the wider Thames Estuary together with other classified SPAs in both Essex and Kent.

Boundary of SPA: The SPA boundary is within or coincident with the above SSSI boundaries. See SPA map for further detail.

Size of SPA: The SPA covers an area of 4,838.94 ha.

European ornithological importance of the SPA: Thames Estuary and Marshes SPA is of European importance because:

a) the site qualifies under **article 4.1** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the GB populations of the following species listed on Annex I, in any season:

Annex I species	5 year peak mean 1993/94 - 1997/98	% GB population
Avocet *Recurvirostra avosetta*	283 individuals - wintering	28.3% GB
Hen Harrier *Circus cyaneus*	7 individuals - wintering	1.0% GB

b) the site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by 1% or more of the biogeographical populations of the following regularly occurring migratory species (other than those listed on Annex I), in any season:

Species	5 year peak mean 1993/94 - 1997/98	% of population
Ringed Plover *Charadrius hiaticula*	1,324 individuals - passage	2.6% Europe/ Northern Africa (win)
Grey Plover *Pluvialis squatarola*	2,593 individuals - wintering	1.7% Eastern Atlantic (wintering)
Dunlin *Calidris alpina alpina*	29,646 individuals - wintering	2.1% N Siberia/Europe/ W Africa
Knot *Calidris canutus islandica*	4,848 individuals - wintering	1.4% NE Can/Grl/ Iceland/NW Eur
Black-tailed Godwit *Limosa limosa islandica*	1,699 individuals - wintering	2.4% Iceland (breeding)
Redshank *Tringa totanus totanus*	3,251 individuals - wintering	2.2% Eastern Atlantic (wintering)

c) the site qualifies under **article 4.2** of the Directive (79/409/EEC) as it is used regularly by over 20,000 waterfowl in any season:

Period	Season	Population
1993/94 - 1997/98	Wintering	75,019

Non-qualifying species of interest

Other Annex 1 species which regularly occur on the site in non-qualifying numbers are breeding Common Tern *Sterna hirundo*, and passage and wintering Bewick's Swan *Cygnus columbianus bewickii*, Golden Plover *Pluvialis apricaria*, Ruff *Philomachus pugnax*, Short-eared Owl *Asio flammeus* and Kingfisher *Alcedo atthis*.

The site also supports nationally important populations of Shelduck *Tadorna tadorna*, Teal *Anas crecca*, Pintail *Anas acuta*, Gadwall *Anas strepera*, Shoveler *Anas clypeata*, Tufted Duck *Aythya fuligula* and Pochard *Aythya ferina*.

Status of SPA

The Thames Estuary and Marshes SPA was classified on 31 March 2000.

NATURA 2000 – STANDARD DATA FORM

Special Protection Areas under the EC Birds Directive.

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Protection Areas (SPAs) in the United Kingdom is available from the SPA home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SPAs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9012021**
SITENAME	**Thames Estuary and Marshes**

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1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
A	UK9012021

1.3 Site name

Thames Estuary and Marshes

1.4 First Compilation date	1.5 Update date
2000-03	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	2000-03
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.596388889	51.48555556

2.2 Area [ha]:

4802.47

2.3 Marine area [%]

55.7

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ4	Kent
UKH3	Essex

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo
B	A672	Calidris alpina alpina			w	29646	29646	i		G	B		C	
B	A143	Calidris canutus			w	4848	4848	i		G	C		C	
B	A137	Charadrius hiaticula			c	1324	1324	i		G	B		C	
B	A082	Circus cyaneus			w	7	7	i		G	C		C	
B	A616	Limosa limosa islandica			w	1699	1699	i		G	B		C	
B	A141	Pluvialis squatarola			w	2593	2593	i		G	C		C	
B	A132	Recurvirostra avosetta			w	283	283	i		G	A		C	
		Tringa												

B	A162	totanus			w	3251	3251	i		G	B		C

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	WATR	Waterfowl assemblage			75019	75019	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N07	3.7
N06	5.6
N03	1.5
N09	1.9
N05	0.9
N10	29.1
N02	57.3
Total Habitat Cover	100.00000000000001

Other Site Characteristics

1 Terrestrial: Soil & Geology: shingle,alluvium,mud 2 Terrestrial: Geomorphology and landscape: coastal,floodplain 4 Marine: Geomorphology: estuary,intertidal sediments (including sandflat/mudflat)

4.2 Quality and importance

ARTICLE 4.1 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Circus cyaneus 1% of the population in Great Britain Five year peak mean for 1993/94 to 1997/98 Recurvirostra avosetta (Western Europe/Western Mediterranean - breeding) 28.3% of the population in Great Britain Five year peak mean for 1993/93 to 1997/98 ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Calidris alpina alpina (Northern Siberia/Europe/Western Africa) 2.1% of the population Five year peak mean for 1993/94 to 1997/98 Calidris canutus (North-eastern Canada/Greenland/Iceland/North-western Europe) 1.4% of the population Five year peak mean for 1993/94 to 1997/98 Limosa limosa islandica (Iceland - breeding) 2.4% of the population Five year peak mean for 1993/94 to 1997/98 Pluvialis squatarola (Eastern Atlantic - wintering) 1.7% of the population Five year peak mean for 1993/94 to 1997/98 Tringa totanus (Eastern Atlantic - wintering) 2.2% of the population Five year peak mean for 1993/94 to 1997/98 On passage the area regularly supports: Charadrius hiaticula (Europe/Northern Africa - wintering) 2.6% of the population Five year peak mean for 1993/94 to 1997/98 ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 75019 waterfowl (5 year peak mean 1991/92-1995/96) Including: Recurvirostra avosetta , Pluvialis squatarola , Calidris canutus , Calidris alpina alpina , Limosa limosa islandica , Tringa totanus

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	M01		B
H	I01		B
H	G01		I
H	M02		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A02		I
H	G03		I
H	D05		I
H	A04		I
H	A06		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/3212324
http://publications.naturalengland.org.uk/category/6490068894089216

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [x] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX 9

European Site Conservation Objectives for Thames Estuary and Marshes SPA

European Site Conservation Objectives for Thames Estuary and Marshes Special Protection Area Site Code: UK9012021

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A082 *Circus cyaneus*; Hen harrier (Non-breeding)
A132 *Recurvirostra avosetta*; Pied avocet (Non-breeding)
A137 *Charadrius hiaticula*; Ringed plover (Non-breeding)
A141 *Pluvialis squatarola*; Grey plover (Non-breeding)
A143 *Calidris canutus*; Red knot (Non-breeding)
A149 *Calidris alpina alpina*; Dunlin (Non-breeding)
A156 *Limosa limosa islandica*; Black-tailed godwit (Non-breeding)
A162 *Tringa totanus*; Common redshank (Non-breeding)
Waterbird assemblage

This is a European Marine Site

This SPA is a part of the Thames Estuary and Marshes European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

APPENDIX 10

Ramsar Information Sheet (RIS) for Thames Estuary and Marshes Ramsar Site

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY	
Designation date	Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 31 March 2000

3. Country:

UK (England)

4. Name of the Ramsar site:

Thames Estuary and Marshes

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:

e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

51 29 08 N 00 35 47 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Gravesend

Contains part of the north coast of Kent and part of the southern coast of Essex, straddling the Thames estuary.

Administrative region: Essex; Kent; Medway; Thurrock

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 5588.59

Min.	-2
Max.	20
Mean	1

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

A complex of brackish, floodplain grazing marsh ditches, saline lagoons and intertidal saltmarsh and mudflat. These habitats together support internationally important numbers of wintering waterfowl. The saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

2, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

The site supports one endangered plant species and at least 14 nationally scarce plants of wetland habitats. The site also supports more than 20 British Red Data Book invertebrates.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
45118 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:	
Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	595 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	1640 individuals, representing an average of 4.6% of the population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering	1643 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1998/9-2002/3)
Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	7279 individuals, representing an average of 1.6% of the population (5 year peak mean 1998/9-2002/3)
Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	15171 individuals, representing an average of 1.1% of the population (5 year peak mean 1998/9-2002/3)
Common redshank , *Tringa totanus totanus*,	1178 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
Details of bird species occuring at levels of National importance are given in Section 22

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15. Biogeography (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation):

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:
Atlantic

b) biogeographic regionalisation scheme (include reference citation):
Council Directive 92/43/EEC

---

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	alluvium, mud, shingle
Geomorphology and landscape	coastal, floodplain, intertidal sediments (including sandflat/mudflat), estuary
Nutrient status	eutrophic
pH	no information
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	no information
Water permanence	usually permanent, usually seasonal / intermittent
Summary of main climatic features	Annual averages (Greenwich, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/greenwich.html) Max. daily temperature: 14.8° C Min. daily temperature: 7.2° C Days of air frost: 29.1 Rainfall: 583.6 mm Hrs. of sunshine: 1461.0

General description of the Physical Features:

The marshes extend for about 15 km along the south side of the Thames estuary and also include intertidal areas on the north side of the estuary. To the south of the river, much of the area is brackish grazing marsh, although some of this has been converted to arable use. At Cliffe, there are flooded clay and chalk pits, some of which have been infilled with dredgings. Outside the sea-wall, there is a small extent of saltmarsh and broad intertidal mudflats.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The marshes extend for about 15 km along the south side of the Thames estuary and also include intertidal areas on the north side of the estuary. To the south of the river, much of the area is brackish grazing marsh, although some of this has been converted to arable use. At Cliffe, there are flooded clay and chalk pits, some of which have been infilled with dredgings. Outside the sea-wall, there is a small extent of saltmarsh and broad intertidal mudflats.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces, Sediment trapping, Flood water storage / desynchronisation of flood peaks, Maintenance of water quality (removal of nutrients)

19. Wetland types:

Marine/coastal wetland

Code	Name	% Area
G	Tidal flats	49.6
4	Seasonally flooded agricultural land	38.6
Q	Saline / brackish lakes: permanent	4.2
Ss	Saline / brackish marshes: seasonal / intermittent	3.2
Other	Other	1.6
H	Salt marshes	1.3
E	Sand / shingle shores (including dune systems)	0.8
O	Freshwater lakes: permanent	0.7

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The intertidal flats are mostly fine, silty sediment, though in parts they are sandy. The saltmarsh shows a transition from pioneer communities containing *Zostera* to saltmarsh dominated by, for example, *Atriplex portulacoides*. The grazing marsh grassland is mesotrophic and generally species-poor. It does, however, contain scattered rarities, mostly annuals characteristic of bare ground. Where the grassland is seasonally inundated and the marshes are brackish the plant communities are intermediate between those of mesotrophic grassland and those of saltmarsh. The grazing marsh ditches contain a range of flora of brackish and fresh water. The aquatic flora is a mosaic of successional stages resulting from periodic clearance of drainage channels. The dominant emergent plants are *Phragmites communis* and *Bolboschoenus maritimus*. The saline lagoons have a diverse molluscan and crustacean fauna. Dominant plants in the lagoons include *Ulva* and *Chaetomorpha*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site:

Higher plants:

The site supports a population of the endangered least lettuce *Lactuca saligna*, and also supports several nationally scarce plants, including bulbous foxtail *Alopecurus bulbosus*, slender hare's-ear *Bupleurum tenuissimum*, divided sedge *Carex divisa*, saltmarsh goosefoot *Chenopodium chenopodioides*, sea barley *Hordeum marinum*, golden samphire *Inula crithmoides*, annual beard grass *Polypogon monspeliensis*, Borrer's saltmarsh-grass *Puccinellia fasciculata*, stiff saltmarsh-grass *P. rupestris*, one-flowered glasswort *Salicornia pusilla*, clustered clover *Trifolium glomeratum*, sea clover *T. squamosum*, narrow-leaved eelgrass *Zostera angustifolia* and dwarf eelgrass *Z. noltei*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species with peak counts in spring/autumn:

Little grebe , *Tachybaptus ruficollis ruficollis*, Europe to E Urals, NW Africa	251 individuals, representing an average of 3.2% of the GB population (5 year peak mean 1998/9-2002/3)
Little egret , *Egretta garzetta*, West Mediterranean	54 individuals, representing an average of 3.2% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , *Philomachus pugnax*, Europe/W Africa	23 individuals, representing an average of 3.2% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	38 individuals, representing an average of 6.3% of the GB population (5 year peak mean 1998/9-2002/3)

Species with peak counts in winter:

Common shelduck , *Tadorna tadorna*, NW Europe	1238 individuals, representing an average of 1.5% of the GB population (5 year peak mean 1998/9-2002/3)
Gadwall , *Anas strepera strepera*, NW Europe	359 individuals, representing an average of 2% of the GB population (5 year peak mean 1998/9-2002/3)
Northern shoveler , *Anas clypeata*, NW & C Europe	288 individuals, representing an average of 1.9% of the GB population (5 year peak mean 1998/9-2002/3)
Water rail , *Rallus aquaticus*, Europe	6 individuals, representing an average of 1.3% of the GB population (5 year peak mean 1998/9-2002/3)
Pied avocet , *Recurvirostra avosetta*, Europe/Northwest Africa	607 individuals, representing an average of 17.8% of the GB population (5 year peak mean 1998/9-2002/3)
Spotted redshank , *Tringa erythropus*, Europe/W Africa	6 individuals, representing an average of 4.4% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site:

Invertebrates:

The endangered species *Bagous longitarsis* occurs on the site.

The following vulnerable species occur on the site: a groundbug *Henestaris halophilus*, a weevil *Bagous cylindrus*, a ground beetle *Polystichus connexus*, a cranefly *Erioptera bivittata*, a cranefly *Limnophila pictipennis*, a horse fly *Hybomitra expollicata*, a hoverfly *Lejops vittata*, a dancefly *Poecilobothrus ducalis*, a snail-killing fly *Pteromicra leucopeza*, a solitary wasp *Philanthus triangulum* and a damselfly *Lestes dryas*.

The following rare species occur on the site: a ground beetle *Anisodactylus poeciloides*, the water beetles *Aulacochthebius exaratus*, *Berosus fulvus*, *Cercyon bifenestratus*, *Hydrochus elongatus*, *H. ignicollis*, *Ochthebius exaratus* and *Hydrophilus piceus*, a beetle *Malachius vulneratus*, a rove beetle *Philonthus punctus*, a fungus beetle *Telmatophilus brevicollis*, a fly *Campsicnemus magius*, a horsefly *Haematopota bigoti*, a soldier fly *Stratiomys longicornis* and a spider *Baryphyma duffeyi*.

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23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Tourism
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site
Non-governmental organisation (NGO)	+	+
Local authority, municipality etc.	+	+
Private	+	+
Public/communal	+	

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	+
Tourism	+	+
Recreation	+	+
Current scientific research	+	+
Fishing: commercial	+	
Fishing: recreational/sport	+	
Gathering of shellfish	+	
Bait collection	+	
Arable agriculture (unspecified)		+
Permanent arable agriculture		+
Livestock watering hole/pond	+	+
Grazing (unspecified)	+	+
Permanent pastoral agriculture	+	+
Hunting: recreational/sport	+	
Industrial water supply		+
Industry		+
Sewage treatment/disposal	+	+
Harbour/port	+	+
Flood control	+	
Transport route	+	+
Urban development		+
Military activities	+	

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Dredging	1		+	+	+
Erosion	2		+		+
Eutrophication	2	Studies by the Environment Agency indicate that the waters in the Thames estuary are hyper-nutrified for nitrogen and phosphorus.	+	+	+
General disturbance from human activities	1		+		+

For category 2 factors only.
What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Erosion - The North Kent Coastal Habitat Management Plan (CHaMP) has been produced. The Environment Agency is producing a Flood Defence Strategy for the Thames (Thames 2100) and decisions on future flood risk management will need to take into account the effects on features within the designated sites.
Studies of sediment transport and hydrodynamics within Thames estuary. Investigation of beneficial use of dredgings for mudflat recharge and creation of compensatory habitat.

Eutrophication - Water quality and sources of nutrient inputs are subject to further investigation by the Environment Agency as part of the Agency's review of consents under the Habitats Regulations. Stage 3 of the Review of Consents (appropriate assessment) is scheduled for completion by March 2006, at which point any consented discharges having an adverse effect on site integrity will be identified.

Is the site subject to adverse ecological change? YES

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
Special Protection Area (SPA)	+	

Land owned by a non-governmental organisation for nature conservation	+	+
Management agreement	+	
Site management statement/plan implemented	+	
Environmentally Sensitive Area (ESA)	+	+

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl and Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.
Numbers of breeding waders have been monitored through the BTO/RSPB/English Nature/Defra survey Breeding Waders of Wet Meadows (2002).
Botanical surveys of vegetation of sea wall embankments and grazing marsh ditches have been carried out.
The distribution and extent of saltmarsh habitat has been mapped - North Kent Marshes Saltmarsh Survey (2002) (Blair-Myres 2003)
The RSPB monitors various species groups on its reserves within the site

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

The RSPB manages a network of reserves within and adjacent to the site, which are promoted locally through existing community initiatives, and more widely through publications and via the internet. The site forms part of proposals for a north Kent 'Regional Park', being promoted to balance development in Kent Thameside (part of the Thames Gateway growth area). The Management Guidance for the Thames Estuary aims to increase awareness of conservation and is promoted by the Thames Estuary Partnership. The Thames Estuary Partnership has also produced the Tidal Thames Habitat Action Plan to raise awareness of and address biodiversity issues.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Yachting, angling, wildfowling, jet-skiing, water-skiing and birdwatching. Bird watching occurs throughout the year and wildfowling is restricted to the period September to February. The remaining activities occur year-round but are more prevalent in the summer months. Disturbance from these activities is a current issue but is being addressed through further research, negotiation and information dissemination.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**

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APPENDIX 11

South Thames Estuary and Marshes SSSI Citation

COUNTY: KENT SITE NAME: SOUTH THAMES ESTUARY AND MARSHES

BOROUGHS: GRAVESHAM, ROCHESTER UPON MEDWAY

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended

Local Planning Authorities: GRAVESHAM BOROUGH COUNCIL, Rochester upon Medway Borough Council

National Grid Reference: TQ 770785 Area. 5449.14 (ha.) 13459.38 (ac.)

Ordnance Survey Sheet 1:50,000: 178 1:10,000: TQ 67 SE, NE
TQ 77 SW, NW, NE
TQ 87 NW, NE

Dates Notified (Under 1949 Act): 1951, 1968 Date of Last Revision: 1981

Date Notified (Under 1981 Act): 1984 Date of Last Revision: 1991

Other Information:
Parts of the site are listed in '*A Nature Conservation Review*', D A Ratcliffe (ed) CUP 1979. The site is also a candidate for designation under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) and as a Special Protection Area under European Community Directive 79/409 on the Conservation of Wild Birds. The site includes the former sites of Higham Marshes SSSI, Cliffe and Cooling Marshes SSSI and part of Medway Marshes SSSI. There are also four extensions to the existing SSSIs.

Reasons for Notification:
The South Thames Estuary and Marshes SSSI from Gravesend to the eastern end of the Isle of Grain forms a major component of the Greater Thames Estuary. The site consists of an extensive mosaic of grazing marsh, saltmarsh, mudflats and shingle characteristic of the estuarine habitats of the north Kent marshes. Freshwater pools and some areas of woodland provide additional variety and complement the estuarine habitats. The site supports outstanding numbers of waterfowl with total counts regularly exceeding 20,000. Many species regularly occur in nationally important[1] numbers and some species regularly use the site in internationally important[2] numbers. The breeding bird community is also of particular interest. The diverse habitats within the site support a number of nationally rare[3] and scarce[4] invertebrate species and an assemblage of nationally scarce plants.

Birds
The mudflats attract large numbers of feeding waders and wildfowl with the site being regularly used by redshank *Tringa totanus* in internationally important numbers. There is evidence from recent winter low-water counts that knot *Calidris canuta* and dunlin *Calidris alpina* exceed internationally important

numbers when feeding on the mudflats. These counts also indicate that avocet *Recurvirostra avosetta* and ringed plover *Charadrius hiaticula* regularly exceed nationally important numbers.

During the high tide period, waterfowl disperse to roosts in marshes in north Kent and Essex. Nevertheless, high tide counts for this site clearly reveal species regularly reaching nationally important numbers in winter including European white-fronted goose *Anser albifrons* spp *albifrons*, shelduck *Tadorna tadorna*, gadwall *Anas strepera*, teal *Anas crecca*, pintail *Anas acuta*, shoveler *Anas clypeata*, grey plover *Pluvialis squatarola*, curlew *Numenius arquata* and black-tailed godwit *Limosa limosa*. In addition, nationally important numbers of grey plover, curlew, black-tailed godwit, redshank and greenshank *Tringa nebularia* occur during autumn passage with redshank maintaining their nationally important numbers on spring passage.

During the breeding season the south Thames marshes support an outstanding assemblage of breeding birds including rare[5] species such as garganey *Anas querquedula*, pintail, avocet and bearded tit *Panurus biarmicus*.

Specially protected birds[6] found within the site include hen harrier *Circus cyaneus*, short-eared owl *Asio flammeus*, ruff *Philomachus pugnax*, common tern *Sterna hirundo*, avocet and golden plover *Pluvialis apricaria*.

Vegetation

The saltmarshes support characteristic vegetation dominated by the saltmarsh grasses *Puccinellia*, the glassworts *Salicornia*, sea aster *Aster tripolium*, sea lavender *Limonium vulgare* and sea purslane *Halimione portulacoides*, with nationally scarce plants such as golden samphire *Inula crithmoides*[4] and *Puccinellia fasciculata*[4].

The grazing marsh complexes, including seawalls, counterwalls, fleets, dykes, runnels and seasonally wet depressions provide suitable conditions for a wide range of plants and animals. The grassland habitats range from the damp muddy areas near the dykes, where characteristic plants include divided sedge *Carex divisa*[4], small goosefoot *Chenopodium botryodes*[4] and golden dock *Rumex maritimus*[4], to the dry seawalls and counterwalls which support scarce species in addition to many widespread plants. These scarce plants include slender hare's ear *Bupleurum tenuissimum*[4], sea clover *Trifolium squamosum*[4] and sea barley *Hordeum marinum*[4], all of which are more abundant in the Thames estuary than elsewhere in Britain. Some seasonally damp depressions in the grassland contain the bulbous foxtail grass *Alopecurus bulbosus*[4] whilst the more level turf is dominated by a variety of grasses including other foxtails *Alopecurus*, bents *Agrostis*, rye-grass *Lolium perenne* and fescues *Festuca*, with various herbs such as clovers *Trifolium* and buttercups *Ranunculus* also present. The rare and specially protected least lettuce *Lactuca saligna*[7] which was previously recorded on seawalls in this site may still survive.

The dykes and fleets which are an integral part of the grazing marsh have a range of salinities and consequently support an interesting range of plants. Those nearest the sea tend to be the most brackish, and generally have sea club-rush *Scirpus maritimus*, common reed *Phragmites australis* and fennel pondweed *Potamogeton pectinatus* as the most abundant species; some also include nationally scarce species such as brackish water-crowfoot *Ranunculus baudotii*[4]. In the freshwater dykes further inland there is a greater variety of species, plants such as branched bur-reed *Sparganium erectum* and reed-maces *Typha* spp. may become dominant. Nationally scarce plants associated with the dykes include soft hornwort *Ceratophyllum submersum*[4] with water soldier *Stratiotes aloides*[4] present in dykes near Higham.

The mudflats have beds of eelgrass including *Zostera angustifolia*[4] and *Z. noltii*[4] and the Allhallows region of the site has areas of vegetated shingle with the nationally scarce sea kale *Crambe maritima*[4] present.

Invertebrates

This site supports a diverse invertebrate fauna and includes nationally rare[3] beetles, flies and true bugs. The 'scarce emerald damselfly' *Lestes dryas*, listed in the British Red Data Book*, in the Cliffe area of the site. In addition, 100 nationally scarce species of invertebrate have been recorded including *Lejops vittata* (a hoverfly), *Saldula opacula* (a shorebug) and the dotted fan-foot moth *Macrochilo cribrumalis*, all of which are restricted to wetland, estuarine or grazing marsh habitats. The water beetle fauna is of particular interest and includes four species of *Bagous* (aquatic weevils), three species of *Berosus* and the great silver water beetle *Hydrophilus piceus*.

Notes

[1] Nationally important numbers corresponds to more than 1% of the British population.

[2] Internationally important numbers corresponds to more than 1% of the northwest European population.

[3] Species regarded as nationally rare are recorded from 1–15 of the 10 × 10km squares in Britain.

[4] Species regarded as nationally scarce are recorded from 16–100 of the 10 × 10km squares in Britain.

[5] Listed in 'Red Data Birds in Britain', NCC/RSPB 1990.

[6] Species listed on Annex 1 of the EEC Birds Directive (79/409/EEC).

[7] Plants listed on Schedule 8 of the Wildlife and Countryside Act 1981.

APPENDIX 12

South Thames Estuary and Marshes SSSI Condition Assessment (May 2019)

Report generated on: 01 May 2019

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment	Adverse Condition Reasons
South Thames Estuary and Marshes SSSI - KENT (GRAVESHAM, MEDWAY)									
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	006	1016728	81.3138	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	007	1007016	84.3373	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	008	1007017	27.7594	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional scrub along the ditches.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	009	1007018	69.4502	0.00	26/10/2010	Favourable	The unit supports low-lying semi-improved grassland of value in providing roosting habitat for overwintering birds. There is good sward height, and well managed ditches with a good range of vegetation successional stages. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	010	1007019	86.1118	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional scrub along the ditches.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	011	1007020	59.4767	0.00	26/10/2010	Unfavourable - Recovering	This unit supports low-lying semi-improved grassland of value in providing roosting habitat for overwintering birds. There is also a network of ditches which provide habitat diversity. Work continues to restore the ditch system with internal ditches of the unit in need of further work. Patches of scrub are present which reduce the value of the grassland for roosting wildfowl. The grassland has a mix of suitable sward height. Both cattle and sheep were present during the site visit. Current management appears to be appropriate to maintain the grassland in suitable condition for the breeding bird assemblage. The majority of this unit is currently under an ELS/HLS agri-environment agreement which supports appropriate management to improve habitat conditions.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	012	1007021	37.2828	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional taller herbaceous vegetation.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	013	1007022	83.9124	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional scrub along the ditches.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	014	1007023	76.7022	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	015	1007024	47.8782	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	016	1007025	46.2339	0.00	19/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus. Larger margins of common reed adjacent to Long Hope Fleet with wider areas (up to 20m) of open standing/flowing water used by 100?s of widgeon in the winter months.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	017	1016737	2.2824	0.00	19/02/2009	Favourable	Large margins of common reed adjacent to areas of open standing/flowing water used by 100?s of widgeon in the winter months.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	018	1016738	4.3672	0.00	12/02/2009	Favourable	Area of natural creek with emergent vegetation adjacent, mainly of common reed but also taller herbaceous vegetation with occasional scrub where narrow. Water body of variable width providing all year round standing open water not subject to tides. No negative indicators.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	019	1007026	24.5637	0.00	12/02/2009	Favourable	Area of natural creek with emergent vegetation adjacent, mainly of common reed but also taller herbaceous vegetation with occasional scrub where narrow. Water body of variable width providing all year round standing open water not subject to tides. Narrow area of grazed grassland adjacent. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	020	1007027	15.5426	0.00	12/02/2009	Favourable	Cattle grazing giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and sea club rush. Occasional scattered scrub and brambles but less than 5 %. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	021	1007028	39.2699	0.00	12/02/2009	Favourable	Unit includes an area of the seawall which is a close grazed earth bank with a level area between it and the main carrier. Also includes a larger area of grazing of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and sea club rush. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	022	1007029	16.0904	0.00	12/02/2009	Favourable	Area of natural creek with emergent vegetation adjacent, mainly of common reed but also taller herbaceous vegetation but no scrub. Water body of variable width providing all year round standing open water not subject to tides.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	024	1007030	52.5044	0.00	12/02/2009	Favourable	Cattle grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed, sea club rush and reed mace. Signs of recent ditch reprofiling with the spoil levelled to create a low bund which was effectively increasing surface water. No scrub but an ungrazed area of about 2ha of common reeds at one end adjacent to a firing range installation.Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	025	1007031	72.1471	0.00	12/02/2009	Favourable	Horses grazing parts at time of survey with supplementary feed and poached areas mainly beneath power lines and less than 5%.Also sheep grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and reed mace. Scrub was occasional on the landward side of the unit under the power lines, less than 5%. Unit assessed for value as breeding and over wintering bird habitat. Many birds on the unit including Shelduck, geese, Lapwing, Curlew, Avocet and flocks of Starlings.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	026	1007032	74.2398	0.00	12/02/2009	Favourable	Cattle grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and reed mace. Scrub was more than occasional (between 5% and 10%) but this is deliberate to provide refuge for Great Crested Newts known to be on this unit. Unit assessed for value as breeding and over wintering bird habitat. Many birds on the unit including Shelduck, geese, Lapwing, Curlew, Avocet and flocks of Starlings.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	027	1007033	72.3493	0.00	12/02/2009	Favourable	Cattle grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and reed mace. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	028	1016715	61.6744	0.00	12/02/2009	Favourable	Sheep grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and reed mace. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	029	1016716	63.7541	0.00	12/02/2009	Favourable	Sheep grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and reed mace. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	031	1007036	81.4921	0.00	19/03/2009	Favourable	Uneven area of grassland generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus. With large areas of ephemeral standing water at the time of survey also more permanent water in the ditches and larger water bodies which support emergent vegetation including common reed and sea club rush. 100s of ducks and waders of several species large and small. Areas of scrub on the edge of the unit backing onto the houses < 5%. A small part of the unit was horse grazed at the time of survey with a more evenly short sward and areas of poaching < 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	032	1007037	86.5449	0.00	19/03/2009	Favourable	Uneven area of grassland generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus. With large areas of ephemeral standing water at the time of survey also more permanent water in the ditches and larger water bodies which support emergent vegetation including common reed and sea club rush. 100s of ducks and waders of several species large and small. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	034	1007038	91.2576	0.00	19/03/2009	Favourable	Uneven area of grassland generally sparsely grazed with most of the unit taller tussocks with occasional taller herbaceous vegetation and Juncus. Large areas of ephemeral standing water at the time of survey also more permanent water in the ditches and larger water bodies which support emergent vegetation including common reed and sea club rush. Despite the possibility that this unit was ungrazed in 2008/09, taken as a whole the site is verging on overgrazed so this unit provides a sheltered area of cover away from any access and as such is contributing to the overall habitat. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	035	1007039	49.9745	0.00	19/03/2009	Favourable	Cattle grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and sea club rush. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	036	1007040	93.4793	0.00	19/03/2009	Favourable	Cattle grazing at time of survey giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and sea club rush. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	037	1007041	75.2369	0.00	19/03/2009	Favourable	Uneven area of grassland generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus, dryer areas with ant hills. With large areas of ephemeral standing water at the time of survey also more permanent water in the ditches and larger water bodies which support emergent vegetation including common reed and sea club rush. 100s of ducks of several species large and small, waders, geese and swans at time of survey, lapwing displaying. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	038	1007042	29.4837	0.00	19/03/2009	Favourable	Large (> 10m) margins of common reed bordering areas of open standing water. Adjacent grassland generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	039	1007043	147.6619	0.00	19/03/2009	Favourable	Grazed grassland generally short with areas of taller tussocks, occasional taller herbaceous vegetation and Juncus, dryer areas with ant hills. Large areas of ephemeral standing water at the time of survey also more permanent water in the ditches and larger water bodies which support emergent vegetation including common reed and sea club rush. No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	040	1007044	17.3882	0.00	12/02/2009	Favourable	Close grazed turf on level ground with areas of ephemeral standing water at the time of survey. More permanent water in drains and ditches, emergent aquatic vegetation including Phragmites and Reedmace.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	041	1016714	31.091	0.00	13/03/2009	Unfavourable - No change	e unit has been subject to damage by being regularly ploughed. The habitat is not meeting objectives for the breeding and wintering bird features.	AGRICULTURE - AGRICULTURE - OTHER,

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	042	1016718	35.6654	0.00	12/02/2009	Favourable	A grazed area of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent and floating vegetation including common reed and reed mace. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	043	1016719	19.7686	0.00	12/02/2009	Favourable	A grazed area of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent and floating vegetation including common reed and reed mace. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat	
BOUNDARY AND LINEAR FEATURES	Abbi Bamping	044	1016723	14.4372	0.00	12/02/2009	Favourable	Sheep grazed giving rise to areas of short turf interspersed with taller tussocks. Scrub is dominant at one end of the unit and forms an effective screen of an industrial site from the rest of the grazing marsh.Unit assessed for value as breeding and over wintering bird habitat	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	045	1016720	40.0077	0.00	12/02/2009	Favourable	The majority of the unit is grazed (>70 %) creating short turf with occasional Juncus and large areas of ephemeral standing water at the time of survey.Parts of the unit, which is on the edge of this large site, is unfenced and ungrazed with high levels of public access. This has allowed areas of common reed to dominate with tall grasses, Juncus and tall herbaceous vegetation as well as rabbit grazed areas of scattered scrub on dryer ground.As operational features for this unit is shown as `grazing marsh without breeding waders? the extent of common reed and scrub is adding an additional habitat on the edge of the site and creating a buffer for the more sensitive nesting areas for breeding waders. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	046	1016721	12.88	0.00	12/02/2009	Favourable	Close grazed turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation on uneven ground with areas of ephemeral standing water at the time of survey. More permanent water in drains and ditches, emergent aquatic vegetation including Phragmites and Reedmace.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	047	1023743	55.8677	0.00	12/02/2009	Favourable	Sheep grazed giving rise to areas of short turf interspersed with taller tussocks, juncus and areas of tall herbaceous vegetation. Lots of ephemeral standing water and more permanent areas of water in the many ditches and drains with marginal emergent vegetation including common reed and reed mace. Scrub was occasional, less than 5%.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat	

STANDING OPEN WATER AND CANALS	Abbi Bamping	048	1016711	23.4222	0.00	12/02/2009	Favourable	Standing open water surrounded by ungrazed grassland, common reed and scrub with little emergent vegetation as the banks are not shallow or shelving.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
STANDING OPEN WATER AND CANALS	Abbi Bamping	049	1016712	71.8107	0.00	12/02/2009	Favourable	Standing open water surrounded by ungrazed grassland, common reed and scrub with little emergent vegetation as the banks are not shallow or shelving. There are no signs that this is due to recent changes as site is flooded quarry, may be to do with high water levels at the time of survey.Unit assessed for value as breeding and over wintering bird habitat.	
STANDING OPEN WATER AND CANALS	Abbi Bamping	050	1007070	23.7349	0.00	12/02/2009	Favourable	Large area of open standing water with some recent improvements to extend the areas of bank for fishing access. No emergent or floating aquatic vegetation as the ex quarry workings are very steep sided. Some scrub on the cliff top but very little area beyond the open water within this unit.No negative indicators.	
STANDING OPEN WATER AND CANALS	Abbi Bamping	051	1007071	34.0616	0.00	12/02/2009	Favourable	Large area of open standing water, no emergent or floating aquatic vegetation as the ex quarry workings are very steep sided. Some scrub on the cliff top and the areas beyond the open water within this unit. No negative indicators.	
INSHORE SUBLITTORAL SEDIMENT - CL	Abbi Bamping	052	1007130	21.3797	0.00	12/02/2009	Favourable	Large waterbody with a convoluted shoreline in places. Also includes small areas of uneven ungrazed grassland with taller herbaceous vegetation, patches of common reed and strips of scrub between the separate lagoons.No signs of the previous problems with unauthorised vehicle access and burning of cars and dumping of other rubbish.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
INSHORE SUBLITTORAL SEDIMENT - CL	Abbi Bamping	053	1007131	70.6493	0.00	12/02/2009	Favourable	Large waterbody with a convoluted shoreline in places. Also includes surrounding areas of uneven ungrazed grassland with taller herbaceous vegetation, patches of common reed and strips of scrub between the separate lagoons.No signs of the previous problems with unauthorised vehicle access and burning of cars and dumping of other rubbish.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
INSHORE SUBLITTORAL SEDIMENT - CL	Abbi Bamping	054	1007132	69.0442	0.00	12/02/2009	Favourable	Large waterbody with many islands and a convoluted shoreline. These grass covered with areas of taller herbaceous vegetation further from the waters edge. Also includes surrounding areas of uneven ungrazed grassland with taller herbaceous vegetation, patches of common reed and occasional scrub.Good numbers of birds present during the visit ? geese, teal, shoveler, pochard, lapwing etc.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	

INSHORE SUBLITTORAL SEDIMENT - CL	Abbi Bamping	056	1019619	64.6274	0.00	12/02/2009	Unfavourable - Recovering	Unit mainly uneven ungrazed grassland with taller herbaceous vegetation and patches of common reed with large amounts of scrub. Scrub removal was being carried out at the time of survey and cattle grazing had recently been introduced to part of the unit and was also being carried out at the time of survey.The main feature of the unit is the lagoons which have several islands and a convoluted shore line with emergent vegetation in places. Also recently created perimeter ditch and other permanent water bodies have good emergent vegetation and open water habitat. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	057	1007054	35.4613	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains some of which support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks. Occasional scrub along the ditches, major reprofiling of ditches was being carried out, spoil remains on site adjacent to watercourses..No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	058	1007055	32.1025	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permanent water in the ditches and drains some of which support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks. Occasional scrub along the ditches, major reprofiling of ditches was being carried out, spoil remains on site adjacent to watercourses..No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	059	1007056	56.1534	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permenant water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks. Occasional scrub along the ditches, evidence that scrub removal was being carried out.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	060	1007057	43.9137	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permenant water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional scrub.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat.	

NEUTRAL GRASSLAND - Lowland	Abbi Bamping	061	1007058	53.8745	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permenant water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional scrub.No negative indicators. Unit assessed for value as breeding and over wintering bird habitat	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	062	1007059	49.4752	0.00	12/02/2009	Favourable	Uneven area of grazed grassland with large areas of ephemeral standing water at the time of survey. More permenant water in the ditches and drains which also support emergent vegetation including common reed and sea club rush. Sward generally short with areas of taller tussocks and occasional scrub.Unit assessed for value as breeding and over wintering bird habitat. No negative indicators	
NEUTRAL GRASSLAND - Lowland	Abbi Bamping	064	1007060	19.9475	0.00	12/02/2009	Favourable	Close grazed grass bank and level strip between sea wall and main carrier.Short sward with occasional taller tussocks, water course with emergent bankside vegetation, common reed, Juncus and sea club rush.Unit assessed for value as breeding and over wintering bird habitat. No negative indicators.	
LITTORAL SEDIMENT	Abbi Bamping	100	1023905	13.3483	0.00	19/03/2009	Unfavourable - Declining	Areas of saltmarsh scattered along the coast between the mudflats and the sea wall, hence the Unfavourable declining condition due to coastal squeeze.	COASTAL - INAPPROPRIATE COASTAL MANAGEMENT,
LITTORAL SEDIMENT	Abbi Bamping	101	1023906	81.1663	0.00	12/02/2009	Unfavourable - Declining	Several small areas of saltmarsh scattered along the coast between the mudflats and the sea wall, hence the Unfavourable declining condition due to coastal squeeze	COASTAL - INAPPROPRIATE COASTAL MANAGEMENT,
LITTORAL SEDIMENT	Abbi Bamping	102	1029193	69.0856	0.00	12/02/2009	Favourable	Large areas of tidal mudflat running some of the length of this large site.Numbers of waterfowl feeding at the time of survey including teal and shoveler. Unit assessed for value as breeding and over wintering bird habitat	
LITTORAL SEDIMENT	Abbi Bamping	103	1029194	2374.244	0.00	12/02/2009	Favourable	Large areas of tidal mudflat running the majority of the length of this large site. Thousands of birds feeding at low tide at time of survey including Shelduck, Dunlin, curlew, oyster catcher and lapwing.Unit assessed for value as breeding and over wintering bird habitat	

APPENDIX 13

The Swale SPA Citation and Natura 2000 Standard Data Form

EC Directive 79/409 on the Conservation of Wild Birds:
Special Protection Area

The Swale extensions (Kent)

The Swale Special Protection Area is a wetland of international importance, comprising intertidal mudflats, shellbeaches, saltmarshes and extensive grazing marshes. It provides habitats for important assemblages of wintering waterfowl, and also supports notable breeding bird populations.

The proposed extensions to the Swale SPA include areas of intertidal mudflats and grazing marshes adjacent to the existing site and within The Swale Site of Special Scientific Interest. These areas are integral components of the complex of estuarine habitats composing the Swale.

The Swale qualifies under Article 4.2 of the EC Birds Directive as a wetland of international importance by virtue of regularly supporting over 20,000 waterfowl, with an average peak count of 57,600 birds recorded in the five winter period 1986/87 to 1990/91. This total includes internationally or nationally important wintering populations of seventeen species of migratory waterfowl. Of these, two occur in significant numbers within the proposed extensions: dark-bellied brent geese *Branta bernicla bernicla* and dunlin *Calidris alpina*. In the five winter period 1986/87 to 1990/91, the average peak counts for the Swale as a whole were 2,850 dark-bellied brent geese (1.6% of the world population, 3.1% of the British wintering population) and 13,000 dunlin (3% of the British wintering population). The mudflats of the proposed extensions have, in recent years, supported over 400 dark-bellied brent geese and 900 dunlin.

The mudflats of the proposed extensions support smaller numbers of several other species of wintering migratory waterfowl, including oystercatcher *Haematopus ostralegus*, ringed plover *Charadrius hiaticula*, grey plover *Pluvialis squatarola*, curlew *Numenius arquata* and redshank *Tringa totanus*. These species are present in internationally or nationally important numbers within the Swale as a whole.

The Swale also qualifies under Article 4.2 by virtue of regularly supporting diverse assemblages of the wintering and breeding migratory waterfowl of lowland wet grassland and other estuarine habitats.

The grazing marshes of the proposed extensions support an assemblage of wintering species typical of the grazing marshes elsewhere within the Swale, including shelduck *Tadorna tadorna*, wigeon *Anas penelope*, teal *Anas crecca* and curlew *Numenius arquata*. These species are present in internationally or nationally important numbers within the Swale as a whole.

The grazing marshes also support a typical assemblage of breeding species, including shelduck *Tadorna tadorna*, mallard *Anas platyrhynchos*, moorhen *Gallinula chloropus*, coot *Fulica atra*, lapwing *Vanellus vanellus*, redshank *Tringa totanus*, reed warbler

Acrocephalus scirpaceus and reed bunting *Emberiza schoeniclus*. Some of these species have restricted distributions in Britain because of habitat loss and degradation.

The grazing marshes of the proposed extensions also regularly support wintering, and occasionally breeding, short-eared owl *Asio flammeus* (a species listed under Annex 1 of the EC Birds Directive).

During severe winter weather elsewhere, the Swale, including those areas within the proposed extensions, can assume even greater national and international importance as a cold weather refuge. Wildfowl and waders from many other areas arrive, attracted by the relatively mild climate, compared with continental European areas, and the abundant food resources available.

The Swale SPA, including the proposed extensions, is part of the larger Thames estuary and contributes to its overall regional significance for birds in a European context.

SPA citation
LDS March 1993

NATURA 2000 – STANDARD DATA FORM

Special Protection Areas under the EC Birds Directive.

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Protection Areas (SPAs) in the United Kingdom is available from the SPA home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SPAs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK9012011**
SITENAME	**The Swale**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
A	UK9012011

1.3 Site name

The Swale

1.4 First Compilation date	1.5 Update date
1982-08	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

1.7 Site indication and designation / classification dates

Date site classified as SPA:	1982-08
National legal reference of SPA designation	Regulations 12A and 13-15 of the Conservation Habitats and Species Regulations 2010, (http://www.legislation.gov.uk/uksi/2010/490/contents/made) as amended by The Conservation of Habitats and Species (Amendment) Regulations 2011 (http://www.legislation.gov.uk/uksi/2011/625/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.839166667	51.36083333

2.2 Area [ha]:

6509.88

2.3 Marine area [%]

44.5

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ4	Kent

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site						Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		
						Min	Max				Pop.	Con.	Iso.	Glo.
B	A052	Anas crecca			w	2969	2969	i		G	B		C	
B	A051	Anas strepera			w	86	86	i		G	C		C	
B	A675	Branta bernicla bernicla			w	1961	1961	i		G	C		C	
B	A672	Calidris alpina alpina			w	12394	12394	i		G	B		C	
B	A137	Charadrius hiaticula			w	269	269	i		G	C		C	
B	A130	Haematopus ostralegus			w	3731	3731	i	P	G	C		C	
B	A160	Numenius arquata			w	1622	1622	i		G	C		C	
B	A141	Pluvialis squatarola			w	2021	2021	i	P	G	B		C	

B	A162	Tringa totanus			w	1640	1640	i		G	C		C	

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

3.3 Other important species of flora and fauna (optional)

Species					Population in the site				Motivation					
Group	CODE	Scientific Name	S	NP	Size		Unit	Cat.	Species Annex		Other categories			
					Min	Max		C|R|V|P	IV	V	A	B	C	D
B	BBA	Breeding bird assemblage												X
B	WATR	Waterfowl assemblage			65588	65588	i						X	

- **Group:** A = Amphibians, B = Birds, F = Fish, Fu = Fungi, I = Invertebrates, L = Lichens, M = Mammals, P = Plants, R = Reptiles
- **CODE:** for Birds, Annex IV and V species the code as provided in the reference portal should be used in addition to the scientific name
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Unit:** i = individuals, p = pairs or other units according to the standard list of population units and codes in accordance with Article 12 and 17 reporting, (see reference portal)
- **Cat.:** Abundance categories: C = common, R = rare, V = very rare, P = present
- **Motivation categories: IV, V:** Annex Species (Habitats Directive), **A:** National Red List data; **B:** Endemics; **C:** International Conventions; **D:** other reasons

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N03	5.0
N15	47.0
N06	2.0
N23	6.0
N02	39.0
N05	1.0

Total Habitat Cover	100

Other Site Characteristics

2 Terrestrial: Geomorphology and landscape: coastal,floodplain 3 Marine: Geology: sand,clay,shingle,mud 4 Marine: Geomorphology: estuary,intertidal sediments (including sandflat/mudflat),shingle bar,subtidal sediments (including sandbank/mudbank)

4.2 Quality and importance

ARTICLE 4.2 QUALIFICATION (79/409/EEC) Over winter the area regularly supports: Branta bernicla bernicla (Western Siberia/Western Europe) 0.7% of the population 5 year peak mean 1991/92-1995/96 Calidris alpina alpina (Northern Siberia/Europe/Western Africa) 2.3% of the population in Great Britain 5 year peak mean 1991/92-1995/96 Tringa totanus (Eastern Atlantic - wintering) 0.9% of the population 5 year peak mean 1991/92-1995/96 ARTICLE 4.2 QUALIFICATION (79/409/EEC): AN INTERNATIONALLY IMPORTANT ASSEMBLAGE OF BIRDS Over winter the area regularly supports: 65588 waterfowl (5 year peak mean 1991/92-1995/96) Including: Branta bernicla bernicla , Anas strepera , Anas crecca , Haematopus ostralegus , Charadrius hiaticula , Pluvialis squatarola , Calidris alpina alpina , Numenius arquata , Tringa totanus

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	M02		B
H	M01		B
H	G01		I
H	F02		I
H	I01		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A06		I
H	A02		I
H	D05		I
H	A04		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK01	16.1	UK04	100.0		

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [x] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX 14

European Site Conservation Objectives for The Swale SPA

European Site Conservation Objectives for The Swale Special Protection Area Site Code: UK9012011

With regard to the SPA and the individual species and/or assemblage of species for which the site has been classified (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the aims of the Wild Birds Directive, by maintaining or restoring;

- **The extent and distribution of the habitats of the qualifying features**
- **The structure and function of the habitats of the qualifying features**
- **The supporting processes on which the habitats of the qualifying features rely**
- **The population of each of the qualifying features, and,**
- **The distribution of the qualifying features within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

A046a *Branta bernicla bernicla*; Dark-bellied brent goose (Non-breeding)

A149 *Calidris alpina alpina*; Dunlin (Non-breeding)

Breeding bird assemblage

Waterbird assemblage

This is a European Marine Site

This SPA is a part of the Swale & Medway European Marine Site (EMS). These Conservation Objectives should be used in conjunction with the Conservation Advice document for the EMS. Natural England's formal Conservation Advice for European Marine Sites can be found via GOV.UK.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 (as amended) ('the Habitats Regulations'). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment' including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives, and the accompanying Supplementary Advice (where this is available), will also provide a framework to inform the management of the European Site and the prevention of deterioration of habitats and significant disturbance of its qualifying features

These Conservation Objectives are set for each bird feature for a Special Protection Area (SPA).

Where these objectives are being met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving the aims of the Wild Birds Directive.

Publication date: 21 February 2019 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

APPENDIX 15

Ramsar Information Sheet (RIS) for The Swale Ramsar Site

Information Sheet on Ramsar Wetlands (RIS)

Categories approved by Recommendation 4.7 (1990), as amended by Resolution VIII.13 of the 8th Conference of the Contracting Parties (2002) and Resolutions IX.1 Annex B, IX.6, IX.21 and IX. 22 of the 9th Conference of the Contracting Parties (2005).

Notes for compilers:

1. The RIS should be completed in accordance with the attached *Explanatory Notes and Guidelines for completing the Information Sheet on Ramsar Wetlands*. Compilers are strongly advised to read this guidance before filling in the RIS.

2. Further information and guidance in support of Ramsar site designations are provided in the *Strategic Framework for the future development of the List of Wetlands of International Importance* (Ramsar Wise Use Handbook 7, 2nd edition, as amended by COP9 Resolution IX.1 Annex B). A 3rd edition of the Handbook, incorporating these amendments, is in preparation and will be available in 2006.

3. Once completed, the RIS (and accompanying map(s)) should be submitted to the Ramsar Secretariat. Compilers should provide an electronic (MS Word) copy of the RIS and, where possible, digital copies of all maps.

1. Name and address of the compiler of this form:

FOR OFFICE USE ONLY.

DD MM YY	
Designation date	Site Reference Number

Joint Nature Conservation Committee
Monkstone House
City Road
Peterborough
Cambridgeshire PE1 1JY
UK
Telephone/Fax: +44 (0)1733 – 562 626 / +44 (0)1733 – 555 948
Email: RIS@JNCC.gov.uk

2. Date this sheet was completed/updated:

Designated: 31 August 1982

3. Country:

UK (England)

4. Name of the Ramsar site:

The Swale

5. Designation of new Ramsar site or update of existing site:

This RIS is for: Updated information on an existing Ramsar site

6. For RIS updates only, changes to the site since its designation or earlier update:

a) Site boundary and area:

** Important note: If the boundary and/or area of the designated site is being restricted/reduced, the Contracting Party should have followed the procedures established by the Conference of the Parties in the Annex to COP9 Resolution IX.6 and provided a report in line with paragraph 28 of that Annex, prior to the submission of an updated RIS.

b) Describe briefly any major changes to the ecological character of the Ramsar site, including in the application of the Criteria, since the previous RIS for the site:

7. Map of site included:

Refer to Annex III of the *Explanatory Notes and Guidelines*, for detailed guidance on provision of suitable maps, including digital maps.

a) A map of the site, with clearly delineated boundaries, is included as:

i) **hard copy** (required for inclusion of site in the Ramsar List): *yes* ✓ -or- *no* □;
ii**) an electronic format** (e.g. a JPEG or ArcView image) Yes
iii) **a GIS file providing geo-referenced site boundary vectors and attribute tables** *yes* ✓ -or- *no* □;

b) Describe briefly the type of boundary delineation applied:
e.g. the boundary is the same as an existing protected area (nature reserve, national park etc.), or follows a catchment boundary, or follows a geopolitical boundary such as a local government jurisdiction, follows physical boundaries such as roads, follows the shoreline of a waterbody, etc.

The site boundary is the same as, or falls within, an existing protected area.

For precise boundary details, please refer to paper map provided at designation

8. Geographical coordinates (latitude/longitude):

51 21 39 N 00 50 21 E

9. General location:

Include in which part of the country and which large administrative region(s), and the location of the nearest large town.

Nearest town/city: Faversham

On the north Kent of coast within the greater Thames estuary.

Administrative region: Kent

10. Elevation (average and/or max. & min.) (metres): 11. Area (hectares): 6514.71

Min.	-1
Max.	5
Mean	2

12. General overview of the site:

Provide a short paragraph giving a summary description of the principal ecological characteristics and importance of the wetland.

A complex of brackish and freshwater, floodplain grazing marsh with ditches, and intertidal saltmarsh and mudflat. These habitats together support internationally important numbers of wintering waterfowl. Rare wetland birds breed in important numbers. The saltmarsh and grazing marsh are of international importance for their diverse assemblages of wetland plants and invertebrates.

13. Ramsar Criteria:

Circle or underline each Criterion applied to the designation of the Ramsar site. See Annex II of the *Explanatory Notes and Guidelines* for the Criteria and guidelines for their application (adopted by Resolution VII.11).

2, 5, 6

14. Justification for the application of each Criterion listed in 13 above:

Provide justification for each Criterion in turn, clearly identifying to which Criterion the justification applies (see Annex II for guidance on acceptable forms of justification).

Ramsar criterion 2

The site supports nationally scarce plants and at least seven British Red data book invertebrates.

Ramsar criterion 5

Assemblages of international importance:

Species with peak counts in winter:
77501 waterfowl (5 year peak mean 1998/99-2002/2003)

Ramsar criterion 6 – species/populations occurring at levels of international importance.

Qualifying Species/populations (as identified at designation):

Species with peak counts in spring/autumn:	
Common redshank , *Tringa totanus totanus*,	1712 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Dark-bellied brent goose, *Branta bernicla bernicla*,	1633 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
Grey plover , *Pluvialis squatarola*, E Atlantic/W Africa -wintering	2098 individuals, representing an average of 3.9% of the GB population (5 year peak mean 1998/9-2002/3)

Species/populations identified subsequent to designation for possible future consideration under criterion 6.

Species with peak counts in spring/autumn:	
Ringed plover , *Charadrius hiaticula*, Europe/Northwest Africa	917 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Eurasian wigeon , *Anas penelope*, NW Europe	15296 individuals, representing an average of 1% of the population (5 year peak mean 1998/9-2002/3)
Northern pintail , *Anas acuta*, NW Europe	763 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3)
Northern shoveler , *Anas clypeata*, NW & C Europe	483 individuals, representing an average of 1.2% of the population (5 year peak mean 1998/9-2002/3)
Black-tailed godwit , *Limosa limosa islandica*, Iceland/W Europe	1504 individuals, representing an average of 4.2% of the population (5 year peak mean 1998/9-2002/3)

Contemporary data and information on waterbird trends at this site and their regional (sub-national) and national contexts can be found in the Wetland Bird Survey report, which is updated annually. See www.bto.org/survey/webs/webs-alerts-index.htm.
Details of bird species occuring at levels of National importance are given in Section 22

15. **Biogeography** (required when Criteria 1 and/or 3 and /or certain applications of Criterion 2 are applied to the designation)**:**

Name the relevant biogeographic region that includes the Ramsar site, and identify the biogeographic regionalisation system that has been applied.

a) biogeographic region:

Atlantic

b) biogeographic regionalisation scheme (include reference citation):

Council Directive 92/43/EEC

16. Physical features of the site:

Describe, as appropriate, the geology, geomorphology; origins - natural or artificial; hydrology; soil type; water quality; water depth, water permanence; fluctuations in water level; tidal variations; downstream area; general climate, etc.

Soil & geology	alluvium, clay, mud, sand, shingle
Geomorphology and landscape	coastal, floodplain, shingle bar, subtidal sediments (including sandbank/mudbank), intertidal sediments (including sandflat/mudflat), estuary
Nutrient status	eutrophic
pH	no information
Salinity	brackish / mixosaline, fresh, saline / euhaline
Soil	no information
Water permanence	usually permanent, usually seasonal / intermittent
Summary of main climatic features	Annual averages (Greenwich, 1971–2000) (www.metoffice.com/climate/uk/averages/19712000/sites/greenwich.html) Max. daily temperature: 14.8° C Min. daily temperature: 7.2° C Days of air frost: 29.1 Rainfall: 583.6 mm Hrs. of sunshine: 1461.0

General description of the Physical Features:

The Swale is an estuarine area that separates the Isle of Sheppey from the Kent mainland. To the west it adjoins the Medway Estuary. It is a complex of brackish and freshwater, floodplain grazing marsh with ditches, and intertidal saltmarshes and mudflats. The intertidal flats are extensive, especially in the east of the site. Locally there are large mussel *Mytilus edulis* beds formed on harder areas of substrate. There is much diversity both in the salinity of the dykes (which range from fresh to strongly brackish) and in the topography of the fields.

17. Physical features of the catchment area:

Describe the surface area, general geology and geomorphological features, general soil types, general land use, and climate (including climate type).

The Swale is an estuarine area that separates the Isle of Sheppey from the Kent mainland. To the west it adjoins the Medway Estuary. It is a complex of brackish and freshwater, floodplain grazing marsh with ditches, and intertidal saltmarshes and mudflats. The intertidal flats are extensive, especially in the east of the site.

18. Hydrological values:

Describe the functions and values of the wetland in groundwater recharge, flood control, sediment trapping, shoreline stabilization, etc.

Shoreline stabilisation and dissipation of erosive forces, Flood water storage / desynchronisation of flood peaks, Maintenance of water quality (removal of nutrients)

19. Wetland types:

Human-made wetland, Marine/coastal wetland

Code	Name	% Area
4	Seasonally flooded agricultural land	47.7
G	Tidal flats	38
H	Salt marshes	5.8
Other	Other	5.7
N	Rivers / streams / creeks: seasonal / intermittent	1.8
E	Sand / shingle shores (including dune systems)	1

20. General ecological features:

Provide further description, as appropriate, of the main habitats, vegetation types, plant and animal communities present in the Ramsar site, and the ecosystem services of the site and the benefits derived from them.

The intertidal flats are of fine, silty sediment. The saltmarsh is species rich, for example containing all southern species of *Puccinellia* and most *Salicornia* species. The grazing marsh grassland is mesotrophic and generally species-poor. It does, however, contain scattered rarities, mostly annuals characteristic of bare ground. Where the grassland is seasonally inundated and the marshes are brackish the plant communities are intermediate between those of mesotrophic grassland and those of saltmarsh. The grazing marsh ditches contain a range of flora of brackish and fresh water. The aquatic flora is a mosaic of successional stages resulting from periodic clearance of drainage channels. The dominant emergent plants are *Phragmites australis* and *Bolboschoenus maritimus*.

Ecosystem services

21. Noteworthy flora:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Nationally important species occurring on the site.

Higher Plants.

The site holds several nationally scarce plants, including: *Chenopodium chenopodioides, Peucedanum officinale, Bupleurum tenuissimum, Spartina maritima, Inula crithmoides, Carex divisa, Trifolium squamosum, Hordeum marinum*.

22. Noteworthy fauna:

Provide additional information on particular species and why they are noteworthy (expanding as necessary on information provided in **12**. Justification for the application of the Criteria) indicating, e.g. which species/communities are unique, rare, endangered or biogeographically important, etc., including count data. *Do not include here taxonomic lists of species present – these may be supplied as supplementary information to the RIS.*

Birds

Species currently occurring at levels of national importance:

Species regularly supported during the breeding season:

Mediterranean gull , *Larus melanocephalus*, Europe	13 apparently occupied nests, representing an average of 12% of the GB population (Seabird 2000 Census)

Black-headed gull , *Larus ridibundus*, N & C Europe	3835 apparently occupied nests, representing an average of 2.9% of the GB population (Seabird 2000 Census)
Little tern , *Sterna albifrons albifrons*, W Europe	20 apparently occupied nests, representing an average of 1% of the GB population (Seabird 2000 Census)
Species with peak counts in spring/autumn:	
Little egret , *Egretta garzetta*, West Mediterranean	29 individuals, representing an average of 1.7% of the GB population (5 year peak mean 1998/9-2002/3)
Whimbrel , *Numenius phaeopus*, Europe/Western Africa	98 individuals, representing an average of 3.2% of the GB population (5 year peak mean 1998/9-2002/3 - spring peak)
Eurasian curlew , *Numenius arquata arquata*, N. a. arquata Europe (breeding)	1779 individuals, representing an average of 1.2% of the GB population (5 year peak mean 1998/9-2002/3)
Spotted redshank , *Tringa erythropus*, Europe/W Africa	60 individuals, representing an average of 44.1% of the GB population (5 year peak mean 1998/9-2002/3)
Common greenshank , *Tringa nebularia*, Europe/W Africa	49 individuals, representing an average of 8.2% of the GB population (5 year peak mean 1998/9-2002/3)
Species with peak counts in winter:	
Little grebe , *Tachybaptus ruficollis ruficollis*, Europe to E Urals, NW Africa	147 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
Greater white-fronted goose , *Anser albifrons albifrons*, NW Europe	973 individuals, representing an average of 16.8% of the GB population (5 year peak mean for 1996/7-2000/01)
Common shelduck , *Tadorna tadorna*, NW Europe	2437 individuals, representing an average of 3.1% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian teal , *Anas crecca*, NW Europe	3610 individuals, representing an average of 1.8% of the GB population (5 year peak mean 1998/9-2002/3)
Eurasian oystercatcher , *Haematopus ostralegus ostralegus*, Europe & NW Africa -wintering	4609 individuals, representing an average of 1.4% of the GB population (5 year peak mean 1998/9-2002/3)
Pied avocet , *Recurvirostra avosetta*, Europe/Northwest Africa	380 individuals, representing an average of 11.1% of the GB population (5 year peak mean 1998/9-2002/3)
European golden plover , *Pluvialis apricaria apricaria*, P. a. altifrons Iceland & Faroes/E Atlantic	7522 individuals, representing an average of 3% of the GB population (5 year peak mean 1998/9-2002/3)
Northern lapwing , *Vanellus vanellus*, Europe - breeding	15129 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)
Red knot , *Calidris canutus islandica*, W & Southern Africa (wintering)	3004 individuals, representing an average of 1% of the GB population (5 year peak mean 1998/9-2002/3)

Dunlin , *Calidris alpina alpina*, W Siberia/W Europe	9017 individuals, representing an average of 1.6% of the GB population (5 year peak mean 1998/9-2002/3)
Ruff , *Philomachus pugnax*, Europe/W Africa	53 individuals, representing an average of 7.5% of the GB population (5 year peak mean 1998/9-2002/3)

Species Information

Nationally important species occurring on the site.

Invertebrates.

Bagous cylindrus, Erioptera bivittata, Lejops vittata, Peocilobothris ducalis, Philonthus punctus, Micronecta minutissima, Malchius vulneratus, Campsicnemus majus, Elachiptera rufifrons, Myopites eximia.

23. Social and cultural values:

Describe if the site has any general social and/or cultural values e.g. fisheries production, forestry, religious importance, archaeological sites, social relations with the wetland, etc. Distinguish between historical/archaeological/religious significance and current socio-economic values.

Aesthetic
Archaeological/historical site
Environmental education/ interpretation
Fisheries production
Livestock grazing
Non-consumptive recreation
Scientific research
Sport fishing
Sport hunting
Tourism
Traditional cultural
Transportation/navigation

b) Is the site considered of international importance for holding, in addition to relevant ecological values, examples of significant cultural values, whether material or non-material, linked to its origin, conservation and/or ecological functioning? No

If Yes, describe this importance under one or more of the following categories:

i) sites which provide a model of wetland wise use, demonstrating the application of traditional knowledge and methods of management and use that maintain the ecological character of the wetland:

ii) sites which have exceptional cultural traditions or records of former civilizations that have influenced the ecological character of the wetland:

iii) sites where the ecological character of the wetland depends on the interaction with local communities or indigenous peoples:

iv) sites where relevant non-material values such as sacred sites are present and their existence is strongly linked with the maintenance of the ecological character of the wetland:

24. Land tenure/ownership:

Ownership category	On-site	Off-site

Non-governmental organisation (NGO)	+	
Local authority, municipality etc.	+	
National/Crown Estate	+	
Private	+	

25. Current land (including water) use:

Activity	On-site	Off-site
Nature conservation	+	
Tourism	+	
Recreation	+	
Current scientific research	+	
Fishing: commercial	+	
Fishing: recreational/sport	+	
Marine/saltwater aquaculture	+	
Gathering of shellfish	+	
Bait collection	+	
Arable agriculture (unspecified)		+
Livestock watering hole/pond	+	
Grazing (unspecified)	+	
Hay meadows	+	
Hunting: commercial	+	
Hunting: recreational/sport	+	
Industrial water supply		+
Industry		+
Sewage treatment/disposal		+
Harbour/port	+	+
Flood control	+	
Transport route	+	
Non-urbanised settlements	+	

26. Factors (past, present or potential) adversely affecting the site's ecological character, including changes in land (including water) use and development projects:

Explanation of reporting category:

1. *Those factors that are still operating, but it is unclear if they are under control, as there is a lag in showing the management or regulatory regime to be successful.*
2. *Those factors that are not currently being managed, or where the regulatory regime appears to have been ineffective so far.*

NA = Not Applicable because no factors have been reported.

Adverse Factor Category	Reporting Category	Description of the problem (Newly reported Factors only)	On-Site	Off-Site	Major Impact?
Erosion	1		+		+

For category 2 factors only. What measures have been taken / are planned / regulatory processes invoked, to mitigate the effect of these factors?
Is the site subject to adverse ecological change? NO

27. Conservation measures taken:

List national category and legal status of protected areas, including boundary relationships with the Ramsar site; management practices; whether an officially approved management plan exists and whether it is being implemented.

Conservation measure	On-site	Off-site
Site/ Area of Special Scientific Interest (SSSI/ASSI)	+	
National Nature Reserve (NNR)	+	
Special Protection Area (SPA)	+	
Land owned by a non-governmental organisation for nature conservation	+	
Management agreement	+	
Site management statement/plan implemented	+	
Environmentally Sensitive Area (ESA)	+	+

b) Describe any other current management practices:
The management of Ramsar sites in the UK is determined by either a formal management plan or through other management planning processes, and is overseen by the relevant statutory conservation agency. Details of the precise management practises are given in these documents.

28. Conservation measures proposed but not yet implemented:

e.g. management plan in preparation; official proposal as a legally protected area, etc.

No information available

29. Current scientific research and facilities:

e.g. details of current research projects, including biodiversity monitoring; existence of a field research station, etc.

Fauna.
Numbers of migratory and wintering wildfowl and waders are monitored annually as part of the national Wetland Birds Survey (WeBS) organised by the British Trust for Ornithology, Wildfowl & Wetlands Trust, the Royal Society for the Protection of Birds and the Joint Nature Conservation Committee.

Habitat.
ENSIS monitoring.
Hydrological monitoring of the grazing marsh.
MNCR Littoral and Sublittoral survey.

30. Current communications, education and public awareness (CEPA) activities related to or benefiting the site:

e.g. visitor centre, observation hides and nature trails, information booklets, facilities for school visits, etc.

Swale NNR and Elmley NNR (both RSPB and Elmley Conservation Trust) all provide viewing facilities.

31. Current recreation and tourism:

State if the wetland is used for recreation/tourism; indicate type(s) and their frequency/intensity.

Activities, Facilities provided and Seasonality.

Yachting, jet-skiing and water-skiing mostly in the summer, bird watching throughout the year and angling and wildfowling during their legally permitted seasons. Disturbance from these activities is a current issue but it is addressed through negotiation relating to activities consented within the SSSI and information dissemination. There is no clear evidence of damage from any of these activities.

32. Jurisdiction:

Include territorial, e.g. state/region, and functional/sectoral, e.g. Dept. of Agriculture/Dept. of Environment, etc.

Head, Natura 2000 and Ramsar Team, Department for Environment, Food and Rural Affairs, European Wildlife Division, Zone 1/07, Temple Quay House, 2 The Square, Temple Quay, Bristol, BS1 6EB

33. Management authority:

Provide the name and address of the local office(s) of the agency(ies) or organisation(s) directly responsible for managing the wetland. Wherever possible provide also the title and/or name of the person or persons in this office with responsibility for the wetland.

Site Designations Manager, English Nature, Sites and Surveillance Team, Northminster House, Northminster Road, Peterborough, PE1 1UA, UK

34. Bibliographical references:

Scientific/technical references only. If biogeographic regionalisation scheme applied (see **15** above), list full reference citation for the scheme.

Site-relevant references

Anon. (2002) *North Kent Coastal Habitat Management Plan: Executive summary*. English Nature, Peterborough (Living with the Sea LIFE Project) www.english-nature.org.uk/livingwiththesea/project_details/good_practice_guide/HabitatCRR/ENRestore/CHaMPs/NorthKent/NorthKentCHaMP.pdf

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Stroud, DA, Chambers, D, Cook, S, Buxton, N, Fraser, B, Clement, P, Lewis, P, McLean, I, Baker, H & Whitehead, S (eds.) (2001) *The UK SPA network: its scope and content*. Joint Nature Conservation Committee, Peterborough (3 vols.) www.jncc.gov.uk/UKSPA/default.htm

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Please return to: **Ramsar Secretariat, Rue Mauverney 28, CH-1196 Gland, Switzerland**
Telephone**: +41 22 999 0170** • Fax: **+41 22 999 0169** • email: **ramsar@ramsar.org**

APPENDIX 16

The Swale SSSI Citation

COUNTY: KENT **SITE NAME:** THE SWALE

DISTRICT: CANTERBURY/SWALE

Status: Site of. Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 as amended. Part of the site has been designated a National Nature Reserve under Section 16 of the National Parks and Access to the Countryside Act 1949 and part is a Local Nature Reserve under Section 21 of the National Park and Access to the Countryside Act 1949.

Local Planning Authorities: Canterbury City Council, Swale Borough Council

National Grid Reference: TR 000670 **Area:** 6568.45 (ha.) 16,230.58 (ac.)

Ordnance Survey Sheet 1:50,000: 178, 179 **1:10,000:** TQ 96, TQ 97 SE & SW, TR 06, TR 07 SE, SW, TR 16 NW

Date Notified (Under 1949 Act): 1968 **Date of Last Revision:** 1981

Date Notified (Under 1981 Act): 1984 **Date of Last Revision:** 1990

Other Information:
Parts of the site are listed in '*A Nature Conservation Review*' D A Ratcliffe (ed) CUP 1979. The Royal Society for the Protection of Birds manage part of the site as a nature reserve. The site has been extended to include Coldharbour and Ridham Marshes, and an additional part of the Oaze. Most of the site is also designated under the Convention on Wetlands of International Importance Especially as Waterfowl Habitat (Ramsar Convention) and as a Special Protection Area under European Community Directive 79/409 on the Conservation of Wild Birds.

Reasons for Notification:
The Swale includes the largest remaining areas of freshwater grazing marsh in Kent and is representative of the estuarine habitats found on the north Kent coast. The habitats comprise chiefly mudflats, saltmarsh, and freshwater grazing marsh, the latter being intersected by extensive dykes and fleets. The area is particularly notable for the internationally important numbers of wintering and passage wildfowl and waders, and there are also important breeding populations of a number of bird species. Associated wit the various constituent habitats of the site are outstanding assemblages of plants and invertebrates.

The mudflats of the Swale are extremely rich in invertebrates, over 350 species having been recorded. Some of these, such as the polychaete worm *Clymenella torquata* are known from nowhere else in Britain, while other more widespread species are present at high densities and provide food for the huge numbers of birds, especially waders, which use the Swale.

The saltmarshes are among the richest for plant life in Britain with for example particularly good representation of the saltmarsh-grasses *Puccinellia* and the glassworts *Salicornia*. Other abundant species include sea aster *Aster tripolium*, sea lavender *Limonium vulgare*, sea purslane *Halimione portulacoides* and common cord-grass *Spartina anglica* while less-common plants include small cord-grass *Spartina maritima** and golden samphire Inula *crithmoides**. As well as providing feeding and roosting places for many birds, the saltmarshes are of entomological interest; for example, this is the habitat of the scarce ground lackey moth *Malacostoma castrensis**.

Also on the seaward side of the sea walls are smaller areas of other habitats. The harder substrates of shingle below high water mark in places support large mussel beds, which in turn attract different birds from those of the mudflats, such as turnstone *Arenaria interpres*. There are several areas of shell, or shell sand beach, notably at Shellness on Sheppey and at Castle Coote west of Seasalter.

These have an interesting calcareous flora with plants characteristic of both sand ant shingle beaches: sea kale *Crambe maritima**, yellow horned-poppy *Glaucium flavum*, marram grass *Ammophila arenaria* and sea rocket *Cakile maritima* occur for example. Where undisturbed these beaches attract breeding ringed plover *Charidrius hiaticula* and little tern *Sterna albifrons*.

The grazing marsh complexes, including seawalls, counterwalls, fleets, dykes, temporary runnels, etc. provide suitable conditions for a wide range of plants and animals. The grassland habitats range from the damp muddy areas near the dykes, where characteristic plants include divided sedge *Carex divisa** and small goosefoot *Chenopodium botryodes** to the dry seawalls and counterwalls which support several less-common in addition to many widespread plants. These less-common plants include the specially-protected hogs fennel *Peucedanum officinale*** and least lettuce *Lactuca saligna***, slender hare's-ear *Bupleurum tenuissimum**, sea clover *Trifolium squamosum** and sea barley *Hordeum marinum**, all of which are more abundant in the Thames estuary than elsewhere in Britain. The more level grassland is dominated by a variety of grasses including foxtails *Alopecuris*, bents *Agrostis*, rye-grass *Lolium* and fescues *Festuca* with various herbs such as clovers *Trifolium*, and buttercups *Ranunculus* also present.

The flora of the dykes and fleets varies according to the salinity. Those nearest the sea tend to be most brackish, and generally have sea club-rush *Scirpus maritimus*, common reed *Phragmites australis* and fennel pondweed *Potamogeton pectinatus* as the most abundant species. In the fresher water further inland there is a greater variety of species and plants such as branched bur-reed *Sparganium erectum* and reed-mace *Typha latifolia* may become dominant. Plants associated with the dykes include beaked tasselweed *Ruppia maritima* and soft hornwort *Ceratophyllum submersum**. There is also a good invertebrate community with beetles, dragon and damsel-flies, and flies especially well represented.

Other less extensive habitats in the Swale include water-filled disused clay-pits, and small patches of scrub and woodland. These provide additional variety and interest to the site, and in some cases also support uncommon plants or animals.

The bird interest of the Swale is centred on the large numbers of waders and wildfowl which use the area in winter, and on autumn and spring migrations. Several species: wigeon *Anas penelope*, teal *Anas-crecca* and grey plover *Pluvialis squatarola* regularly overwinter in numbers of international importance+. Others, including shoveler *Anas clypeata*, knot *Caladris canutus*, dunlin *Caladris alpina* and spotted redshank *Tringa erythropus* are regularly present in winter in nationally significant numbers+.

Many of the birds use more than one habitat, some for example feed on the mudflats at low tide and then move up to roost on the saltmarsh or on fields inland of the sea wall.

The commoner breeding dry-land birds include skylark *Alauda arvensis*, meadow pipit *Anthus pratensis* and yellow wagtail *Motacilla flava*, and among the wetland birds mallard *Anas platyrhynchos*, shelduck *Tadorna tadorna*, coot *Fulica atra*, moorhen *Gallinula chloropus*, lapwing *Vanellus vanellus* and redshank *Tringa totanus*. Scarcer breeding birds include teal *Anas crecca*, gadwall *Anas strepera*, *Anas clypeata* and pochard *Athyia ferina*. Garganey *Anas quercedula*, pintail *Anas acuta*, ruff *Philomachus pugnax* and black-tailed godwit *Limosa limosa* have bred, or attempted to do so in recent years.

+ *Wildfowl and Wader Counts* 1987--88, D G Salmon et al, Wildfowl Trust 1988.

* Species regarded as 'scarce' in Britain (recorded from 16--100 of the 10 x 10km squares in Britain).

** Species recorded as 'rare' in Britain (recorded from 1--15 10 x 10km squares) and listed in *British Red Data Books: 1. vascular Plants*, 2nd Ed F H Perring & L Farrell, RSNC 1983.

APPENDIX 17

The Swale SSSI Condition Assessment (May 2019)

Report generated on: 01 May 2019

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment	Adverse Condition Reasons
The Swale SSSI - KENT (CANTERBURY, SWALE)									
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	001	1017360	687.205	686.08	27/01/2009	Favourable	The condition of the grassland was considered to be very good for most of the key breeding bird species. No indications of any management problems during the breeding period were noted. Site visit in January confirmed that good conditions are present for wintering birds.Comments on individual attributes:Habitat extent ? there were no indications of reduction in extent of key habitats supporting the breeding bird or wintering bird assemblage.Breeding bird assemblage diversity ? there are no indications of a reduction in diversity; 42 species recorded as breeding in 2008 in this unit.Aggregation of rare breeding birds- figures indicate that the unit contributes significantly to overall numbers of key breeding species for which the site is of particular importance:Confirmed numbers of breeding pairs recorded in unit 1:Pochard 24Shoveler 13Gadwall 6Avocet 9This indicates that the site meets the target for pochard and gadwall based on these figures, and that the unit contributes significantly towards the targets for shoveler and avocet. Overall habitat conditions: the habitat is generally regarded as being in very good condition for the breeding bird assemblage. Works have been undertaken in recent years to improve habitat quality and extend the area of habitat of high value for breeding birds. The grassland is in very good condition with respect to suitability for wintering birds and large aggregations of birds were present during visit.Graham Steven visited the site	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	002	1017361	217.5789	217.58	04/03/2009	Favourable	Only the suitability of the grassland for the wintering and breeding bird assemblages was assessed during this visit. The condition of the grassland is excellent. No indications of any management problems were noted. Comments on individual attributes:Habitat extent ? there were no indications of reduction in extent of key habitats supporting the breeding bird or wintering bird assemblages.Overall habitat condition: the habitat is in very good condition for the breeding and wintering bird assemblages. The sward is short and well grazed with frequent patches of shallow open water and there are areas of taller vegetation alongside ditches providing cover. There are also patches of bare mud in places suitable for feeding. Large aggregations of birds were present during visit.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	003	1017362	129.0539	127.22	26/01/2009	Favourable	The unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. Larger mounds of soil possibly from excavation of some of the bigger water bodies are supporting rabbits and there are a lot of anthills on the dryer ground. The sward was short with taller tussocks and a lot of standing shallow water at time of survey. Birds were present in large numbers throughout the unit. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but reeds and rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing. Hen harrier seen at the time of survey.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	007	1006199	28.0764	0.00	26/01/2009	Favourable	The unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward showed signs of grazing with some short areas and taller tussocks with plenty of standing shallow water at time of survey. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. Reeds and rushes are present, at least as marginal vegetation of the more permanent water bodies, providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing. However the unit is on the margins of the site with various predator perches such as power lines and road infrastructure including a rather large bridge.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	008	1023899	20.9767	0.00	26/01/2009	Favourable	e unit mostly supports low-lying semi-improved grassland and is generally drier grassland than most of the site. There is evidence of recent cattle grazing and the sward is generally short with tussocks and taller vegetation scattered throughout. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The low-lying grassland is fairly uniform but there are occasional patches of open shallow water and some permanent pools. Some of these have reed margins and there are occasional patches of rushes providing structural diversity. Areas of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	009	1006201	97.861	0.68	26/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward showed signs of grazing with some short areas and taller tussocks with plenty of standing shallow water at time of survey. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. Reeds and rushes are present providing cover and structural diversity. Patches of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
STANDING OPEN WATER AND CANALS	PAUL HYDE	010	1006277	69.2045	0.00	28/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	012	1017367	83.5826	0.00	28/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	013	1017368	14.8825	0.00	26/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was being grazed by sheep at the time of survey with plenty of standing shallow water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. Reeds and rushes are present as marginal vegetation of the more permanent water bodies and in occasional larger stands providing cover and structural diversity. Patches of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for hunting raptors as reported by a local at the time.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	014	1017372	39.9205	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland. The sward was short and had a lot of standing shallow water at time of survey. Lapwing were noted in the compartment. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are occasional and there is cover provided by areas of short reed alongside many of the ditches. Rotational management of the ditches has been carried out. Patches of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing. Graham steven visited.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	016	1017377	67.4857	0.00	28/01/2009	Favourable	e unit supports low-lying semi-improved grassland, including extensive areas of short grazed damp turf dominated by fescues and creeping bent with perennial rye-grass, meadow barley, creeping buttercup and clovers, along with areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey.In addition, ditches within the site are in good condition, the margins supporting common reed, sometimes in dense patches, along with sea club-rush and smaller amounts of bulrush.During the survey there were no indications of management problems or damage, and the site is maintained as favourable for the wintering bird assemblage.Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall, there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	017	1017374	44.4301	0.00	27/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	018	1017380	52.295	0.00	27/01/2009	Favourable	Two of the fields are mostly submerged in standing water and dominated by Scirpus maritimus, reflecting the brackish influence. The two southern most fields are grazed by horses and sheep, with a sward which appears to be slightly tussocky but it was difficult to see from a distance. There are some small areas of concrete hard standing in the western fields, but this was probably there prior to the SSSI notification. The north western field adjacent to the saxon shore way appears to have the same slightly tussocky sward structure as the other fields but very little standing water visible. (managed by sheep grazing). Part of this field is dominated by wet scrub but this adds a little diversity to the grazing marsh habitat.Overall the sward structure and areas of standing water make it suitable for use by wintering birds.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	019	1017381	24.8625	0.00	04/03/2009	Favourable	The unit supports low-lying semi-improved grassland, including a mix of short grassland and taller areas with tussocky grasses and rushes, with patches of shallow open water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes: Grassland extent ? there were no indications of loss of grassland. Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall, the unit supports a suitable range of features present to support wintering birds.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	020	1006208	53.107	0.00	26/01/2009	Favourable	This unit is a thin strip of semi-improved grassland either side of a water course (>20m wide) including several creeks and remnant features of reclaimed saltmarsh.The water course has been engineered in the past, probably to aid flow, and the spoil has been used to create parallel flood defences on either side restricting the areas of semi natural habitat to the current thin strip. Also providing impeded drainage and associated temporary open water at intervals along its course.Sheep grazed at the time of survey the grass is short in places interspersed with taller tussocks and areas of taller vegetation. Patches of reeds and rushes occur in wetter areas and also border the water courses.Good feeding, resting and possibly nesting habitat for a number of wetland bird species and supporting large numbers of waterfowl at the time of survey.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	021	1006209	18.77	0.00	26/01/2009	Favourable	This unit is a thin strip of semi-improved grassland either side of a water course less wide than in unit 20 (10m wide).The water course has been engineered in the past, probably to aid flow, and the spoil has been used to create parallel flood defences on either side restricting the areas of semi natural habitat to the current thin strip. Also providing impeded drainage and associated temporary open water at intervals along its course.Cattle grazed and at least one area topped the grass is short in places interspersed with taller tussocks and areas of taller vegetation. Patches of reeds and rushes occur in wetter areas and also border the water courses.Is an area known for hunting raptors, supporting good numbers of waterfowl at the time of survey.	
FEN, MARSH AND SWAMP - Lowland	PAUL HYDE	022	1017398	19.3375	0.00	26/01/2009	Favourable	This unit is a thin strip of semi-improved grassland either side of a water course less wide than in unit 20 (<10m wide).The water course has been engineered in the past, probably to aid flow, and the spoil has been used to create parallel flood defences on either side restricting the areas of semi natural habitat to the current thin strip. Also providing impeded drainage and associated temporary open water at intervals along its course.Some areas cut but not grazed prior to the survey the grass is mainly taller tussocks with areas of taller vegetation. Patches of reeds and rushes occur in wetter areas and also border the water courses.Is an area known for hunting raptors, supporting good numbers of waterfowl at the time of survey.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	023	1017382	48.3767	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was short and had a lot of standing shallow water at time of survey. Birds were present in the compartment. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing. Graham Steven visited.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	031	1017392	53.45	0.00	01/05/2014	Favourable	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	032	1017387	61.6919	0.00	01/05/2014	Unfavourable - No change	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	AGRICULTURE - OVERGRAZING,AGRICULTURE - UNDERGRAZING,LACK OF CORRECTIVE WORKS - INAPPROPRIATE DITCH MANAGEMENT,LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,PLANNING PERMISSION - PLANNING PERMISSION - GENERAL,PUBLIC ACCESS/DISTURBANCE - PUBLIC ACCESS/DISTURBANCE,VEHICLES - VEHICLES - ILLICIT,VEHICLES - VEHICLES - OTHER,
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	033	1017388	59.2265	0.00	01/05/2014	Unfavourable - No change	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist." Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present species richness	AGRICULTURE - UNDERGRAZING,LACK OF CORRECTIVE WORKS - INAPPROPRIATE DITCH MANAGEMENT,LACK OF CORRECTIVE WORKS - INAPPROPRIATE SCRUB CONTROL,
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	034	1028990	14.5809	0.00	27/01/2009	Favourable	The unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh with plenty of standing shallow water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. Reeds and rushes are present as marginal vegetation of the more permanent water bodies and in occasional larger stands providing cover and structural diversity. Overall there appears to be a suitable range of features present to support wintering birds.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	035	1006216	53.4549	0.00	27/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was being grazed by cattle at the time of survey with plenty of standing shallow water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. Reeds and rushes are present as marginal vegetation of the more permanent water bodies and in occasional larger stands providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	036	1017364	50.2203	0.00	27/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh, with plenty of standing shallow water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. Reeds and rushes are present as marginal vegetation of the more permanent water bodies and in occasional larger stands providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	037	1017365	41.2128	0.00	27/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh, with plenty of standing shallow water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. Reeds and rushes are present as marginal vegetation of the more permanent water bodies and in occasional larger stands providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	038	1006220	43.0841	29.18	26/10/2010	Favourable	This is an important part of the Swale with extensive areas of wet grassland, salt-marsh and mudflat supporting breeding waders and wintering wildfowl. Current management by hay cutting and cattle grazing is appropriate to maintain the grassland in suitable condition for birds. There is no indication that the extent of saltmarsh and mudflat is declining and coastal processes are able to proceed naturally. The unit is managed in two compartments. The larger southern section is managed by the RSPB as part of the Elmley National Nature Reserve and is managed with the objective of providing ideal conditions for breeding waders and over-wintering waders and wildfowl. The smaller northern section is managed by grazing, with a hay crop removed from the area next to the seawall in summer. In winter, this area becomes waterlogged providing good conditions for feeding birds. Data indicate that bird numbers in this part of the site are meeting targets and that the site is in favourable condition.	
STANDING OPEN WATER AND CANALS	PAUL HYDE	040	1006278	22.0616	0.00	28/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	041	1006221	44.6191	0.00	27/01/2009	Favourable	This is a very well managed Kent Wildlife Trust nature reserve, where great efforts have been made over the years to raise water levels and create areas of standing water habitat for wetland birds.The site has a mixture of tussocky pasture, areas of standing water, ditches and reedbed. Many wetland birds were seen on the site. The site was only observed from the saxon shore way with binoculars and not walked over.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	043	1017383	63.8379	0.00	27/01/2009	Favourable	The unit supports low-lying semi-improved grassland, recently grazed by cattle, including extensive areas of short grazed damp turf dominated by fescues and creeping bent with perennial rye-grass, meadow barley, creeping buttercup and clovers, along with areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey.In addition, the manmade channel in the east of the site along with ditches in good condition across the site support common reed, sometimes in dense patches, along with sea club-rush and smaller amounts of bulrush. Birds were present in the compartment.Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	047	1017394	75.2081	0.00	01/05/2014	Favourable	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	048	1017389	85.1964	0.00	01/05/2014	Favourable	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	049	1017384	28.8632	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland, including an excellent mosaic of short grazed damp turf dominated by fescues and creeping bent with perennial rye-grass, meadow barley, creeping buttercup and clovers, along with areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey. Common reeds occur relatively densely in places along the ditches across the site. Birds were using the site during the time of survey.Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	051	1017373	99.7246	0.00	27/01/2009	Favourable		

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	052	1017376	46.1922	0.00	27/01/2009	Favourable	The unit supports low-lying semi-improved grassland, including extensive areas of short grazed damp turf dominated by fescues and creeping bent with perennial rye-grass, meadow barley, creeping buttercup and clovers, along with areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey.In addition, ditches within the site are in good condition, the margins supporting common reed, sometimes in dense patches, along with sea club-rush and smaller amounts of bulrush. Lengths of the ditches have been recently cut back particularly within the southern part of the unit as part of on-going low-level maintenance, providing a range of successional stages along the ditches across the unit.Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage.Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall, there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	054	1006231	54.9196	0.26	27/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was being grazed by sheep at the time of survey with plenty of standing shallow water. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. Reeds and rushes are present as marginal vegetation of the more permanent water bodies and in occasional larger stands providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	055	1017378	35.8273	0.00	27/01/2009	Favourable	e unit supports low-lying semi-improved grassland, including extensive areas of short grazed damp turf dominated by fescues and creeping bent with perennial rye-grass, meadow barley, creeping buttercup and clovers, along with areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey.In addition, ditches within the site are in good condition, the margins supporting common reed, sometimes in dense patches, along with sea club-rush and smaller amounts of bulrush.During the survey there were no indications of management problems or damage, and the site is maintained as favourable for the wintering bird assemblage.Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall, there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	056	1017386	43.0944	0.00	01/05/2014	Favourable	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	057	1006234	126.5718	121.12	27/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was short and had a lot of standing shallow water at time of survey. Thousands of birds were present at the time of survey. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there are a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	058	1017379	53.1131	0.00	27/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	059	1017370	39.1768	0.00	27/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	060	1017371	37.9091	0.00	28/01/2009	Favourable	e unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was short and had a lot of standing shallow water at time of survey. Hundreds of waterfowl were present at the time of survey and a hen harrier was seen hunting. Current management (cattle grazing) is appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there are a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	061	1017375	37.3142	0.00	04/03/2009	Favourable	e unit supports low-lying semi-improved grassland, including extensive areas of short grazed damp turf with scattered patches of shallow water. There are also areas of tussocky grasses and rushes adding to the variation in structure. The ditches appear to be in good condition. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes: Grassland extent ? there were no indications of loss of grassland. Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall, there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	062	1017390	10.1022	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland, grazed bv sheep, including extensive areas of short grazed damp turf, areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey. Birds were seen using the site at the time of survey, including curlew and lapwing.Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	063	1017385	5.9853	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland, including extensive areas of short grazed damp turf, areas of tussocky grasses and rushes adding to the variation structure, and occasional patches of standing shallow water at time of survey.Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	064	1017396	45.1083	0.00	01/05/2014	Favourable	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	065	1017395	11.2262	0.00	01/05/2014	Favourable	Specialist Survey: "AQUATIC INVERTEBRATE SURVEY OF THE SEASALTER LEVELS, WHITSTABLE, KENT. MAY and JULY 2013. Report to Natural England. Final: May 2014. Andy Godfrey, Invertebrate Ecologist."Summary taken from report, with SSSI Unit Numbers added in CAPITAL LETTERS:GENERAL RESULTS OF AQUATIC INVERTEBRATE SURVEY:Ditches on the RSPB reserve (SSSI UNIT 47) generally had the highest species richness in May 2013 with a maximum of 36 and an average of 27.5. The only exception was Ditch 22 on Denley Hill (SSSI UNIT 48) which had a score of 32 which was by far the highest scoring west of the railway line. The Leisure Plots (SSSI UNITS 32 AND PARTS OF UNITS 33 AND 56) and Graveney Marshes (NORTH-WEST = SSSI UNITS 48, 56, 33) are generally characterised by relatively low species richness. The latter may be explained by reed encroachment in the ditches, brackish ditches and lack of sympathetic habitat management. In July 2013, the RSPB ditches (SSSI UNIT 47) again scored highly although one ditch from Graveney Marshes was also high scoring (Ditch 17) with a score of 36. This ditch had the lowest species richness (6) in May 2013 – some of these differences may be explained by the fact that the May sample was taken amongst reeds whilst the July sample was taken from an open section. One ditch on the Leisure Plots (Ditch 7) (IN SSSI UNIT 32) in July 2013 was also reasonably high scoring. As with May, the Leisure Plots and Graveney Marshes produced the majority of the lower scoring ditches. Tables 5 and 6 also present	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	067	1006244	5.9578	0.00	28/01/2009	Favourable	e unit mostly supports low-lying semi-improved grassland and is, in places, drier grassland than most of the site. There is evidence of recent grazing and the sward is generally short with tussocks and taller vegetation scattered throughout. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland, although unit seems to include the several cottages and a farm yard.Sward structure ? The low-lying grassland is fairly uniform but there are occasional patches of open shallow water and some permanent pools. Some of these have reed margins and there are occasional patches of rushes providing structural diversity. Areas of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	068	1006245	44.2367	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward showed signs of grazing with some short areas and taller tussocks with plenty of standing shallow water at time of survey. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. Reeds and rushes are present, at least as marginal vegetation of the more permanent water bodies, providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there appears to be a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing. However the unit is on the margins of the site with various predator perches such as power lines and road infrastructure including a rather large bridge.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	069	1006246	13.1085	0.00	28/01/2009	Favourable	The unit supports low-lying semi-improved grassland some of which has the microtopography (`lumps and bumps?) associated with reclaimed saltmarsh. The sward was short and had a lot of standing shallow water at time of survey. Hundreds of birds were present at the time of survey. Current management (cattle grazing) is appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in very good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall there are a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing and curlew.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	070	1017391	6.0265	0.00	28/01/2009	Favourable	Favourable.The unit supports low-lying semi-improved grassland. Sheep were grazing at time of survey and the sward is short. Some of the ditches have recently been cleaned out. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The low-lying grassland is fairly uniform but there are occasional patches of open shallow water. Some of these have patches of rush providing structural diversity and there are occasional small tussocky patches of rushes in the fields. Patches of exposed wet mud were noted in places. So, overall there appears to be a suitable range of features present to support wintering birds and given the low levels of disturbance in this area the fields may also be suitable for breeding species such as lapwing.Graham steven visited.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	071	1006248	18.401	0.00	27/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	072	1006249	26.5975	0.00	28/01/2009	Favourable	The unit mostly supports low-lying semi-improved grassland although some of the area is drier grassland. There is evidence of recent sheep grazing and the sward is short with taller tussocks. Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage. Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The low-lying grassland is fairly uniform but there are occasional patches of open shallow water and some permanent pools as well as ditches brimmimg over at the time of survey. Some of these have patches of rush providing structural diversity and there are occasional small tussocky patches of rushes in the fields. Patches of exposed wet mud were noted in places. Overall there are a suitable range of features present to support wintering birds and the fields may also be suitable for breeding species such as lapwing and curlew.	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	074	1024369	26.1928	0.00	04/08/2009	Favourable	Reedbed looks in good condition. The sea wall is mown with rough grassland either sideon the banks. In places it is quite herb rich with abundant wild carrot. Other herbs noted include bird's foot trefoil, bristly oxtongue, sea beet, sea purslane, spear leaved orache, fennel. None of the species listed in the objectives were noted	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	078	1017369	5.813	0.00	27/01/2009	Favourable		
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	079	1017393	20.2219	0.00	27/02/2009	Unfavourable - No change	The unit supports predominantly low-lying semi-improved grassland, which is currently grazed in places by ponies. Although the area includes areas of short grazed damp turf, a significant proportion of the unit is ungrazed and dominated by tall, coarse vegetation. Patches of standing shallow water were in evidence at time of survey but it is desirable that a greater extent of short grassland with open water was available for the wintering and breeding bird interest feature. Many of the ditches in the unit appear unmanaged and choked with emergent vegetation.	AGRICULTURE - UNDERGRAZING,
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	080	1023901	10.3984	0.00	26/10/2010	Favourable	This unit is largely occupied by lowland neutral grassland associated with the sea wall. The grassland supports a number of scarce plants and also provides roosting habitat for wintering birds. Current management is through cattle grazing and occasional mowing of the sea wall by the Environment Agency. The unit is managed by the RSPB as part of the Great Bells `wet grassland? compensation project. The grassland has suitable variation in height and structure to provide suitable conditions for the notable plants present and is considered to be in favourable condition	
NEUTRAL GRASSLAND - Lowland	PAUL HYDE	081	1023900	6.3239	0.00	27/01/2009	Favourable	The unit supports low-lying semi-improved grassland, including a matrix of mainly tussocky grasses and rushes interspersed with areas of short grazed damp turf dominated by fescues and creeping bent with perennial rye-grass, meadow barley, creeping buttercup and clovers and occasional patches of standing shallow water at time of survey. In addition, a dense stand of reedbed occurs in the east of the site, and marshy grassland with soft rush occurs in the southern part of the unit.Current management appears to be appropriate to maintain the grassland in suitable condition for the wintering bird assemblage.Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in good condition with respect to suitability for wintering birds. The grassland is short but rushes are frequent providing cover and structural diversity. Patches of exposed wet mud were noted in places. Overall, as part of the wider landscape, the unit supports a suitable range of features present to support wintering birds.	

NEUTRAL GRASSLAND - Lowland	PAUL HYDE	082	1023678	4.438	0.00	28/01/2009	Favourable	This unit supports a mixture of scrubby margin, saltmarsh (sea purslane and common saltmarsh-grass) and low-lying semi-improved grassland, including patches of short damp turf dominated by fescues and creeping bent along with areas of tussocky grasses and rushes adding to the variation structure. The unit also includes manmade channels supporting common reed and sea club-rush. As part of the wider landscape, this unit contributes to supporting the wintering bird assemblage.Comments on individual attributes:Grassland extent ? there were no indications of loss of grassland.Sward structure ? The grassland is in suitable condition for wintering birds, with a matrix of short turf patches and frequent rush tussocks providing cover and structural diversity.	
LITTORAL SEDIMENT	PAUL HYDE	110	1028991	1492.982	148.58	12/04/2005	Favourable	This unit was formerly separated into several compartments (units 104 and 105, and parts of units 100 and 101), which have been combined to more accurately reflect ecological boundaries. The condition assessment is based on the previous assessments for units 100, 101, 104 and 105, and is not the result of a new site visit or reassessment.	
LITTORAL SEDIMENT	PAUL HYDE	111	1028992	1768.674	0.00	12/04/2005	Favourable	This unit was formerly divided into two areas for assessment purposes (unit 102 and part of unit 101), but these have now been combined to more accurately reflect ecological boundaries. The condition assessment is based on the previous assessments for units 101 and 102, and is not the result of a new site visit or reassessment.	

APPENDIX 18

Queendown Warren SAC Citation and Natura 2000 Standard Data Form

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Queendown Warren
Unitary Authority/County:	Kent
SAC status:	Designated on 1 April 2005
Grid reference:	TQ827629
SAC EU code:	UK0012833
Area (ha):	14.28
Component SSSI:	Queendown Warren SSSI

Site description:
The grassland of this site is on the south-facing slope of a dry chalk valley. It is largely dominated by upright brome *Bromopsis erecta* and sheep's-fescue *Festuca ovina* with numerous plants characteristic of grazed but otherwise undisturbed chalk grassland. Among the more interesting species are chalk milkwort *Polygala calcarea*, squinancywort *Asperula cynanchica*, horseshoe vetch *Hippocrepis comosa* and the nationally rare meadow clary *Salvia pratensis*. The site contains an important assemblage of rare and scarce orchids, including early spider-orchid *Ophrys sphegodes*, burnt orchid *Orchis ustulata* and man orchid *Aceras anthropophorum*. It is rich entomologically and two characteristic species, the adonis blue butterfly *Lysandra bellargus* and the rufous grasshopper *Gomphocerippus rufus* occur here.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*) (important orchid sites). (Dry grasslands and scrublands on chalk or limestone, including important orchid sites)*

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0012833
Date of registration: 14 June 2005
Signed: Trevor Salmon
On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0012833**
SITENAME	**Queendown Warren**

TABLE OF CONTENTS

1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
B	UK0012833

1.3 Site name

Queendown Warren

1.4 First Compilation date	1.5 Update date
1995-06	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	1995-06
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.623333333	51.33527778

2.2 Area [ha]:

14.48

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ4	Kent

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
6210	X		11.14		G	A	C	A	B
9130			1.51		G	D			

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N08	10.0
N09	70.0
N16	20.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: basic,limestone,nutrient-poor,sedimentary 2 Terrestrial: Geomorphology and landscape: lowland,slope,escarpment

4.2 Quality and importance

Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) for which this is considered to be one of the best areas in the United Kingdom. which is considered to be the priority sub-type: ?important orchid sites?.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	H04		B
H	M02		B
H	J03		B

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

- [ ] Yes
- [ ] No, but in preparation
- [x] No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX 19

European Site Conservation Objectives for Queendown Warren SAC

European Site Conservation Objectives for Queendown Warren Special Area of Conservation
Site Code: UK0012833

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of qualifying natural habitats**
- **The structure and function (including typical species) of qualifying natural habitats, and**
- **The supporting processes on which qualifying natural habitats rely**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia)* (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)*

* denotes a priority natural habitat or species (supporting explanatory text on following page)

*** Priority natural habitats or species**

Some of the natural habitats and species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Habitats Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

APPENDIX 20

Supplementary Advice to the Conservation Objectives for Queendown Warren SAC

European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

Queendown Warren Special Area of Conservation (SAC)
Site Code: UK0012833

Adonis Blue © Natural England/Peter Wakely

Date of Publication: 11 February 2019

About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Queendown Warren SAC.

This advice should therefore be read together with the SAC Conservation Objectives available here.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England when developing, proposing or assessing an activity, plan or project that may affect this site'

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	Queendown Warren Special Area of Conservation (SAC)
Location	Kent
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	1 April 2005
Qualifying Features	See section below
Designation Area	14.28ha
Designation Changes	N/A
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Queendown Warren SSSI
Relationship with other European or International Site designations	N/A

Site background and geography

Queendown Warren SAC is located within the North Downs National Character Area (NCA Profile 119). The site comprises an area of grassland which is on the south-facing slope of a dry chalk valley. It is largely dominated by upright brome *Bromopsis erecta* and sheep's-fescue *Festuca ovina* with numerous plants characteristic of grazed but otherwise undisturbed chalk grassland. Among the more interesting species are chalk milkwort *Polygala calcarea*, squinancywort *Asperula cynanchica*, horseshoe vetch *Hippocrepis comosa* and the nationally rare meadow clary *Salvia pratensis*. The site contains an important assemblage of rare and scarce orchids, including early spider-orchid *Ophrys sphegodes*, burnt orchid *Orchis ustulata* and man orchid *Aceras anthropophorum*. It is rich entomologically and two characteristic species, the adonis blue butterfly *Lysandra bellargus* and the rufous grasshopper *Gomphocerippus rufus* occur here.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

- **H6120 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites)**

In the UK, examples of this feature are generally found on thin, well-drained, lime-rich soils associated with chalk and limestone. They occur predominantly at low to moderate altitudes in England and Wales, extending locally into upland areas in northern England, Scotland and Northern Ireland. Most of these agriculturally-unimproved calcareous grasslands are maintained by grazing.

At Queendown Warren SAC this Annex 1 habitat feature consists of CG3 *Bromus erectus* grassland. It contains an important assemblage of rare and scarce species, including early spider-orchid *Ophrys sphegodes*, burnt orchid *Orchis ustulata* and man orchid *Aceras anthropophorum*.

Table 1: Supplementary Advice for Qualifying Features: H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) (important orchid sites); Dry grasslands and scrublands on chalk or limestone (important orchid sites) *

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature at 7.6 hectares, subject to natural changes.	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements given may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis.	NATURAL ENGLAND. (2011) Definition of Favourable Condition – Queendown Warren SSSI (Available on request from Natural England) This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
	Spatial distribution of the feature within the site	Maintain the distribution and configuration of the H6210 feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it	NATURAL ENGLAND. (2011) Definition of Favourable Condition – Queendown Warren SSSI (Available on request from Natural England)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the H6210 feature are referable to and characteristics by the following National Vegetation Classification type: CG3 *Bromopsis erecta* lowland calcareous grassland	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	NATURAL ENGLAND. (2011) Definition of Favourable Condition – Queendown Warren SSSI (Available on request from Natural England)
Structure and function (including its typical species)	**Vegetation: proportion of herbs (including Carex spp)**	Maintain the proportion of herbaceous species within the range 40%-90%	A high cover of characteristic herbs, including sedges (Carex species) is typical of the structure of this habitat type.	NATURAL ENGLAND. (2011) Definition of Favourable Condition – Queendown Warren SSSI (Available on request from Natural England)
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Restore the abundance of the typical species listed below to enable each of them to be a viable component of the Annex 1 habitat; • Constant and preferential plant species of CG3 grassland NVC vegetation types which comprise the H6120 feature within this SAC • Important orchid assemblage including Lady Orchid *Orchis purpurea;* Man Orchid *Aceras anthropophorum;*	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Structural** species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a	NATURAL ENGLAND. (2011) Definition of Favourable Condition – Queendown Warren SSSI (Available on request from Natural England) NATURAL ENGLAND. (2015) Queendown Warren SAC Site Improvement Plan This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Burnt-tip orchid *Orchis ustulata;* Early Spider Orchid *Ophrys sphegodes*	particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available. Recent surveys have found decline in number of Early Spider orchid.	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Maintain the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or hydrology which may encourage their spread;	There will be a range of undesirable or uncharacteristic species which, if allowed to colonise and spread, are likely to have an adverse effect on the feature's structure and function, including its more desirable typical species. These may include invasive non-natives such as Cotoneaster spp, or coarse and aggressive native species which may uncharacteristically dominate the composition of the feature. Undesirable species include: *Cirsium arvense, Cirsium vulgare, Rumex crispus, Rumex obtusifolius, Senecio jacobaea, Urtica dioica*	NATURAL ENGLAND. (2011) Definition of Favourable Condition – Queendown Warren SSSI (Available on request from Natural England) This attribute will be periodically monitored as part of Natural England's SSSI Condition Assessments
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain the pattern of natural vegetation zonations/transitions	Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the H6210 habitat.	Soil is the foundation of basic ecosystem function and its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			associated with this Annex I feature.	
Structure and function (including its typical species)	**Supporting off-site habitat**	Restore the extent, quality and spatial configuration of land or habitat surrounding or adjacent to the site which is known to support the H6120 feature.	The structure and function of the qualifying habitat, including its typical species, may rely upon the continued presence of areas which surround and are outside of the designated site boundary. Changes in surrounding land-use may adversely (directly/indirectly) affect the functioning of the feature and its component species. This supporting habitat may be critical to the typical species of the feature to support their feeding, breeding, roosting, population dynamics ('metapopulations'), pollination or to prevent/reduce/absorb damaging impacts from adjacent land uses e.g. pesticide drift, nutrient enrichment Queendown Warren SSSI is small in area and there is the opportunity to link the habitat with Purple Hill SSSI 570m away.	
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Maintain the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of natural habitat features to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of	NATURAL ENGLAND. (2015). Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments (‘NBCCVAs’) for

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability. The overall vulnerability of this SAC/SPA to climate change has been assessed by Natural England (2015) as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that this site is considered to be vulnerable overall but are a lower priority for further assessment and action. Individual species may be more or less vulnerable than their supporting habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable.	SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].
Supporting processes (on which the feature relies)	**Air quality**	Maintain, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (http://www.apis.ac.uk). NATURAL ENGLAND. (2015) Queendown Warren SAC Site Improvement Plan

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. The risk of atmospheric nitrogen deposition is flagged as needing further investigation in the Site Improvement Plan for the site. However, currently the Nitrogen Deposition (kg N/ha/yr) for the site is 15.4 which is between Critical Loads (kg N/ha/yr): 15-25	
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to Maintain the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. The site improvement plan identifies species decline as a pressure to the site and habitat fragmentation is identified as a threat to the site	NATURAL ENGLAND. (2015) Queendown Warren SAC Site Improvement Plan
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

APPENDIX 21

Queendown Warren SSSI Citation

COUNTY: KENT SITE NAME: QUEENDOWN WARREN

DISTRICT: SWALE

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: SWALE BOROUGH COUNCIL

National Grid Reference: TQ 828629 Area: 22.2 (ha.) 54.8 (ac.)

Ordnance Survey Sheet 1:50,000: 178 1:10,000: TQ 86 SW

Date Notified (Under 1949 Act): 1951 Date of Last Revision: N/A

Date Notified (Under 1981 Act): 1983 Date of Last Revision: –

Other Information:
Local Nature Reserve declared 1973 and 1977 managed by Kent Trust for Nature Conservation. The site is Grade II in 'A Nature Conservation Review'.

Reasons for Notification:
In the grassland and woodland of this site two nationally rare plant species occur. In addition an outstanding assemblage of plants is present.

The grassland and woodland of this site are on the south-facing slope of a dry chalk valley. The grassland is largely dominated by upright brome *Bromus erectus* and sheep's fescue *Festuca ovina* with numerous plants characteristic of grazed but otherwise undisturbed chalk grassland. Among the more interesting species are chalk milkwort *Polygala calcarea*, squinancywort *Asperula cynanchica*, horseshoe vetch *Hippocrepis comosa* and several species of orchids including the rare early spider orchid *Ophrys sphegodes*. Another rare plant present is meadow clary *Salvia pratensis*. The grassland is rich entomologically and two characteristic species, the adonis blue butterfly *Lysandra bellargus* and the rufous grasshopper *Gomphocerippus rufus* are found.

Potter's Wood is mainly sweet chestnut coppice with oak standards, but with beech, hazel and other species along the southern edge. The other areas of woodland and scrub are also dominated by beech, but hornbeam, hawthorn and several other species are also frequent. Dog's mercury *Mercurialis perennis*, bramble *Rubus fruticosus* and bluebells *Hyacinthoides non-scripta* are the dominant plants of the woodland floor, but among scarcer species are the lady orchid *Orchis purpurea* and yellow bird's-nest *Monotropa hypopitys*. Some former grassland has been invaded by scrub in recent years; this scrub is of mixed species, including several, like wayfaring tree and wild privet, which are highly characteristic of the chalk soils.

APPENDIX 22

Queendown Warren SSSI Condition Assessment (May 2019)

Report generated on: 01 May 2019

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment	Adverse Condition Reasons
Queendown Warren SSSI - KENT (SWALE)									
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	001	1007143	6.0298	0.00	07/10/2011	Favourable	The woodland at this site is not mentioned in the conservation objectives so it has been treated as site fabric for the purposes of this visit.	
CALCAREOUS GRASSLAND - Lowland	Phil Williams	002	1007144	16.1233	0.00	07/10/2011	Favourable	Good quality lowland calcareous grassland (CG3).EXTENT OF FEATURE: No loss. PROPORTION OF GRASS TO HERBS: within range of 40% to 90%. FREQUENCY OF POSITIVE INDICATOR SPECIES: Upright Brome (Bromopsis erecta) frequent, plus other good indicator species including dwarf thistle, lady's bedstraw, common rock rose, rough/lesser hawkbits, fairy flax, common bird's foot trefoil, hoary plantain, cowslip, salad burnett, small scabious, devil's bit scabious, hairy violet, yellow wort and Autumn gentian. Meadow clary was also seen at one location. TREES AND SCRUB: no more than occassional throughout the sward or together more than 5% coverNEGATIVE INDICATORS: No more than 10% of Tor Grass (Brachypodium pinnatum)AVERAGE SWARD HEIGHT: Within target of 2-15 cm, at 2 to 4 cms observed during this visit.COVER OF LITTER: No more than 25% of sward.LOCALIZED BARE GROUND: Within target at no more than 20 by 20 metres over site.VASCULAR PLANT SPECIES OF SCRUB MARGINS AND GRASSLAND/SCRUB MOSAICS: Scrub cover less than 25% - providing some protection from grazing with minimal shade.	

APPENDIX 23

North Downs Woodlands SAC Citation and Natura 200 Standard Data Form

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	North Downs Woodlands
Unitary Authority/County:	Medway, Kent
SAC status:	Designated on 1 April 2005
Grid reference:	TQ674629
SAC EU code:	UK0030225
Area (ha):	287.58
Component SSSI:	Halling to Trottiscliffe Escarpment SSSI, Wouldham to Detling Escarpment SSSI

Site description:
This site consists of mature beech *Fagus sylvatica* forests and yew *Taxus baccata* woods on steep slopes. The stands lie within a mosaic of scrub, other woodland types and areas of unimproved grassland on thin chalk soils.

The beech and yew woodland is on thin chalk soils and where the ground flora is not shaded dog's mercury *Mercurialis perennis* predominates. Associated with it is stinking iris *Iris foetidissima* and several very scarce species such as lady orchid *Orchis purpurea* and stinking hellebore *Helleborus foetidus*.

The chalk grassland, on warm south-facing slopes, is dominated by upright brome *Bromopsis erecta* and sheep's-fescue *Festuca ovina* but supports many other plants which are characteristic of unimproved downland, including the nationally rare ground pine *Ajuga chamaepitys*.

Qualifying habitats: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following habitats listed in Annex I:

- *Taxus baccata* woods of the British Isles. (Yew-dominated woodland)*
- *Asperulo-Fagetum* beech forests. (Beech forests on neutral to rich soils)
- Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*). (Dry grasslands and scrublands on chalk or limestone)

Annex I priority habitats are denoted by an asterisk (*).

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030225
Date of registration: 14 June 2005
Signed: Trevor Salmon
On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0030225**
SITENAME	**North Downs Woodlands**

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1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
B	UK0030225

1.3 Site name

North Downs Woodlands

1.4 First Compilation date	1.5 Update date
2001-01	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	2001-01
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.403611111	51.34

2.2 Area [ha]:

288.58

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ4	Kent

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
6210			40.4		G	C	C	C	C
9130			53.1		G	B	C	B	B
91J0	X		66.08		G	A	B	B	B

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N16	63.0
N17	23.0
N09	14.0
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: sedimentary,basic,nutrient-poor,limestone 2 Terrestrial: Geomorphology and landscape: escarpment,lowland,slope

4.2 Quality and importance

Semi-natural dry grasslands and scrubland facies: on calcareous substrates (Festuco-Brometalia) for which the area is considered to support a significant presence. Asperulo-Fagetum beech forests for which this is considered to be one of the best areas in the United Kingdom. Taxus baccata woods of the British Isles for which this is considered to be one of the best areas in the United Kingdom.

4.3 Threats, pressures and activities with impacts on the site

The most important impacts and activities with high effect on the site

Negative Impacts			
Rank	Threats and pressures [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	I01		B
H	H04		B
H	G01		I
H	B02		I

Positive Impacts			
Rank	Activities, management [code]	Pollution (optional) [code]	inside/outside [i|o|b]
H	A04		I
H	A02		I
H	B02		I

Rank: H = high, M = medium, L = low
Pollution: N = Nitrogen input, P = Phosphor/Phosphate input, A = Acid input/acidification,
T = toxic inorganic chemicals, O = toxic organic chemicals, X = Mixed pollutions
i = inside, o = outside, b = both

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

[ ]	Yes
[ ]	No, but in preparation
[X]	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX 24

European Site Conservation Objectives for North Downs Woodlands SAC

European Site Conservation Objectives for North Downs Woodlands Special Area of Conservation
Site code: UK0030225

With regard to the SAC and the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of the qualifying natural habitats**
- **The structure and function (including typical species) of the qualifying natural habitats, and,**
- **The supporting processes on which the qualifying natural habitats rely**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone

H9130. *Asperulo-Fagetum* beech forests; Beech forests on neutral to rich soils

H91J0. *Taxus baccata* woods of the British Isles; Yew-dominated woodland*

* denotes a priority natural habitat or species (supporting explanatory text on following page)

*** Priority natural habitats or species**

Some of the natural habitats and species for which UK SACs have been selected are considered to be particular priorities for conservation at a European scale and are subject to special provisions in the Habitats Regulations. These priority natural habitats and species are denoted by an asterisk (*) in Annex I and II of the Habitats Directive. The term 'priority' is also used in other contexts, for example with reference to particular habitats or species that are prioritised in UK Biodiversity Action Plans. It is important to note however that these are not necessarily the priority natural habitats or species within the meaning of the Habitats Regulations.

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the "Habitats Regulations"). They must be considered when a competent authority is required to make a 'Habitats Regulations Assessment', including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term 'favourable conservation status' is defined in regulation 3 of the Habitats Regulations.

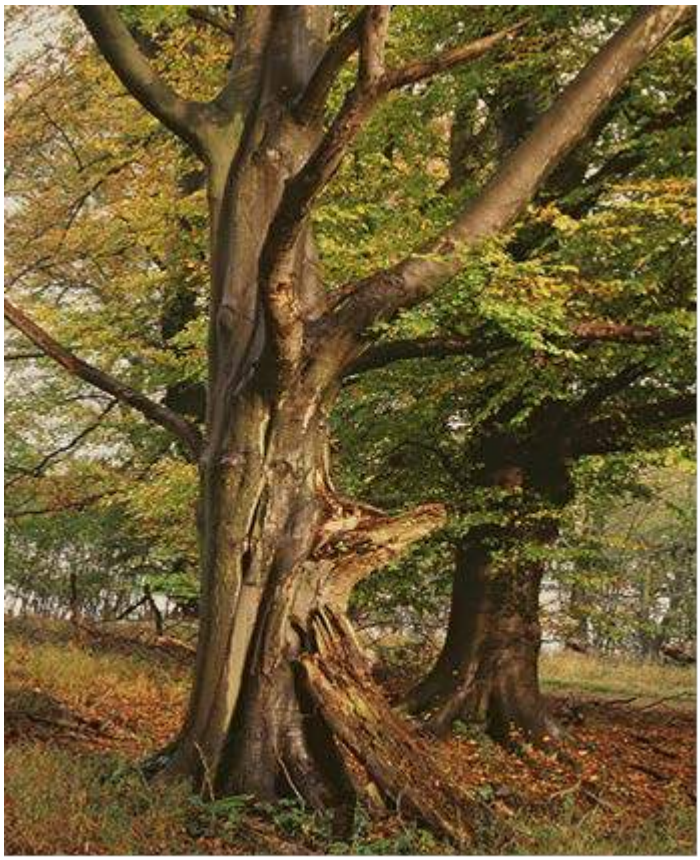
Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 30 June 2014 to reflect the consolidation of the Habitats Regulations in 2017.

APPENDIX 25

Supplementary Advice to the Conservation Objectives for North Downs Woodlands SAC

European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

North Downs Woodlands Special Area of Conservation (SAC)
Site Code: UK0030225



Date of Publication: 11 February 2019

About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to North Downs Woodlands SAC. This advice should therefore be read together with the SAC Conservation Objectives available here.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site.

This Supplementary Advice to the Conservation Objectives presents attributes which are ecological characteristics of the designated species and habitats within a site. The listed attributes are considered to be those that best describe the site's ecological integrity and which, if safeguarded, will enable achievement of the Conservation Objectives. Each attribute has a target which is either quantified or qualitative depending on the available evidence. The target identifies as far as possible the desired state to be achieved for the attribute.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectivesNE@naturalengland.org.uk

About this site

European Site information

Name of European Site	North Downs Woodlands Special Area of Conservation (SAC)
Location	Kent
Site Map	The designated boundary of this site can be viewed here on the MAGIC website
Designation Date	April 2005
Qualifying Features	See below
Designation Area	288.58 Hectares
Designation Changes	None
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Halling to Trottiscliffe Escarpment SSSI Wouldham to Detling Escarpment SSSI
Relationship with other European or International Site designations	None

Site background and geography

North Downs Woodlands SAC is situated in south-east England within the North Downs National Character Area, which forms a chain of chalk hills extending from the Hog's Back in Surrey and ending dramatically at the internationally renowned White Cliffs of Dover.

The North Downs Woodlands SAC consists of mature Beech forests and Yew woods on steep slopes. The stands lie within a mosaic of scrub and other woodland types and are the most easterly of the Beech woodland sites selected. Parts of the woods were affected by the storm of 1987. Small areas of unimproved chalk grassland are also present.

The area is considered one of the best areas in the United Kingdom for Asperulo-Fagetum beech forests and one of the best areas in the British Isles for *Taxus baccata* woods.

The geological interest within the site occurs in the Upper and Lower Culand Pits. The sequence of Chalk in these pits has yielded rich and diverse collections of fossil fishes which complement those from Lewes in Sussex. The material is superbly preserved, frequently without significant crushing or distortion, and the fish are usually articulated, and thus have been the subject of much scientific research.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying habitats:

- **H9130 *Asperulo-Fagetum* beech forests**

This site consists of mature *Asperulo-Fagetum* beech forests and also yew H91J0 Yew *Taxus baccata* woods on steep slopes. The stands lie within a mosaic of scrub and other woodland types and are the most easterly of the beech woodland sites selected. Parts of the woods were affected by the Great Storm of 1987.

- **H6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia)(*important orchid sites)**

These grasslands are typically found on thin, well-drained, lime-rich soils associated with chalk and limestone. They occur predominantly at low to moderate altitudes in England and Wales, extending locally into upland areas in northern England, Scotland and Northern Ireland. Most of these calcareous grasslands are maintained by grazing.

The chalk grassland is primarily in the north-west section of the SAC and is dominated by upright brome *Bromus erectus* and sheep's fescue *Festuca ovina* but supports many other plants which are characteristic of unimproved downland. Among these are dwarf thistle *Cirsium acaule*, chalk milkwort *Polygala calcarea*, clustered bellflower *Campanula glomerata*, horseshoe vetch *Hippocrepis comosa*, and several species of orchid including the scarce musk orchid *Herminium monorchis* and man orchid *Aceras anthropophorum*. This range of food-plants and the warm conditions are ideal for insects and the area is of great entomological importance. It is the only known location in Britain for the moth *Hypercallia citrinalis* and several other very scarce moths, beetles and grasshoppers also occur.

- **H91J0 Taxus baccata woods of the British Isles** * Priority feature

Yew *Taxus baccata* woodland at this site is associated with H9130 *Asperulo-Fagetum* beech forests, scrub and small areas of unimproved grassland on thin chalk soils. Where the shade is not too dense dog's mercury *Mercurialis perennis* predominates in the ground flora. The site is the most easterly of those selected.

Table 1: Supplementary Advice for Qualifying Features: H6210. Semi-natural dry grasslands and scrubland facies: on calcareous substrates (*Festuco-Brometalia*); Dry grasslands and scrublands on chalk or limestone

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature to 40.4 hectares	There should be no measurable reduction (excluding any trivial loss) in the extent and area of this feature, and in some cases, the full extent of the feature may need to be restored. The baseline-value of extent given has been generated using data gathered from the listed site-based surveys. Area measurements given may be approximate depending on the methods, age and accuracy of data collection, and as a result this value may be updated in future to reflect more accurate information. The extent of an Annex I habitat feature covers the sum extent of all of the component vegetation communities present and may include transitions and mosaics with other closely-associated habitat features. Where a feature is susceptible to natural dynamic processes, there may be acceptable variations in its extent through natural fluctuations. Where a reduction in the extent of a feature is considered necessary to meet the Conservation Objective for another Annex I feature, Natural England will advise on this on a case-by-case basis.	JNCC. (2015). Natura 2000 – Standard Data Form; North Downs Woodlands. NATURAL ENGLAND. (2014). Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final). NATURAL ENGLAND. (2014). Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type (s) CG2 *Festuca ovina – Avenula pratensis* grassland (all forms) CG3 *Bromus erectus* grassland (all forms) CG4 *Brachypodium pinnatum* grassland (all forms) CG5 *Bromus erectus – Brachypodium pinnatum* grassland (all forms)	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	JNCC. (2015). *Natura 2000 – Standard Data Form; North Downs Woodlands.* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final).* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).*
Structure and function (including its	**Vegetation: proportion of herbs**	Restore the proportion of herbaceous species within the range 40%-90%	A high cover of characteristic herbs, including sedges (Carex species) is typical of the structure of this habitat type.	This attribute will be periodically monitored as part of Natural England's SSSI condition

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
typical species)	**(including Carex spp)**			assessments
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Restore the abundance of the typical species listed below to enable each of them to be a viable component of the H6210 habitat; The constant and preferential plants of the CG2, CG3, CG4 and CG5 grassland NVC community types which forms a key component of the H6210 feature Vascular plant assemblage including: Ground Pine *Ajuga chamaepitys*; Man Orchid *Aceras anthropophorum*; Lady Orchid – *Orchis purpurea;* Cut-leaved germander *Teucrium botrys*; Musk orchid *Herminium monorchis*	Some plant or animal species (or related groups of such species) make a particularly important contribution to the necessary structure, function and/or quality of an Annex I habitat feature at a particular site. These species will include; • **Structural** species which form a key part of the Annex I habitat's structure or help to define that habitat on a particular SAC (see also the attribute for 'vegetation community composition'). • **Influential** species which are likely to have a key role affecting the structure and function of the habitat (such as bioturbators (mixers of soil/sediment), grazers, surface borers, predators or other species with a significant functional role linked to the habitat) • **Site-distinctive** species which are considered to be a particularly special and distinguishing component of an Annex I habitat on a particular SAC. There may be natural fluctuations in the frequency and cover of each of these species. The relative contribution made by them to the overall ecological integrity of a site may vary, and Natural England will provide bespoke advice on this as necessary. The list of species given here for this Annex I habitat feature at this SAC is not necessarily exhaustive. The list may evolve, and species may be added or deleted, as new information about this site becomes available.	
Structure and function (including its typical species)	**Vegetation: undesirable species**	Restore the frequency/cover of the following undesirable species to within acceptable levels and prevent changes in surface condition, soils, nutrient levels or	There will be a range of undesirable or uncharacteristic species which, if allowed to colonise and spread, are likely to have an adverse effect on the feature's structure and function, including its more desirable typical species. These may include invasive non-natives such as Cotoneaster spp, or coarse and	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		hydrology which may encourage their spread.	aggressive native species which may uncharacteristically dominate the composition of the feature.	
Structure and function (including its typical species)	**Vegetation community transitions**	Maintain the pattern of natural vegetation zonations/transitions	Transitions/zonations between adjacent but different vegetation communities are usually related to naturally-occurring changes in soil, aspect or slope. Such 'ecotones' retain characteristics of each bordering community and can add value in often containing species not found in the adjacent communities. Retaining such transitions can provide further diversity to the habitat feature, and support additional flora and fauna.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature.	
Structure and function (including its typical species)	**Functional connectivity with wider landscape**	Restore the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will	NATURAL ENGLAND, Priority habitat inventory (available on interactive mapping system MAGIC: http://www.magic.gov.uk/)

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			advise as to whether these are applicable on a case by case basis. There are additional areas of lowland calcareous grassland, good quality semi-improved grassland, and areas of deciduous woodland that connect to the SAC. Some of this priority habitat falls within non SAC units of Halling to Trottiscliffe Escarpment SSSI and Wouldham to Delting Escarpment SSSI. Peters Pit SAC and SSI, Holborough to Burham Marshes SSSI and Houlder and Monarch Hill Pits Upper Halling SSSI are situated between the two portions of North Downs Woodlands SAC. These designated sites support habitats including coastal and floodplain grazing marsh, good quality semi-improved grassland, coastal saltmarsh, deciduous woodland and reedbeds.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the feature's ability, and that of its supporting processes, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of natural habitat features to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. The overall vulnerability of this SAC to climate change has been assessed by Natural England (2015) as being low, taking into account the sensitivity, fragmentation, topography and management of its habitats. This means that this site is considered to be vulnerable overall but are a lower priority for further assessment and action. Individual species may be more or less vulnerable than their	NATURAL ENGLAND. (2015). Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England [Available at http://publications.naturalengland.org.uk/publication/4954594591375360].

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			supporting habitat itself. In many cases, change will be inevitable so appropriate monitoring would be advisable. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.	
Supporting processes (on which the feature relies)	**Air quality**	Maintain as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	This habitat type is considered sensitive to changes in air quality. Exceedance of these critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and causing the loss of sensitive typical species associated with it. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide (SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales. There are concerns about the risk of atmospheric nitrogen	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk). NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			deposition which have been flagged as needing further investigation but currently the critical load for the site is within acceptable limits. Nitrogen Deposition (kg N/ha/yr): 15.3 which is between Critical Loads (kg N/ha/yr): 15-25	
Supporting processes (on which the feature relies)	**Conservation measures**	Maintain the management measures (either within and/or outside the site boundary as appropriate) which are necessary to restore the structure, functions and supporting processes associated with the feature	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, Site Management Strategies or Plans, the Views about Management Statement for the underpinning SSSI and/or management agreements. Significant scrub clearance has been carried out and grazing regimes, including those with native hebridean sheep have been established. These management practices should be maintained to keep scrub at a manageable level. These management practices should be applied across this habitat feature.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

Table 2: Supplementary Advice for Qualifying Features: H91J0. *Taxus baccata* woods of the British Isles; Yew-dominated woodland *

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature to 66.08 hectares	See the explanatory notes for this attribute above in Table 1 For this feature, this attribute includes the extent of semi-natural wood-pasture mosaic area; tree'd area; the number of veteran trees (except through natural causes), including dead and living trees. Tree roots (particularly of veteran trees) may extend a considerable distance beyond the boundary of the site. A reduction of woodland/wood-pasture area - whether at the edge or in the middle of a site will reduce the core area where wood-pasture conditions are found - these support significant assemblages of species dependent on woodland conditions (e.g. lichens and bryophytes - being one example). Loss of any woodland area which fragments a site into different parts may interrupt the movement of species between the remaining parts of the woodland, especially those with limited powers of dispersal.	JNCC. (2015). *Natura 2000 – Standard Data Form; North Downs Woodlands.* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final).* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).*
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type W13 *Taxus baccata* woodland	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature. This will also help to conserve their typical plant species (i.e. the constant and preferential species of a community), and therefore that of the SAC feature, at appropriate levels (recognising natural fluctuations).	JNCC. (2015). *Natura 2000 – Standard Data Form; North Downs Woodlands.* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final).* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).*
Structure and function (including its typical species)	**Vegetation structure - canopy cover**	Maintain an appropriate tree canopy cover across the feature, which will typically be between 40-90% of the site	Canopy cover is the overall proportion of vegetative cover consisting of any woody layer ranging from established regeneration to mature and veteran stages. Woodland canopy density and structure is important because it affects ecosystem function and in particular microclimate, litterfall, soil moisture, nutrient turnover and shading; this in turn influences the composition of plants and animals in lower vegetation layers and soil. Open canopies with just scattered trees will have less of a	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			woodland character and reduced diversity of woodland-dependent species (although they may be still be important as a form of woodland-pasture). Completely closed canopies across the whole woodland are not ideal either however, as they cast heavier shade and support fewer species associated with edges, glades and open grown trees, and have little space where tree regeneration could occur. In general, the woodland canopy of this feature should provide a core of woodland interior conditions with some open and edge habitat as well.	
Structure and function (including its typical species)	**Vegetation structure - open space**	Maintain areas of permanent/temporary open space within the woodland feature, typically to cover approximately 10%of area	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. Having some open, sunlit and largely tree-less areas as part of the woodland community is often important to facilitate natural tree and shrub regeneration and also to provide supporting habitat for specialist woodland invertebrates, birds, vascular and lower plants. Such open space can be permanent or temporary and may consist of managed grazed areas, linear rides and glades, or naturally-produced gaps caused by disturbance events such as windthrow/fire/tree falling over/ snow damage.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Vegetation structure - old growth**	Maintain the extent and continuity of undisturbed, mature/old growth stands (typically comprising at least 50% of the feature at any one time) and the assemblages of veteran and ancient trees (typically >10 trees per hectare).	Good woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. For this habitat type, old or over-mature elements of the woodland are particularly	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			characteristic and important features, and their continuity should be a priority.	
Structure and function (including its typical species)	**Vegetation structure - dead wood**	Maintain the continuity and abundance of standing or fallen dead and decaying wood, typically between 30 - 50 m3 per hectare of standing or fallen timber or 3-5 fallen trees >30cm per hectare	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. Dead and actively decaying wood, either as part of a standing tree or as a fallen tree on the woodland floor, is an important component of woodland ecosystems, and supports a range of specialist invertebrates, fungi, lichens and bryophytes, and associated hole-nesting birds and roosting bats, all of which may be very typical of the feature.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Vegetation structure - age class distribution**	Maintain at least 2 age classes (e.g. pole stage, mature, veteran) spread across the average life expectancy of the trees - which can be hundreds of years.	A distribution of size and age classes of the major site-native tree and shrub species that indicate the woodland will continue in perpetuity, and will provide a variety of the woodland habitats and niches expected for this type of woodland at the site in question.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Vegetation structure - shrub layer**	Maintain an understorey of shrubs that is sparse under the yew canopy, with occasionally present (e.g. holly, hawthorn, elder, box) (this will vary with light levels and site objectives)	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical	**Vegetation structure - Woodland edge**	Maintain a graduated woodland edge into adjacent semi-natural open habitats, other woodland/wood-pasture types or	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. Woodland edge is defined as being the transitional	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
species)	**(graduated edge; buffered; mosaics with other habitats)**	scrub.	zone between the forest feature and adjacent but different habitat types - the best woodland edges will have a varied structure in terms of height and cover. Many typical forest species make regular use of the edge habitats for feeding due to higher herb layer productivity and larger invertebrate populations.	
Structure and function (including its typical species)	**Adaptation and resilience**	Maintain the resilience of the feature by ensuring a diversity of site-native tree species; although yew dominates, this can be provided by a scattering of one or more of whitebeam, ash, beech, sycamore and oak.	See the explanatory notes for this attribute above in Table 1	NATURAL ENGLAND. (2015). Climate Change Theme Plan and supporting National Biodiversity Climate Change Vulnerability assessments ('NBCCVAs') for SACs and SPAs in England (Available at http://publications.naturalengland.org.uk/publication/4954594591375360)
Structure and function (including its typical species)	**Regeneration potential**	Maintain the potential for sufficient natural regeneration of desirable trees and shrubs; typically tree seedlings of desirable species (measured by seedlings and <1.3m saplings - above grazing and browsing height) should be visible in sufficient numbers in gaps, at the wood edge and/or as regrowth as appropriate ;	The regeneration potential of the woodland feature must be maintained if the wood is to be sustained and survive, both in terms of quantity of regeneration and in terms of appropriate species. This will Include regeneration of the trees and shrubs from saplings or suckers, regrowth from coppice stools or pollards, and where appropriate planting. Browsing and grazing levels must permit regeneration at least in intervals of 5 years every 20. The density of regeneration considered sufficient is less in parkland sites than in high forest. Regeneration from pollarding of veteran trees should be included where this is happening.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Tree and shrub species composition**	Maintain a canopy and under-storey of which 95% is composed of site native trees and shrubs	Native trees and shrubs in general support a greater diversity of associated species than non-native species, especially amongst groups of invertebrates which depend directly on trees for food and shelter. There are many plants and animals which use or co-exist with non-native trees, but many rare and	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			threatened woodland species are specialists adapted to one or a few native trees or shrub species (birches, willows and oaks, are examples of trees that host many specialist insect species).	
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain species listed below to enable each of them to be a viable component of the H91J0 habitat; The constant and preferential plants of the W13 woodland NVC community types which forms a key component of the H91J0 feature Vascular plant assemblage including White mullein *Verbascum lychnitis*; Stinking hellebore *Helleborus foetidus*; Lady orchid *Orchis purpurea*	See the explanatory notes for this attribute above in Table 1	JNCC. (2015). *Natura 2000 – Standard Data Form; North Downs Woodlands.* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final).* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).*
Structure and function (including its typical species)	**Invasive, non-native and/or introduced species**	Ensure invasive and introduced non-native species are either rare or absent, but if present are causing minimal damage to the feature	Invasive or introduced non-native species are a serious potential threat to the biodiversity of native and ancient woods, because they are able to exclude, damage or suppress the growth of native tree, shrub and ground species (and their associated typical species), reduce structural diversity and prevent the natural regeneration of characteristic site-native species. Once established, the measures to control such species may also impact negatively on the features of interest (e.g. use of broad spectrum pesticides). Such species can include Rhododendrons, snowberry, Japanese knotweed, giant hogweed and Himalayan balsam, for example. Similarly, this would include pheasants, rabbits and non-native invertebrate 'pest' species.	NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			Invasive Sycamore has the potential to regenerate in woodland gaps reducing overall extent of SAC feature. This is more of an issue in Beech stands than in Yew woodland where Yew tends to eventually succeed in dominating the canopy.	
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature.	
Supporting processes (on which the feature relies)	**Functional connectivity with wider landscape**	Restore the overall extent, quality and function of any supporting features within the local landscape which provide a critical functional connection with the site	This recognises the potential need at this site to maintain or restore the connectivity of the site to its wider landscape in order to meet the conservation objectives. These connections may take the form of landscape features, such as habitat patches, hedges, watercourses and verges, outside of the designated site boundary which are either important for the migration, dispersal and genetic exchange of those typical species closely associated with qualifying Annex I habitat features of the site. These features may also be important to the operation of the supporting ecological processes on which the designated site and its features may rely. In most cases increasing actual and functional landscape-scale connectivity would be beneficial. Where there is a lack of detailed knowledge of the connectivity requirements of the qualifying feature, Natural England will advise as to whether these are applicable on a case by case basis. There are additional areas of lowland calcareous grassland, good quality semi-improved grassland, and areas of deciduous	NATURAL ENGLAND, Priority habitat inventory. Available on interactive mapping system MAGIC: http://www.magic.gov.uk/

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			woodland that connect to the SAC. Some of this priority habitat falls within non SAC units of Halling to Trottiscliffe Escarpment SSSI and Wouldham to Delting Escarpment SSSI. Peters Pit SAC and SSI, Holborough to Burham Marshes SSSI and Houlder and Monarch Hill Pits Upper Halling SSSI are situated between the two portions of North Downs Woodlands SAC. These designated sites support habitats including coastal and floodplain grazing marsh, good quality semi-improved grassland, coastal saltmarsh, deciduous woodland and reedbeds.	
Supporting processes (on which the feature relies)	**Air quality**	Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	See the explanatory notes for this attribute above in Table 1 Nitrogen Deposition (kg N/ha/yr): 25.9 which is above Critical Loads (kg N/ha/yr): 5-15	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk). NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.
Supporting processes (on which the feature relies)	**Hydrology**	At a site, unit and/or catchment level (as necessary, maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. This target is generic and further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts. This attribute and target are included because disruption/ damage to hydrological processes could be caused by activities at some distance from the site boundary. Eg through extraction of ground or surface waters; diverting or daming river channels; pollution of water source;	NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			channel alignment that disrupts natural geomorphological processes; tunnelling etc.	
Supporting processes (on which the feature relies)	**Illumination**	Ensure artificial light is maintained to a level which is unlikely to affect natural phenological cycles and processes to the detriment of the feature and its typical species at this site.	Woodland biodiversity has naturally evolved with natural patterns of light and darkness, so disturbance or modification of those patterns can influence numerous aspects of plant and animal behaviour. For example, light pollution (from direct glare, chronically increased illumination and/or temporary, unexpected fluctuations in lighting) can affect animal navigation, competitive interactions, predator-prey relations, and animal physiology. Flowering and development of trees and plants can also be modified by un-natural illumination which can disrupt natural seasonal responses.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

Table 3: Supplementary Advice for Qualifying Features: H9130. *Asperulo-Fagetum* beech forests; Beech forests on neutral to rich soils

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Extent and distribution of the feature	**Extent of the feature within the site**	Maintain the total extent of the feature at 66.08 hectares.	See the explanatory notes for this attribute above in Table 1 For this feature, this attribute includes the extent of semi-natural wood-pasture mosaic area; tree'd area; the number of veteran trees (except through natural causes), including dead and living trees. Tree roots (particularly of veteran trees) may extend a considerable distance beyond the boundary of the site. A reduction of woodland/wood-pasture area - whether at the edge or in the middle of a site will reduce the core area where wood-pasture conditions are found - these support significant assemblages of species dependent on woodland conditions (e.g. lichens and bryophytes - being one example). Loss of any woodland area which fragments a site into different parts may interrupt the movement of species between the remaining parts of the woodland, especially those with limited powers of dispersal.	JNCC. (2015). *Natura 2000 – Standard Data Form; North Downs Woodlands.* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final).* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).*
Extent and distribution of the feature	**Spatial distribution of the feature within the site**	Maintain the distribution and configuration of the feature, including where applicable its component vegetation types, across the site	A contraction in the range, or geographic spread, of the feature (and its component vegetation and typical species, plus transitional communities) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine its resilience to adapt to future environmental changes. This may also reduce and break up the continuity of a habitat within a site and how well its typical species are able to move around the site to occupy and use habitat. Such fragmentation can impact on their viability and the wider ecological composition of the Annex I habitat. Smaller fragments of habitat can typically support smaller and more isolated populations which are more vulnerable to extinction. These fragments also have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for some of the typical and more specialist species associated with the Annex I habitat feature.	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
Structure and function (including its typical species)	**Vegetation community composition**	Ensure the component vegetation communities of the feature are referable to and characterised by the following National Vegetation Classification type W12 *Fagus sylvatica – Mercurialis perennis* woodland	This habitat feature will comprise a number of associated semi-natural vegetation types and their transitional zones, reflecting the geographical location of the site, altitude, aspect, soil conditions (especially base-status and drainage) and vegetation management. In the UK these have been categorised by the National Vegetation Classification (NVC). Maintaining or restoring these characteristic and distinctive vegetation types, and the range of types as appropriate, will be important to sustaining the overall habitat feature.	JNCC. (2007). Second Report by the UK under Article 17 on the implementation of the Habitats Directive from January 2001 to December 2006. Peterborough: JNCC. Available from: http://jncc.defra.gov.uk/pdf/Article17/FCS2007-H9130-audit-Final.pdf NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Wouldham to Detling Escarpment SSSI (Final).* NATURAL ENGLAND. (2014). *Definitions of Favourable Condition for Designated Features of Interest; Halling to Trottiscliffe Escarpment SSSI (Final).*
Structure and function (including its typical species)	**Vegetation structure - canopy cover**	Maintain an appropriate tree canopy cover across the feature, which will typically be between 40-90% of the site	Canopy cover is the overall proportion of vegetative cover consisting of any woody layer ranging from established regeneration to mature and veteran stages. Woodland canopy density and structure is important because it affects ecosystem function and in particular microclimate, litterfall, soil moisture, nutrient turnover and shading; this in turn influences the composition of plants and animals in lower vegetation layers and soil. Open canopies with just scattered trees will have less of a woodland character and reduced diversity of woodland-dependent species (although they may be still be important as a form of woodland-pasture). Completely closed canopies across the whole woodland are not ideal either however, as they cast heavier shade and support fewer species associated with edges, glades and open grown trees, and have little space where tree regeneration could occur. In general, the woodland canopy of this feature	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			should provide a core of woodland interior conditions with some open and edge habitat as well.	
Structure and function (including its typical species)	**Vegetation structure - open space**	Maintain areas of permanent/temporary open space within the woodland feature, typically to cover approximately 10%of area	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. Having some open, sunlit and largely tree-less areas as part of the woodland community is often important to facilitate natural tree and shrub regeneration and also to provide supporting habitat for specialist woodland invertebrates, birds, vascular and lower plants. Such open space can be permanent or temporary and may consist of managed grazed areas, linear rides and glades, or naturally-produced gaps caused by disturbance events such as windthrow/fire/tree falling over/snow damage.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Vegetation structure - old growth**	Maintain the extent and continuity of undisturbed, mature/old growth stands (typically comprising at least 20% of the feature at any one time) and the assemblages of veteran and ancient trees (typically >10 trees per hectare).	Good woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. For this habitat type, old or over-mature elements of the woodland are particularly characteristic and important features, and their continuity should be a priority.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Vegetation structure - dead wood**	Maintain the continuity and abundance of standing or fallen dead and decaying wood, typically between 30 - 50 m3 per hectare of standing or fallen timber or 3-5 fallen trees >30cm per hectare, and >10 standing dead trees per hectare	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. The targets set within this attribute should reflect the most appropriate structure for the woodland feature on a particular site, taking account of its known interest, history, past management and the landscape context. Dead and actively decaying wood, either as part of a standing	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			tree or as a fallen tree on the woodland floor, is an important component of woodland ecosystems, and supports a range of specialist invertebrates, fungi, lichens and bryophytes, and associated hole-nesting birds and roosting bats, all of which may be very typical of the feature.	
Structure and function (including its typical species)	**Vegetation structure - age class distribution**	Maintain at least 3 age classes (pole stage/ medium/ mature) spread across the average life expectancy of the commonest trees.	A distribution of size and age classes of the major site-native tree and shrub species that indicate the woodland will continue in perpetuity, and will provide a variety of the woodland habitats and niches expected for this type of woodland at the site in question.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Vegetation structure - Woodland edge (graduated edge; buffered; mosaics with other habitats)**	Maintain a graduated woodland edge into adjacent semi-natural open habitats, other woodland/wood-pasture types or scrub.	Woodland structure includes variations in age, tree form, layering, the distribution and abundance of open space and dead wood. It plays a critical role in woodland ecosystem functioning. Woodland edge is defined as being the transitional zone between the forest feature and adjacent but different habitat types - the best woodland edges will have a varied structure in terms of height and cover. Many typical forest species make regular use of the edge habitats for feeding due to higher herb layer productivity and larger invertebrate populations.	
Structure and function (including its typical species)	**Vegetation structure - age class distribution**	Maintain a diversity (at least 3 species on more base rich sites) of site-native trees (e.g. beech, ash, whitebeam, yew, sycamore, holly) across the site.	A distribution of size and age classes of the major site-native tree and shrub species that indicate the woodland will continue in perpetuity, and will provide a variety of the woodland habitats and niches expected for this type of woodland at the site in question.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Browsing and grazing by herbivores**	Maintain browsing/grazing (e.g. by livestock) to sufficient levels to allow tree seedlings and saplings the opportunity to exceed browse height, and which maintain the characteristic structure of the woodland feature	Herbivores, especially deer, are an integral part of woodland ecosystems. They are important in influencing woodland regeneration, composition and structure and therefore in shaping woodland wildlife communities. In general, both light grazing and browsing is desirable to promote both a diverse woodland structure and continuous seedling establishment. Short periods with no grazing at all can allow fresh natural regeneration of trees, but a long-term absence of herbivores can result in excessively dense thickets of young trees which shade out ground flora and lower plant species. However,	

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
			heavy grazing by deer or sheep prevents woodland regeneration, and can cause excessive trampling and/or poaching damage, canopy fragmentation, heavy browsing, barkstripping and a heavily grazed sward.	
Structure and function (including its typical species)	**Regeneration potential**	Restore the potential for sufficient natural regeneration of desirable trees and shrubs; typically tree seedlings of desirable species (measured by seedlings and <1.3m saplings - above grazing and browsing height) should be visible in sufficient numbers in gaps, at the wood edge and/or as regrowth as appropriate ;	The regeneration potential of the woodland feature must be maintained if the wood is to be sustained and survive, both in terms of quantity of regeneration and in terms of appropriate species. This will Include regeneration of the trees and shrubs from saplings or suckers, regrowth from coppice stools or pollards, and where appropriate planting. Browsing and grazing levels must permit regeneration at least in intervals of 5 years every 20. The density of regeneration considered sufficient is less in parkland sites than in high forest. Regeneration from pollarding of veteran trees should be included where this is happening. A restore target has been set as beech regeneration is insufficient to retain canopy cover in the long term. In addition, Beech saplings are susceptible to squirrel damage.	NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.
Structure and function (including its typical species)	**Tree and shrub species composition**	Maintain a canopy and under-storey of which 95% is composed of site native trees and shrubs	Native trees and shrubs in general support a greater diversity of associated species than non-native species, especially amongst groups of invertebrates which depend directly on trees for food and shelter. There are many plants and animals which use or co-exist with non-native trees, but many rare and threatened woodland species are specialists adapted to one or a few native trees or shrub species (birches, willows and oaks, are examples of trees that host many specialist insect species).	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Structure and function (including its typical species)	**Key structural, influential and/or distinctive species**	Maintain species listed below to enable each of them to be a viable component of the H9130 habitat; The constant and preferential plants of the W12 woodland NVC community types which forms a key component of the H9130 feature	See the explanatory notes for this attribute above in Table 1	Hall, J.E., Kirby, K.J and Whitbread, A.M. (2004). *National Vegetation Classification: Field guide to woodland.* Peterborough: JNCC. This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		Vascular plant assemblage including White mullein *Verbascum lychnitis*; Stinking hellebore *Helleborus foetidus*; Lady orchid *Orchis purpurea*		
Structure and function (including its typical species)	**Soils, substrate and nutrient cycling**	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal: bacterial ratio, to within typical values for the habitat.	Soil is the foundation of basic ecosystem function and a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with this Annex I feature.	
Structure and function (including its typical species)	**Root zones of ancient trees**	Restore the soil structure within and around the root zones of the mature and ancient tree cohort to an un-compacted condition	The management of land within and around forest habitats which are characterised by ancient trees can be crucial to their individual welfare and long-term continuity, and the landscape they are part of can be just as or even more important. The condition of the soil surrounding such trees will affect their roots, associated mycorrhizal fungi and growth. Plants have difficulty in compacted soil because the mineral grains are pressed together, leaving little space for air and water which are essential for root growth. Unless carefully managed, activities such as construction, forestry management and trampling by grazing livestock, recreational vehicle use and human feet during recreational activity may all contribute to excessive soil compaction around ancient trees. A restore target has been set as off-road vehicles as well as all-terrain bikes are having an impact on parts of the woodland. Vehicle damage is associated with vehicles coming off the Public Rights of Way (PRoW) into the woodland.	NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.
Supporting processes (on which the feature relies)	**Air quality**	Restore as necessary, the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this	See the explanatory notes for this attribute above in Table 1 Nitrogen Deposition (kg N/ha/yr): 25.9 which is above Critical Loads (kg N/ha/yr): 10-20	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System

Attributes		Targets	Supporting and Explanatory Notes	Sources of site-based evidence (where available)
		feature of the site on the Air Pollution Information System (www.apis.ac.uk).		(www.apis.ac.uk). NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.
Supporting processes (on which the feature relies)	**Hydrology**	At a site, unit and/or catchment level (as necessary, maintain natural hydrological processes to provide the conditions necessary to sustain the feature within the site	Defining and maintaining the appropriate hydrological regime is a key step in moving towards achieving the conservation objectives for this site and sustaining this feature. Changes in source, depth, duration, frequency, magnitude and timing of water supply can have significant implications for the assemblage of characteristic plants and animals present. This target is generic and further site-specific investigations may be required to fully inform conservation measures and/or the likelihood of impacts.	NATURAL ENGLAND (2014). Site Improvement Plan; North Downs Woodlands SAC.
Supporting processes (on which the feature relies)	**Illumination**	Ensure artificial light is maintained to a level which is unlikely to affect natural phenological cycles and processes to the detriment of the feature and its typical species at this site.	Woodland biodiversity has naturally evolved with natural patterns of light and darkness, so disturbance or modification of those patterns can influence numerous aspects of plant and animal behaviour. For example, light pollution (from direct glare, chronically increased illumination and/or temporary, unexpected fluctuations in lighting) can affect animal navigation, competitive interactions, predator-prey relations, and animal physiology. Flowering and development of trees and plants can also be modified by un-natural illumination which can disrupt natural seasonal responses.	
Version Control Advice last updated: N/A				
Variations from national feature-framework of integrity-guidance: N/A				

APPENDIX 26

Wouldham to Detling Escarpment SSSI Citation

COUNTY: KENT SITE NAME: WOULDHAM TO DETLING ESCARPMENT

DISTRICT/BOROUGH: TONBRIDGE AND MALLING DISTRICT; MAIDSTONE BOROUGH

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authorities: TONBRIDGE AND MALLING DISTRICT COUNCIL, Maidstone Borough Council

National Grid Reference: TQ 753609 Area: 296.3 (ha.) 732.15 (ac.)

Ordnance Survey Sheet 1:50,000: 188 1:10,000: TQ 75 NE, TQ 76 SW, SE

Date Notified (Under 1949 Act): 1951 Date of Last Revision: 1981

Date Notified (Under 1981 Act): 1990

Other Information:
1. Listed in 'A Nature Conservation Review', D A Ratcliffe (ed), Cambridge 1977.
2. Will be listed in the forthcoming Geological Conservation Review.
3. Several areas within the site are managed by the Kent Trust for Nature Conservation as nature reserves.
4. The boundary has been amended at renotification by several extensions and deletions.
5. The site lies within the Kent Downs Area of Outstanding Natural Beauty.

Reasons for Notification:
This 10 km stretch of the chalk escarpment to the north of Maidstone includes representative examples of woodland, scrub and unimproved grassland habitats on chalk, which support a number of rare** and scarce* species of plants and invertebrates. The Culand Pits are also of importance because of their rich and unique fossil fauna which includes a variety of fish and reptiles.

Biological interest
Much of the site would traditionally have been managed as open grazing land, but in common with most surviving rough grazing land in the south-east, continued lack of grazing has led to the development of scrub and woodland, leaving more limited areas of open grassland.

Although most of the woodland is recent in origin, it has already acquired a rich community of plants and animals. The tree canopy is dominated by various proportions of beech *Fagus sylvatica*, ash *Fraxinus excelsior*, whitebeam *Sorbus aria*, wild cherry *Prunus avium*, silver birch *Betula pendula* and yew *Taxus baccata*. Understorey shrubs include hazel *Corylus avellana*, hawthorn *Crataegus monogyna*, midland hawthorn *C. laevigata*, elder *Sambucus nigra* and privet *Ligustrum vulgare*, while the ground flora includes dog's mercury *Mercurialis perennis*, ivy *Hedera helix*, lords-and-ladies *Arum maculatum* and spurge laurel *Daphne laureola*. Scarce* plants include lady orchid *Orchis*

purpurea and stinking hellebore *Helleborus foetidus*. Box *Buxus sempervirens*, a rare** small tree, is native here at one of a handful of sites in the south-east. The storm of October 1987 has added variety to the woodland by opening up some of the areas with a closed canopy.

Scrub on the site includes the full range of succession from open grassland to the woodland already mentioned. Scattered clumps of hawthorn and wild rose *Rosa* spp. (including the scarce Kent^{+} species *R. rubiginosa*) gradually merge and a varied scrub develops, with more than a dozen shrub species, including dogwood *Cornus sanguinea*, privet, hazel, hawthorn, wayfaring tree *Viburnum lantana*, yew and the rare** box. Eventually tree species become dominant and woodland develops. The ground flora, which begins as rank chalk grassland, becomes shaded by the developing scrub, eventually resembling that of the woodland.

Chalk grassland survives as fragments within the scrub, and a number of larger areas also occur. The most open areas are dominated by fine grasses including red and sheep's fescues *Festuca rubra* and *F. ovina*, with low-growing broadleaved plants such as stemless thistle *Cirsium acaule*, fairy flax *Linum catharticum*, bulbous buttercup *Ranunculus bulbosus*, wild thyme *Thymus praecox* and salad burnet *Sanguisorba minor*. Most of the grassland is taller, dominated by upright brome *Bromus erectus* with broadleaved plants including hairy violet *Viola hirta*, marjorum *Origanum vulgare* and cowslip *Primula veris*. Other plants in the grassland include: a number of orchids – fragrant orchid *Gymnadenia conopsea*, common spotted orchid *Dactylorhiza fuchsii*, twayblade *Listera ovata* and pyramidal orchid *Anacamptis pyramidalis*; several plants scarce in *Kent*$^{+}$ such as chalk milkwort *Polygala calcarea*, dropwort *Filipendula vulgaris*, burnet rose *Rosa pimpinellifolia* and adder's-tongue fern *Ophioglossum vulgatum*; several nationally scarce* species such as man orchid *Aceras anthropophorum* and ground pine *Ajuga chamaepitys*; and the nationally rare** meadow clary *Salvia pratensis*.

The site supports a rich insect assemblage typical of southern calcareous grassland, including a number of uncommon species. The moths (Lepidoptera) of Culand Pits have been best studied and the fauna includes 11 scarce* species, most notable of which is the straw belle *Asptitates gilvaria*, and one rare** species. *Oncocera obductella* all associated with chalk grassland plants. A further 6 scarce* species of grasshopper (Orthoptera), bug (Heteroptera) and beetle (Coleoptera) have been recorded, as well as a rare bug *Hallodapus montandoni*, which is associated with ants in short grassland: these species are all typical of chalk grassland. In addition 3 scarce* woodland moths and one scarce* beetle *Mordellistena neuwaldeggiana* typical of woodland edge, are known from the site.

Geological interest

The geological interest within the site occurs in the Upper and Lower Culand Pits. The sequence of Chalk in these pits has yielded rich and diverse collections of fossil fishes which complement those from Lewes in Sussex. The material is superbly preserved, frequently without significant crushing or distortion, and the fish are usually articulated, and thus have been the subject of much scientific research.

Type fish material from this locality includes *Cantioscyllium decipiens*, *Sardinoides illustrans*, *Ischyodus incisus*, *Scyliorhinus antiquus*, *Pachyrhizodus basalis*, *Osmeroides levis* and *Plethodus pentagon*. Most species from here have a widespread distribution;

however, the site has also yielded some uncommon species of which the following are of importance: 4 species of *Pachyrhizodus* occur at this site -- this is a problematical teleost genus known from England, North America and Australia, whose relations are poorly known; *Dinelops ornatus* is known only from a handful of specimens; *Tomognathus* is poorly known and is the first reported member of the helosaurs, a group of deep-sea fishes of which only 3 are known, one from here; the type and only specimen of the shark *Cantioscyllium* is from this site – the specimen is a vertebral column and associated braincase, rarely preserved in sharks.

The Lower and Middle Chalk (Cenomanian/Turonian) of these pits has been an important source of reptiles. These include turtles (*Chelone*, *Protostega*), plesios (*Cimiliosaurua*), pterosaursaurs (*Ornithocheirus*) and the type specimen of a lizard (*Delichosaurus)*. These quarries have yielded one of the best Lower/Middle Chalk reptile faunas.

**rare: recorded from 15 or less of the 10 × 10 km squares in Britain.
*scarce (ie nationally scarce): recorded from 16 to 100 10 × 10 km squares in Britain.
+scarce in Kent: recorded from between 1% and 5% of the 2 × 2 km tetrads in Kent.

APPENDIX 27

Wouldham to Detling Escarpment SSSI Condition Assessment (May 2019)

Report generated on: 02 May 2019

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment	Adverse Condition Reasons
Wouldham to Detling Escarpment SSSI - KENT (MAIDSTONE, TONBRIDGE AND MALLING)									
CALCAREOUS GRASSLAND - Lowland	Phil Williams	001	1006668	7.3306	0.00	06/05/2009	Favourable		
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	002	1006682	15.3179	0.00	22/04/2008	Favourable		
CALCAREOUS GRASSLAND - Lowland	Phil Williams	003	1006669	22.9065	0.00	18/10/2018	Unfavourable - No change	Both areas are scrubby but appears to be annual growth with little litter underneath. Herbs abundant but not a typical CG2 sward, although patches resemble original turf prior to scrub removal some years ago. Four goats seen, not enough we suggest. Unit fails assessment on scrub cover (average 39% in quadrats)	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	004	1006683	10.5195	0.00	08/09/2016	Unfavourable - Recovering	This woodland unit is comprised of relatively even-aged ash and sycamore, some mature beech trees, open canopy areas with oak and ash standards and birch. The understorey is sparse and young in places and includes; hawthorn, gooseberry, elder, privet, and comprises dense hazel, elder and hawthorn. The field layer is patchy with dog's mercury, lords-and-ladies, violet species and bluebell in places with an abundance of bare leaf litter. The variety within the woodland is partly due to recent coppicing in one section, and the remaining woodland is re-growth from much older coppicing. Some sycamore is encroaching from the road. Species seen; nuthatch, tree creeper, buzzard, brimstone, comma, orange tip, jelly ear and King Alfred fungi, rabbit and signs of badgers with a badger latrine. This was assessed as part of the Field Unit/Sussex Team Woodland Monitoring Project. KH/CF 08/09/2016.	

CALCAREOUS GRASSLAND - Lowland	Phil Williams	005	1016238	21.4687	0.00	01/09/2010	Unfavourable - Recovering	Site is predominantly mature woodland with beech, ash, birch, yew, field maple and occasional white beam.Shrub layer is dominated by hazel with almost pure stands in places but also a variety of typical calcareous shrub species including spurge laurel, also buddleia and sycamore (< 5%). Ground flora includes dogs mercury, ivy and areas of bare ground.Areas of secondary woodland occur dominated by birch with hawthorn, privet, guelder rose, dogwood and sycamore. Ground flora of chalk grassland species in these areas includes marjoram, purple flowered helleborine, wild basil, hairy violet, field scabious, rough hawkbit and ploughman?s-spikenard.The area of grazed grassland and scrub mosaic in this unit is probably about 2ha, fenced and managed with the adjacent unit 6 by KWT, scrub management is ongoing.Indicator species include squinancywort, dwarf and carline thistle, rockrose, rough hawkbit, fairy flax, bird?s-foot trefoil, salad burnet, small scabious, eyebright and burnet saxifrage. Occasional species include harebell, autumn gentians and mouse-ear hawkweed. Species occurring more rarely include dropwort, hoary plantain, milkwort, and thyme.No negative indicators but open areas appear reduced.	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	006	1006684	12.6573	0.00	22/04/2008	Favourable		
CALCAREOUS GRASSLAND - Lowland	Phil Williams	007	1006672	8.4614	0.00	18/10/2018	Unfavourable - Declining	There are three grassland areas within the SSSI scrub/woodland mosaic. None appear to be actively managed. Outside the fenced field, small rabbit grazed patches have retained chalk grassland species. Bramble & tree seedlings are present throughout unit. Failing on scrub cover (22%) and sward height.	
EARTH HERITAGE	Phil Williams	008	1006666	17.9268	0.00	18/10/2018	Unfavourable - No change	Cliff faces obscured by scree which has scrub and trees at the base. Chalk grassland contains a lot of young scrub which looks to be cut annually, averaged 24%. Very little grass with a range of herbs, small patches more diverse herbs and grasses.	

EARTH HERITAGE	Phil Williams	009	1006667	19.8565	0.00	18/10/2018	Unfavourable - No change	No chalk grassland, the quarry is dominated by scrub a significant amount of which is cotoneaster. Chalk grassland species <5% of vegetation. Western area is early birch woodland. Fence isn't stock proof. Geology fails on scrub, scree and face access.	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	010	1006685	2.1723	0.00	01/09/2010	Favourable	Area of non intervention mature woodland, oak dominated with ash, field maple, whitebeam and occasional turkey oak (<5%). Shrub layer hazel, hawthorn and blackthorn dense in places with little ground flora and brambles, nettles or ivy in others.Plenty of standing and fallen deadwood and no negative indicators.	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	011	1016173	7.0126	0.00	22/04/2008	Favourable		
CALCAREOUS GRASSLAND - Lowland	Phil Williams	012	1006676	2.4686	0.00	18/10/2018	Favourable	It's unclear how this unit is being managed. There are patches of tor grass, scrub and disturbance by burrowing animals but overall the sward is species-rich chalk grassland, alive with butterflies on day of visit. Livestock access is unclear.	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	013	1006686	1.8012	0.00	23/04/2008	Favourable		
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	014	1006687	15.6888	0.00	01/05/2007	Favourable	Unit has been reassessed as favourable, because although there is no active management, light levels within the wood are still quite high and the ground flora remains diverse, including butchers broom, woodruff and early purple orchids.	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	015	1006688	26.9375	0.00	01/05/2007	Favourable	Woodland is varied including storm damaged yew woodland now regenerating with ash dominant, beech high forest in southern corner and ash/hazel/sweet chestnut coppice (with oak) on the plateau, which although not recently coppiced retains a diverse and characteristic ground flora.	
CALCAREOUS GRASSLAND - Lowland	Phil Williams	016	1006677	5.7394	0.00	18/10/2018	Unfavourable - Recovering	CG2 grassland pockets amongst established scrub and longer false brome grassland in the Coombes and valley bottom with bramble and tree seedlings. Site has good invertebrate mosaic. Scrub is an ongoing threat on this site, but it hasn't deteriorated.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	017	1006689	12.8242	0.00	19/05/2008	Favourable		
CALCAREOUS GRASSLAND - Lowland	Phil Williams	018	1006678	10.4136	0.00	18/10/2018	Unfavourable - Recovering	Midway up slope across unit becomes longer courser sward dominated by false brome and brambles. Lower slope very short a few cm dom by wild marjoram, thyme and mouse eared hawkweed. Scattered bramble and hawthorn scrub. Proposals to introduce more browsing animals to tackle scrub.	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	019	1006690	11.5836	0.00	18/10/2005	Unfavourable - Recovering	Action has been taken to secure woodland from unauthorised access	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	020	1006679	2.3167	0.00	18/10/2005	Favourable	Area of none intervention	
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	021	1006695	20.5863	0.00	16/04/2008	Favourable		
BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	022	1006691	22.6549	0.00	24/04/2007	Favourable	Woodland is in good condition with some areas of coppicing along North Downs Way. However some sycamore along lower margin in particular which may push the unit into unfavourable condition if it increases above 5% of the woodland.	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	023	1006692	17.8255	0.00	06/05/2009	Unfavourable - Recovering	Improving in condition following storm damage. A great deal of structural variety is present with areas of scrub and areas of more mature woodland interspersed with open areas of grassland. It is difficult to assess units 23 and 24 independently as both form a mosaic of grassland and woodland of varying amounts. In one area, the scrub has been coppiced. The woodland has a rich W8 type ground flora with several ancient woodland indicators including moschatel, wood speedwell, bluebell, lesser celandine, yellow archangel, stinking iris, field maple, common dog violet. Some areas are dominated by beech, especially along the bottom of the slope near the road where there are many mature trees. Other areas are mostly a mixture of hornbeam and hazel coppice, oak, ash, yew, birch, whitebeam with hawthorn and elder in the understorey. The area around the quarry has a dense mix of chalk shrubs.Sycamore is seeding into gaps created by storm damage, particularly nearer the bottom end of the slope.	
CALCAREOUS GRASSLAND - Lowland	Phil Williams	024	1006680	6.6971	0.00	06/05/2009	Unfavourable - Recovering	Still a lot of scrub on this unit (over max level of 5%), especially nearer the bottom end of the slope but there are patches of open grassland present. Species diversity on the areas of grassland is within target with 10 species noted as frequent. Grass to herb ratio is good - at least 60/40. Scrub cover is generally high and there is on-going encroachment. Average sward height, bare ground and leaf litter levels are all within target. Ground pine was not found on this unit but it may appear later in the season. Its preferred bare ground/disturbed habitat was present. The assessment for invertebrates showed that preferred surfaces, bare ground and nectar sources/seed heads were all present.	
CALCAREOUS GRASSLAND - Lowland	Phil Williams	025	1006681	3.9301	0.00	27/05/2009	Unfavourable - Recovering		

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	026	1006693	4.0812	0.00	23/04/2008	Favourable	This is minimal intervention woodland on the slope with a canopy of yew, mature beech and oak. There is a varied understorey typical of the woodland type. The ground flora includes a good range of characteristic plants including dogs mercury, stinking iris, bluebell, spurge laurel. Sycamore is present but does not appear to be causing adverse effects at present. There are adequate levels of natural tree regeneration.	

APPENDIX 28

Peter's Pit SAC Citation and Natura 2000 Standard Data Form

EC Directive 92/43 on the Conservation of Natural Habitats and of Wild Fauna and Flora

Citation for Special Area of Conservation (SAC)

Name:	Peter's Pit
Unitary Authority/County:	Kent
SAC status:	Designated on 1 April 2005
Grid reference:	TQ717628
SAC EU code:	UK0030237
Area (ha):	28.30
Component SSSI:	Peter's Pit SSSI

Site description:
Peter's Pit is an old chalk quarry with adjoining soil-stripped fields on the North Downs, with scattered ponds situated amongst grassland, scrub and woodland. The ponds have widely fluctuating water levels and support large breeding populations of great crested newt *Triturus cristatus*.

The site has an undulating terrain in which many rain fed ponds, of various sizes, have developed. Those which dry up early in the season are of less interest, but five ponds are sufficiently large to support very substantial populations of amphibians, particularly the great crested newt. The value of the site for newts is enhanced by the presence, around the edges and between the ponds, of areas of scrub with loose rock which serve as day and winter refuges. Aquatic vegetation provides shelter in the pond environment.

Qualifying species: The site is designated under **article 4(4)** of the Directive (92/43/EEC) as it hosts the following species listed in Annex II:

- Great crested newt *Triturus cristatus*

This citation relates to a site entered in the Register of European Sites for Great Britain.
Register reference number: UK0030237
Date of registration: 14 June 2005

Signed: Trevor Salmon

On behalf of the Secretary of State for Environment, Food and Rural Affairs

NATURA 2000 – STANDARD DATA FORM

Special Areas of Conservation under the EC Habitats Directive (includes candidate SACs, Sites of Community Importance and designated SACs).

Each Natura 2000 site in the United Kingdom has its own Standard Data Form containing site-specific information. The data form for this site has been generated from the Natura 2000 Database submitted to the European Commission on the following date:

22/12/2015

The information provided here, follows the officially agreed site information format for Natura 2000 sites, as set out in the Official Journal of the European Union recording the Commission Implementing Decision of 11 July 2011 (2011/484/EU).

The Standard Data Forms are generated automatically for all of the UK's Natura 2000 sites using the European Environment Agency's Natura 2000 software. The structure and format of these forms is exactly as produced by the EEA's Natura 2000 software (except for the addition of this coversheet and the end notes). The content matches exactly the data submitted to the European Commission.

Please note that these forms contain a number of codes, all of which are explained either within the data forms themselves or in the end notes.

Further technical documentation may be found here
http://bd.eionet.europa.eu/activities/Natura_2000/reference_portal

As part of the December 2015 submission, several sections of the UK's previously published Standard Data Forms have been updated. For details of the approach taken by the UK in this submission please refer to the following document:
http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

More general information on Special Areas of Conservation (SACs) in the United Kingdom is available from the SAC home page on the JNCC website. This webpage also provides links to Standard Data Forms for all SACs in the UK.

Date form generated by the Joint Nature Conservation Committee
25 January 2016.

NATURA 2000 - STANDARD DATA FORM

For Special Protection Areas (SPA),
Proposed Sites for Community Importance (pSCI),
Sites of Community Importance (SCI) and
for Special Areas of Conservation (SAC)

SITE	**UK0030237**
SITENAME	**Peter`s Pit**

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1. SITE IDENTIFICATION

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1.1 Type	1.2 Site code
B	UK0030237

1.3 Site name

Peter`s Pit

1.4 First Compilation date	1.5 Update date
2001-05	2015-12

1.6 Respondent:

Name/Organisation:	Joint Nature Conservation Committee
Address:	Joint Nature Conservation Committee Monkstone House City Road Peterborough PE1 1JY
Email:	

Date site proposed as SCI:	2001-05
Date site confirmed as SCI:	2004-12
Date site designated as SAC:	2005-04
National legal reference of SAC designation:	Regulations 11 and 13-15 of the Conservation of Habitats and Species Regulations 2010 (http://www.legislation.gov.uk/uksi/2010/490/contents/made).

2. SITE LOCATION

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2.1 Site-centre location [decimal degrees]:

Longitude	Latitude
0.465555556	51.33777778

2.2 Area [ha]:

28.91

2.3 Marine area [%]

0.0

2.4 Sitelength [km]:

0.0

2.5 Administrative region code and name

NUTS level 2 code	Region Name
UKJ4	Kent

2.6 Biogeographical Region(s)

Atlantic (100.0 %)

3. ECOLOGICAL INFORMATION

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3.1 Habitat types present on the site and assessment for them

Annex I Habitat types						Site assessment			
Code	PF	NP	Cover [ha]	Cave [number]	Data quality	A|B|C|D	A|B|C		
						Representativity	Relative Surface	Conservation	Global
6210			8.18		G	D			

- **PF:** for the habitat types that can have a non-priority as well as a priority form (6210, 7130, 9430) enter "X" in the column PF to indicate the priority form.
- **NP:** in case that a habitat type no longer exists in the site enter: x (optional)
- **Cover:** decimal values can be entered
- **Caves:** for habitat types 8310, 8330 (caves) enter the number of caves if estimated surface is not available.
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation)

3.2 Species referred to in Article 4 of Directive 2009/147/EC and listed in Annex II of Directive 92/43/EEC and site evaluation for them

Species					Population in the site					Site assessment			
G	Code	Scientific Name	S	NP	T	Size		Unit	Cat.	D.qual.	A|B|C|D	A|B|C		

						Min	Max				Pop.	Con.	Iso.	Glo.
A	1166	Triturus cristatus			p	1001	10000	i		M	C	B	C	B

- **Group:** A = Amphibians, B = Birds, F = Fish, I = Invertebrates, M = Mammals, P = Plants, R = Reptiles
- **S:** in case that the data on species are sensitive and therefore have to be blocked for any public access enter: yes
- **NP:** in case that a species is no longer present in the site enter: x (optional)
- **Type:** p = permanent, r = reproducing, c = concentration, w = wintering (for plant and non-migratory species use permanent)
- **Unit:** i = individuals, p = pairs or other units according to the Standard list of population units and codes in accordance with Article 12 and 17 reporting (see reference portal)
- **Abundance categories (Cat.):** C = common, R = rare, V = very rare, P = present - to fill if data are deficient (DD) or in addition to population size information
- **Data quality:** G = 'Good' (e.g. based on surveys); M = 'Moderate' (e.g. based on partial data with some extrapolation); P = 'Poor' (e.g. rough estimation); VP = 'Very poor' (use this category only, if not even a rough estimation of the population size can be made, in this case the fields for population size can remain empty, but the field "Abundance categories" has to be filled in)

4. SITE DESCRIPTION

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4.1 General site character

Habitat class	% Cover
N16	41.8
N23	27.1
N07	2.8
N09	28.3
Total Habitat Cover	100

Other Site Characteristics

1 Terrestrial: Soil & Geology: basic,limestone 2 Terrestrial: Geomorphology and landscape: lowland

4.2 Quality and importance

Triturus cristatus for which this is considered to be one of the best areas in the United Kingdom.

4.5 Documentation

Conservation Objectives - the Natural England links below provide access to the Conservation Objectives (and other site-related information) for its terrestrial and inshore Natura 2000 sites, including conservation advice packages and supporting documents for European Marine Sites within English waters and for cross-border sites. See also the 'UK Approach' document for more information (link via the JNCC website).

Link(s): http://jncc.defra.gov.uk/pdf/Natura2000_StandardDataForm_UKApproach_Dec2015.pdf

http://publications.naturalengland.org.uk/category/6490068894089216

http://publications.naturalengland.org.uk/category/3212324

5. SITE PROTECTION STATUS (optional)

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5.1 Designation types at national and regional level:

Code	Cover [%]	Code	Cover [%]	Code	Cover [%]
UK04	100.0				

6. SITE MANAGEMENT

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6.1 Body(ies) responsible for the site management:

Organisation:	Natural England
Address:	
Email:	

6.2 Management Plan(s):

An actual management plan does exist:

	Yes
	No, but in preparation
X	No

6.3 Conservation measures (optional)

For available information, including on Conservation Objectives, see Section 4.5.

EXPLANATION OF CODES USED IN THE NATURA 2000 STANDARD DATA FORMS

The codes in the table below are also explained in the official European Union guidelines for the Standard Data Form. The relevant page is shown in the table below.

1.1 Site type

CODE	DESCRIPTION	PAGE NO
A	Designated Special Protection Area	53
B	SAC (includes candidates Special Areas of Conservation, Sites of Community Importance and designated SAC)	53
C	SAC area the same as SPA. Note in the UK Natura 2000 submission this is only used for Gibraltar	53

3.1 Habitat representativity

CODE	DESCRIPTION	PAGE NO
A	Excellent	57
B	Good	57
C	Significant	57
D	Non-significant presence	57

3.1 Habitat code

CODE	DESCRIPTION	PAGE NO
1110	Sandbanks which are slightly covered by sea water all the time	57
1130	Estuaries	57
1140	Mudflats and sandflats not covered by seawater at low tide	57
1150	Coastal lagoons	57
1160	Large shallow inlets and bays	57
1170	Reefs	57
1180	Submarine structures made by leaking gases	57
1210	Annual vegetation of drift lines	57
1220	Perennial vegetation of stony banks	57
1230	Vegetated sea cliffs of the Atlantic and Baltic Coasts	57
1310	Salicornia and other annuals colonizing mud and sand	57
1320	Spartina swards (Spartinion maritimae)	57
1330	Atlantic salt meadows (Glauco-Puccinellietalia maritimae)	57
1340	Inland salt meadows	57
1420	Mediterranean and thermo-Atlantic halophilous scrubs (Sarcocornetea fruticosi)	57
2110	Embryonic shifting dunes	57
2120	Shifting dunes along the shoreline with Ammophila arenaria ("white dunes")	57
2130	Fixed coastal dunes with herbaceous vegetation ("grey dunes")	57
2140	Decalcified fixed dunes with Empetrum nigrum	57
2150	Atlantic decalcified fixed dunes (Calluno-Ulicetea)	57
2160	Dunes with Hippopha rhamnoides	57
2170	Dunes with Salix repens ssp. argentea (Salicion arenariae)	57
2190	Humid dune slacks	57
21A0	Machairs (* in Ireland)	57
2250	Coastal dunes with Juniperus spp.	57
2330	Inland dunes with open Corynephorus and Agrostis grasslands	57
3110	Oligotrophic waters containing very few minerals of sandy plains (Littorelletalia uniflorae)	57
3130	Oligotrophic to mesotrophic standing waters with vegetation of the Littorelletea uniflorae and/or of the Isoëto-Nanojuncetea	57
3140	Hard oligo-mesotrophic waters with benthic vegetation of Chara spp.	57
3150	Natural eutrophic lakes with Magnopotamion or Hydrocharition - type vegetation	57

CODE	DESCRIPTION	PAGE NO
3160	Natural dystrophic lakes and ponds	57
3170	Mediterranean temporary ponds	57
3180	Turloughs	57
3260	Water courses of plain to montane levels with the Ranunculion fluitantis and Callitricho-Batrachion vegetation	57
4010	Northern Atlantic wet heaths with Erica tetralix	57
4020	Temperate Atlantic wet heaths with Erica ciliaris and Erica tetralix	57
4030	European dry heaths	57
4040	Dry Atlantic coastal heaths with Erica vagans	57
4060	Alpine and Boreal heaths	57
4080	Sub-Arctic Salix spp. scrub	57
5110	Stable xerothermophilous formations with Buxus sempervirens on rock slopes (Berberidion p.p.)	57
5130	Juniperus communis formations on heaths or calcareous grasslands	57
6130	Calaminarian grasslands of the Violetalia calaminariae	57
6150	Siliceous alpine and boreal grasslands	57
6170	Alpine and subalpine calcareous grasslands	57
6210	Semi-natural dry grasslands and scrubland facies on calcareous substrates (Festuco-Brometalia) (* important orchid sites)	57
6230	Species-rich Nardus grasslands, on silicious substrates in mountain areas (and submountain areas in Continental Europe)	57
6410	Molinia meadows on calcareous, peaty or clayey-silt-laden soils (Molinion caeruleae)	57
6430	Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels	57
6510	Lowland hay meadows (Alopecurus pratensis, Sanguisorba officinalis)	57
6520	Mountain hay meadows	57
7110	Active raised bogs	57
7120	Degraded raised bogs still capable of natural regeneration	57
7130	Blanket bogs (* if active bog)	57
7140	Transition mires and quaking bogs	57
7150	Depressions on peat substrates of the Rhynchosporion	57
7210	Calcareous fens with Cladium mariscus and species of the Caricion davallianae	57
7220	Petrifying springs with tufa formation (Cratoneurion)	57
7230	Alkaline fens	57
7240	Alpine pioneer formations of the Caricion bicoloris-atrofuscae	57
8110	Siliceous scree of the montane to snow levels (Androsacetalia alpinae and Galeopsietalia ladani)	57
8120	Calcareous and calcshist screes of the montane to alpine levels (Thlaspietea rotundifolii)	57
8210	Calcareous rocky slopes with chasmophytic vegetation	57
8220	Siliceous rocky slopes with chasmophytic vegetation	57
8240	Limestone pavements	57
8310	Caves not open to the public	57
8330	Submerged or partially submerged sea caves	57
9120	Atlantic acidophilous beech forests with Ilex and sometimes also Taxus in the shrublayer (Quercion robori-petraeae or Ilici-Fagenion)	57
9130	Asperulo-Fagetum beech forests	57
9160	Sub-Atlantic and medio-European oak or oak-hornbeam forests of the Carpinion betuli	57
9180	Tilio-Acerion forests of slopes, screes and ravines	57
9190	Old acidophilous oak woods with Quercus robur on sandy plains	57
91A0	Old sessile oak woods with Ilex and Blechnum in the British Isles	57
91C0	Caledonian forest	57
91D0	Bog woodland	57
91E0	Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Alno-Padion, Alnion incanae, Salicion albae)	57
91J0	Taxus baccata woods of the British Isles	57

3.1 Relative surface

CODE	DESCRIPTION	PAGE NO
A	15%-100%	58
B	2%-15%	58
C	< 2%	58

3.1 Conservation status habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	59
B	Good conservation	59
C	Average or reduced conservation	59

3.1 Global grade habitat

CODE	DESCRIPTION	PAGE NO
A	Excellent value	59
B	Good value	59
C	Significant value	59

3.2 Population (abbreviated to 'Pop.' in data form)

CODE	DESCRIPTION	PAGE NO
A	15%-100%	62
B	2%-15%	62
C	< 2%	62
D	Non-significant population	62

3.2 Conservation status species (abbreviated to 'Con.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent conservation	63
B	Good conservation	63
C	Average or reduced conservation	63

3.2 Isolation (abbreviated to 'Iso.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Population (almost) Isolated	63
B	Population not-isolated, but on margins of area of distribution	63
C	Population not-isolated within extended distribution range	63

3.2 Global Grade (abbreviated to 'Glo.' Or 'G.' in data form)

CODE	DESCRIPTION	PAGE NO
A	Excellent value	63
B	Good value	63
C	Significant value	63

3.3 Assemblages types

CODE	DESCRIPTION	PAGE NO
WATR	Non breeding waterfowl assemblage	UK specific code
SBA	Breeding seabird assemblage	UK specific code
BBA	Breeding bird assemblage (applies only to sites classified pre 2000)	UK specific code

4.1 Habitat class code

CODE	DESCRIPTION	PAGE NO
N01	Marine areas, Sea inlets	65
N02	Tidal rivers, Estuaries, Mud flats, Sand flats, Lagoons (including saltwork basins)	65
N03	Salt marshes, Salt pastures, Salt steppes	65
N04	Coastal sand dunes, Sand beaches, Machair	65
N05	Shingle, Sea cliffs, Islets	65
N06	Inland water bodies (Standing water, Running water)	65
N07	Bogs, Marshes, Water fringed vegetation, Fens	65
N08	Heath, Scrub, Maquis and Garrigue, Phygrana	65
N09	Dry grassland, Steppes	65
N10	Humid grassland, Mesophile grassland	65
N11	Alpine and sub-Alpine grassland	65
N14	Improved grassland	65
N15	Other arable land	65
N16	Broad-leaved deciduous woodland	65
N17	Coniferous woodland	65
N19	Mixed woodland	65
N21	Non-forest areas cultivated with woody plants (including Orchards, groves, Vineyards, Dehesas)	65
N22	Inland rocks, Screes, Sands, Permanent Snow and ice	65
N23	Other land (including Towns, Villages, Roads, Waste places, Mines, Industrial sites)	65
N25	Grassland and scrub habitats (general)	65
N26	Woodland habitats (general)	65

4.3 Threats code

CODE	DESCRIPTION	PAGE NO
A01	Cultivation	65
A02	Modification of cultivation practices	65
A03	Mowing / cutting of grassland	65
A04	Grazing	65
A05	Livestock farming and animal breeding (without grazing)	65
A06	Annual and perennial non-timber crops	65
A07	Use of biocides, hormones and chemicals	65
A08	Fertilisation	65
A10	Restructuring agricultural land holding	65
A11	Agriculture activities not referred to above	65
B01	Forest planting on open ground	65
B02	Forest and Plantation management & use	65
B03	Forest exploitation without replanting or natural regrowth	65
B04	Use of biocides, hormones and chemicals (forestry)	65
B06	Grazing in forests/ woodland	65
B07	Forestry activities not referred to above	65
C01	Mining and quarrying	65
C02	Exploration and extraction of oil or gas	65
C03	Renewable abiotic energy use	65
D01	Roads, paths and railroads	65
D02	Utility and service lines	65
D03	Shipping lanes, ports, marine constructions	65
D04	Airports, flightpaths	65
D05	Improved access to site	65
E01	Urbanised areas, human habitation	65
E02	Industrial or commercial areas	65

CODE	DESCRIPTION	PAGE NO
E03	Discharges	65
E04	Structures, buildings in the landscape	65
E06	Other urbanisation, industrial and similar activities	65
F01	Marine and Freshwater Aquaculture	65
F02	Fishing and harvesting aquatic ressources	65
F03	Hunting and collection of wild animals (terrestrial), including damage caused by game (excessive density), and taking/removal of terrestrial animals (including collection of insects, reptiles, amphibians, birds of prey, etc., trapping, poisoning, poaching, predator control, accidental capture (e.g. due to fishing gear), etc.)	65
F04	Taking / Removal of terrestrial plants, general	65
F05	Illegal taking/ removal of marine fauna	65
F06	Hunting, fishing or collecting activities not referred to above	65
G01	Outdoor sports and leisure activities, recreational activities	65
G02	Sport and leisure structures	65
G03	Interpretative centres	65
G04	Military use and civil unrest	65
G05	Other human intrusions and disturbances	65
H01	Pollution to surface waters (limnic & terrestrial, marine & brackish)	65
H02	Pollution to groundwater (point sources and diffuse sources)	65
H03	Marine water pollution	65
H04	Air pollution, air-borne pollutants	65
H05	Soil pollution and solid waste (excluding discharges)	65
H06	Excess energy	65
H07	Other forms of pollution	65
I01	Invasive non-native species	65
I02	Problematic native species	65
I03	Introduced genetic material, GMO	65
J01	Fire and fire suppression	65
J02	Human induced changes in hydraulic conditions	65
J03	Other ecosystem modifications	65
K01	Abiotic (slow) natural processes	65
K02	Biocenotic evolution, succession	65
K03	Interspecific faunal relations	65
K04	Interspecific floral relations	65
K05	Reduced fecundity/ genetic depression	65
L05	Collapse of terrain, landslide	65
L07	Storm, cyclone	65
L08	Inundation (natural processes)	65
L10	Other natural catastrophes	65
M01	Changes in abiotic conditions	65
M02	Changes in biotic conditions	65
U	Unknown threat or pressure	65
XO	Threats and pressures from outside the Member State	65

5.1 Designation type codes

CODE	DESCRIPTION	PAGE NO
UK00	No Protection Status	67
UK01	National Nature Reserve	67
UK02	Marine Nature Reserve	67
UK04	Site of Special Scientific Interest (UK)	67

APPENDIX 29

European Site Conservation Objectives for Peter's Pit SAC

European Site Conservation Objectives for Peter's Pit Special Area of Conservation Site Code: UK0030237

With regard to the natural habitats and/or species for which the site has been designated (the 'Qualifying Features' listed below), and subject to natural change;

Ensure that the integrity of the site is maintained or restored as appropriate, and ensure that the site contributes to achieving the Favourable Conservation Status of its Qualifying Features, by maintaining or restoring;

- **The extent and distribution of the habitats of qualifying species**
- **The structure and function of the habitats of qualifying species**
- **The supporting processes on which the habitats of qualifying species rely**
- **The populations of qualifying species, and,**
- **The distribution of qualifying species within the site.**

This document should be read in conjunction with the accompanying *Supplementary Advice* document, which provides more detailed advice and information to enable the application and achievement of the Objectives set out above.

Qualifying Features:

S1166. *Triturus cristatus*; Great crested newt

Explanatory Notes: European Site Conservation Objectives

These Conservation Objectives are those referred to in the Conservation of Habitats and Species Regulations 2017 as amended from time to time (the “Habitats Regulations”). They must be considered when a competent authority is required to make a ‘Habitats Regulations Assessment’, including an Appropriate Assessment, under the relevant parts of this legislation.

These Conservation Objectives and the accompanying Supplementary Advice (where available) will also provide a framework to inform the measures needed to conserve or restore the European Site and the prevention of deterioration or significant disturbance of its qualifying features.

These Conservation Objectives are set for each habitat or species of a Special Area of Conservation (SAC). Where the objectives are met, the site will be considered to exhibit a high degree of integrity and to be contributing to achieving Favourable Conservation Status for that species or habitat type at a UK level. The term ‘favourable conservation status’ is defined in regulation 3 of the Habitats Regulations.

Publication date: 27 November 2018 (version 3). This document updates and replaces an earlier version dated 31 March 2014 to reflect the consolidation of the Habitats Regulations in 2017.

APPENDIX 30

Supplementary Advice to the Conservation Objectives for Peter's Pit SAC

European Site Conservation Objectives: Supplementary advice on conserving and restoring site features

Peter's Pit Special Area of Conservation (SAC) (UK0030237)

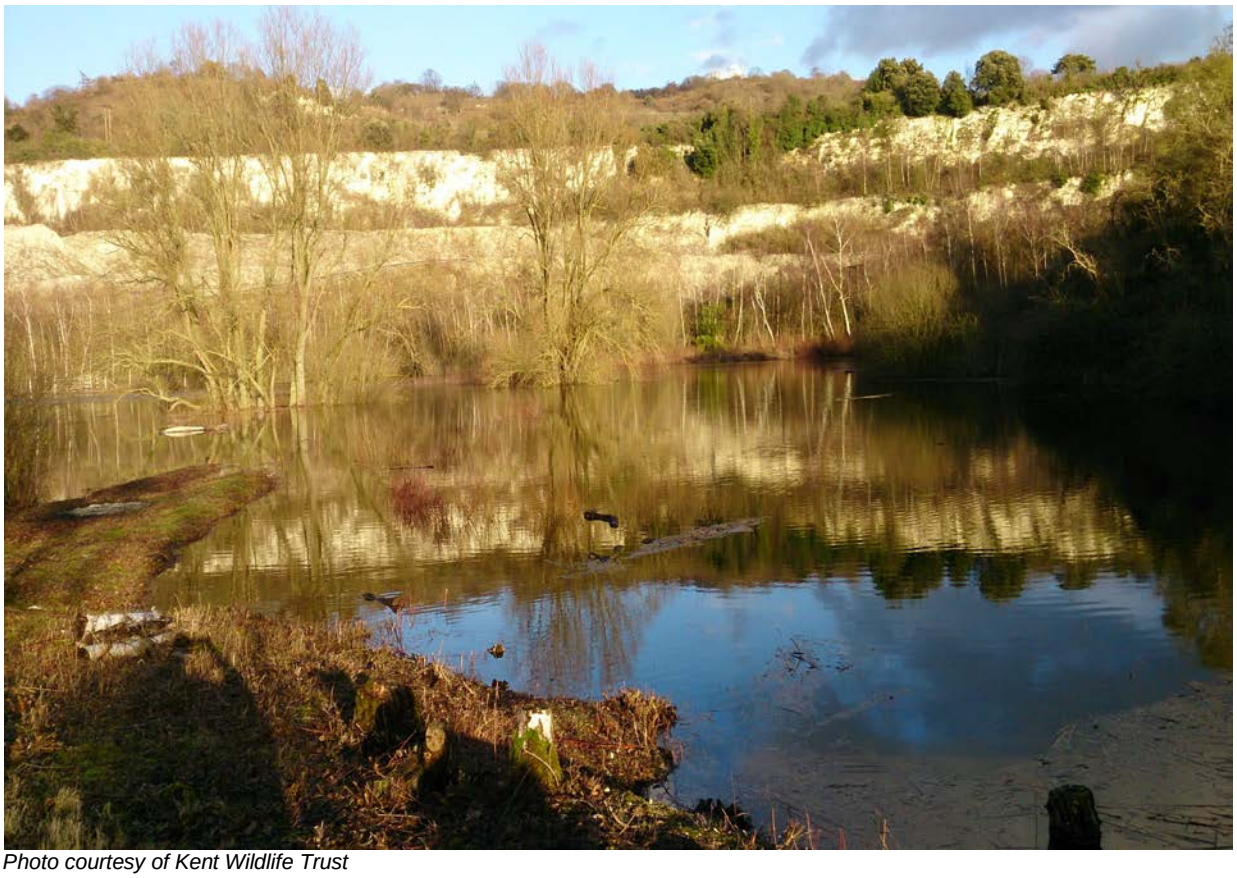

Photo courtesy of Kent Wildlife Trust

Date of Publication: 20 May 2015

About this document

This document provides Natural England's supplementary advice about the European Site Conservation Objectives relating to Peter's Pit SAC.

This advice should therefore be read together with the SAC Conservation Objectives available here.

This supplementary advice to the Conservation Objectives describes in more detail the range of ecological attributes which are most likely to contribute to a site's overall integrity and the minimum targets each qualifying feature needs to achieve in order to meet the site's objectives.

You should use the Conservation Objectives, this Supplementary Advice and any case-specific advice given by Natural England, when developing, proposing or assessing an activity, plan or project that may affect this site. Any proposals or operations which may affect the site or its qualifying features should be designed so they do not adversely affect any of the attributes listed in the objectives and supplementary advice.

The tables provided below bring together the findings of the best available scientific evidence relating to the site's qualifying features, which may be updated or supplemented in further publications from Natural England and other sources. The local evidence used in preparing this supplementary advice has been cited. The references to the national evidence used are available on request. Where evidence and references have not been indicated, Natural England has applied ecological knowledge and expert judgement. You may decide to use other additional sources of information.

In many cases, the attribute targets shown in the tables indicate whether the current objective is to 'maintain' or 'restore' the attribute. This is based on the best available information, including that gathered during monitoring of the feature's current condition. As new information on feature condition becomes available, this will be added so that the advice remains up to date.

The targets given for each attribute do not represent thresholds to assess the significance of any given impact in Habitats Regulations Assessments. You will need to assess this on a case-by-case basis using the most current information available.

Some, but not all, of these attributes can also be used for regular monitoring of the actual condition of the designated features. The attributes selected for monitoring the features, and the standards used to assess their condition, are listed in separate monitoring documents, which will be available from Natural England.

These tables do not give advice about SSSI features or other legally protected species which may also be present within the European Site.

If you have any comments or queries about this Supplementary Advice document please contact your local Natural England adviser or email HDIRConservationObjectives@naturalengland.org.uk

About this site

European Site information

Name of European Site	Peter's Pit Special Area of Conservation
Location	Kent The designated boundary of this site can be viewed here on the MAGIC website.
Designation Date	May 2001
Qualifying Features	See below
Designation Area	28.3 hectares
Designation Changes	Not applicable
Feature Condition Status	Details of the feature condition assessments made at this site can be found using Natural England's Designated Sites System
Names of component Sites of Special Scientific Interest (SSSIs)	Peter's Pit SSSI
Relationship with other European or International Site designations	Not applicable.

Site background and geography

Covering a total area of 28.91 hectares, Peter's Pit is an old chalk quarry situated in the North Downs in north Kent, with large ponds situated amongst grassland, scrub and woodland. The ponds have widely fluctuating water levels and large great crested newt *Triturus cristatus* populations have been recorded breeding here.

About the qualifying features of the SAC

The following section gives you additional, site-specific information about this SAC's qualifying features. These are the natural habitats and/or species for which this SAC has been designated.

Qualifying species:

- **S1166 Great Crested Newt *Triturus cristatus***

  The great crested newt *Triturus cristatus* is the largest native British newt, reaching up to around 17cms in length. It has a granular skin texture (caused by glands which contain toxins making it unpalatable to predators), and in the terrestrial phase is dark grey, brown or black over most of the body, with a bright yellow/orange and black belly pattern.

  Adult males have distinctive jagged crests running along the body and tail. Newts require aquatic habitats for breeding. Eggs are laid singly on pond vegetation in spring, and larvae develop over summer to emerge in August – October, normally taking 2–4 years to reach maturity. Juveniles

spend most time on land, and all terrestrial phases may range a considerable distance from breeding sites.

Breeding sites are mainly medium-sized ponds, though ditches and other water body types may also be used less frequently. Ponds with ample aquatic vegetation (which is used for egg-laying) seem to be preferred. Great crested newts can be found in rural, urban and post-industrial settings, with populations less able to thrive where there are high degrees of fragmentation. The connectivity of the landscape is important, since great crested newts often occur in meta-populations that encompass a cluster of several or many ponds. This helps ensure the survival of populations even if sub-populations are affected by, for example, the temporary drying-out of breeding ponds.

The great crested newt is also fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended), making it a European Protected Species. A Licence may therefore be required for any activities likely to harm or disturb great crested newts.

Great Crested Newt (female)

Table 1: Supplementary Advice for Qualifying Features: S1166 Great Crested Newt *Triturus cristatus*

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
Supporting habitat: structure/function	Overall Habitat Suitability Index score	Maintain an overall Great Crested Newt Habitat Suitability Index score of no less than 0.8	The Habitat Suitability Index provides an overall measure of evaluating habitat quality and quantity for Great Crested Newts. The Index score lies between 0 and 1, with 1 representing optimal Great Crested Newt habitat. In general, the higher the index score the more likely the site is to support great crested newts. The HSI methodology is documented in ARG-UK Advice Note 5 (May 2010). The HSI should not be used as a substitute for more detailed surveys and consideration of other attributes where necessary.	
	Presence of ponds	Maintain the number and surface area of ponds present within the site. Number = 12 ponds Surface area = 1.06 ha	Ponds include breeding and non-breeding ponds, since the latter may be used for foraging or sustaining prey populations. The surface area of a pond is taken from when water reaches its highest level (excluding flooding events), which will usually be in the spring.	Habitat features extent from Natural England 2006 GIS dataset. 4 original ponds (2000) supplemented by 8 new ponds created by Kent Wildlife Trust (2012). This attribute will be periodically monitored as part of Natural England's site condition assessments.
	Permanence of ponds	Maintain the permanence of water within ponds present within the site	Ponds include breeding ponds as well as non-breeding ponds, since the latter may be used for foraging or sustaining prey populations. Ponds should have a high degree of permanence (i.e. they never or rarely dry out other than though natural drought) and this may be adversely affected by changes in the supply or flow of water (from either surface water and/or groundwater sources] to the ponds. At this SAC, The quarry ponds are located on bare chalk and depend on the water table in the chalk aquifer. The site has maintained a high newt population despite all the ponds being dry by early spring in some years.	This attribute will be periodically monitored as part of Natural England's site condition assessments.

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
			Although not ideal in such years it does have the benefit of restricting colonisation by fish. The more permanent ponds in the soil-stripped fields are a safeguard against prolonged droughts.	
Supporting habitat: structure/function	Cover of macrophytes	Maintain a high cover of macrophytes, typically between 50-80%, within ponds	Marginal and emergent vegetation are important components of a great crested newt pond as they provide excellent egg-laying sites. Good plants for this purpose include water forget-me-not *Myosotis scorpioides*, flote/sweet grass *Glyceria fluitans* and great hairy willowherb *Epilobium hirsutum*. They are, however, an integral part of the natural successional change of a waterbody and whilst it is preferable to have a good range and area of marginal plants, they should not extend across the entire water surface. In most circumstances it will be desirable to retain a fringe of marginal and emergent vegetation around at least half of a pond's edge. Where the marginal vegetation is particularly invasive, and provides no specific benefit to crested newts, it may be decided that its complete removal is necessary.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
	Invasive, non-native and/or introduced species	Ensure invasive non-native species are either rare or absent components of open water habitat supporting the great crested newt.	Submerged vegetation is an important component of the pond ecosystem, making it habitable to a wide range of animals, but too many plants can occasionally be undesirable for newts, if the water column becomes completely shaded and choked. Introduced or 'alien' submerged plants can grow very vigorously and dominate more beneficial native species. New Zealand stonecrop *Crassula helmsii* and Canadian pondweed *Elodea canadensis* are two examples to be avoided. In most instances, any introductions should be avoided and if present the complete removal of such species is usually recommended.	
	Supporting terrestrial habitat quality	Maintain the quality of terrestrial habitat likely to be utilised by Great Crested Newts, with no fragmentation of habitat by significant barriers to newt dispersal.	Great crested newts need both aquatic and terrestrial habitat. Good quality terrestrial habitat, particularly within 500m of the breeding ponds, provides important sheltering, dispersing and foraging conditions and can include all semi-natural habitat along with meadows, rough tussocky grassland, scrub, woodland, as well as 'brownfield' land or low-intensity farmland. Good quality terrestrial habitat for Great Crested Newts has structural diversity which can be provided by features such as hedges, ditches, stone walls, old farm buildings, loose stone/rocks, rabbit burrows and small mammal holes. Good habitat provides a range of invertebrates, such as earthworms, insects, spiders and slugs, on which Great Crested Newts are known to feed. Fragmentation refers to significant barriers to Great Crested Newt	

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
			movement such as walls and buildings, but not footpaths or tracks. Newts disperse over land to forage for food, and move between ponds. The distances moved during dispersal vary widely according to habitat quality and availability. At most sites, the majority of adults probably stay within 250m of the breeding pond but may well travel further if there are areas of high quality foraging and refuge habitat extending beyond this range.	
Supporting habitat: structure/function	Shading of ponds	Maintain pond perimeters generally free of shade (typically affecting less than 60% of the shoreline)	Shading from trees and/or buildings (not including emergent pond vegetation) can negatively affect the abundance of marginal vegetation in ponds, water temperature and the rate of hatching and development of great crested newt eggs and larvae.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
	Presence of fish and wildfowl	Ensure fish and wildfowl are either absent or rare in all ponds.	At high densities, waterfowl (i.e. most water birds such as ducks, geese and swans but excluding moorhen) can remove all aquatic vegetation, adversely affect water quality and create turbid pondwater conditions. Some may also actively hunt adult Great Crested Newts and their larvae. Similarly fish can be significant predators of Great Crested Newt larvae. The presence of waterfowl and fish can therefore reduce habitat suitability. These should be wholly absent from sites which support fewer than 5 ponds.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
Supporting processes (on which the feature or its supporting habitat relies)	Water quality	Maintain the quality of pondwaters within the site as indicated by the presence of an abundant and diverse invertebrate community.	As the clarity and chemical status of water bodies supporting Great Crested Newts can be subjective, the presence of an abundant and diverse community of freshwater invertebrates can be indicative of suitable water quality standards. Invertebrate groups present should include groups such as mayfly larvae and water shrimps. This will ensure ponds support a healthy (mainly invertebrate) fauna to provide food for developing great crested newt larvae and adults.	
Population (of the feature)	Population size	Maintain the abundance of the great crested newt population at a level which is above a peak mean of 332 adults, whilst avoiding deterioration from its current level as indicated by the	"This will ensure there is a viable population of the feature which is being maintained at or increased to a level that contributes as appropriate to its Favourable Conservation Status across its natural range in the UK. Due to the dynamic nature of population change, the target-value given for the population size or presence of this feature is considered to be the minimum standard for conservation/restoration measures to achieve. This minimum-value may be revised where there is evidence to show that a population's	The peak mean count is based on the three consecutive years (2002 – 2004) after the SSSI boundary was modified and

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
		latest mean peak count or equivalent	size or presence has significantly changed as a result of natural factors or management measures and has been stable at or above a new level over a considerable period (generally at least 10 years). The values given here may also be updated in future to reflect any strategic objectives which may be set at a national level for this feature. Given the likely fluctuations in numbers over time, any impact-assessments should focus on the current size of the site's population, as derived from the latest known or estimated level established using the best available data. This advice accords with the obligation to avoid deterioration of the site or significant disturbance of the species for which the site is designated, and seeks to avoid plans or projects that may affect the site giving rise to the risk of deterioration. Similarly, where there is evidence to show that a feature has historically been more abundant than the stated minimum target and its current level, the ongoing capacity of the site to accommodate the feature at such higher levels in future should also be taken into account in any assessment. Unless otherwise stated, the population size or presence will be that measured using standard methods, such as peak mean counts or breeding surveys. This value is also provided recognising there will be inherent variability as a result of natural fluctuations and margins of error during data collection. Whilst we will endeavour to keep these values as up to date as possible, local Natural England staff can advise that the figures stated are the best available. Estimating the average size of the GCN population will normally be based on the peak count of adults undertaken in the known peak season for the area, and in-year weather conditions; likely to be Mid-April to mid-May in central areas. The peak count is derived by summing the counts across the site on 'best' night for each season. Considerable natural between-year variation in population counts is frequent."	the SAC designated (2001), because prior to this counting was irregular. (The figure at al SSSI notification was 311 in 1985) This attribute will be periodically monitored as part of Natural England's site condition assessments.
Population (of the feature)	Population viability	Maintain the presence of Great Crested Newt eggs in breeding ponds at a level which is likely to maintain the abundance of the great crested newt population at or above its target level.	A "breeding pond" is defined as a pond in which egg-laying and successful metamorphosis (e.g. the pond doesn't dry up too soon) is likely to occur at least once every three years. The optimum time to survey for eggs is mid-March to mid-May. Presence of eggs can be recorded by day or night visits and surveys should be combined with visits for the adult component.	This attribute will be periodically monitored as part of Natural England's site condition assessments.
	Supporting	Maintain the connectivity of	Great Crested Newts often exist in metapopulations. A metapopulation is a	

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
	metapopulation	the SAC population with other closely-associated populations (either within or outside of the site boundary)	group of associated populations made up of newts which breed in, and live around, a cluster of ponds. There will be some interchange of newts between these populations, even though most adults consistently return to the same pond to breed, and so it will be important to avoid the isolation of these populations from each other. A metapopulation associated with a SAC may occur and extend outside of the designated site boundary. The connectivity of the wider local landscape to the SAC may therefore be important as this may help the safe movement of animals and ensure the survival of the overall population even if sub-populations are temporarily affected by, for example, pond desiccation or fish introductions.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Conservation measures	Maintain management or other measures (within and/or outside the site boundary as appropriate) necessary to maintain or restore the feature and/or its supporting habitat	Active and ongoing conservation management is needed to protect, maintain or restore this feature at this site. Further details about the necessary conservation measures for this site can be provided by contacting Natural England. This information will typically be found within, where applicable, supporting documents such as Natura 2000 Site Improvement Plan, site management strategies or plans, the Views about Management Statement for the underpinning SSSI and/or management agreements.	Natural England's Views about the Management of the SSSI which underpin this SAC are available from http://www.sssi.naturalengland.org.uk/Special/sssi/search.cfm
Supporting habitat: extent and distribution	Extent of supporting habitat	Maintain the extent of habitat which supports the feature at: Broadleaved, Mixed and Yew Woodlands: 13.89 ha Lowland calcareous grassland/inland rock/scrub mosaic: 13.94 ha	In order to contribute towards the objective of achieving an overall favourable conservation status of the feature at a UK level, it is important to maintain or if appropriate restore the extent of supporting habitats and their range within this SAC. The information available on the extent and distribution of supporting habitat used by the feature may be approximate depending on the nature, age and accuracy of data collection, and may be subject to periodic review in light of improvements in data. The broad habitats known or likely to support the feature at this SAC are: standing water, lowland calcareous grassland/inland rock/scrub mosaic.	Habitat extent taken from NE GIS 2006 dataset
	Distribution of supporting habitat	Maintain the distribution and continuity of the feature's supporting habitat, including where applicable its component vegetation types and associated transitional vegetation types, across the	A contraction in the range, or geographic spread, of the supporting habitat (and its component vegetation) across the site will reduce its overall area, the local diversity and variations in its structure and composition, and may undermine the resilience of the Great Crested Newt feature to adapt to future environmental changes. Contraction may also reduce and break up the continuity of a habitat within	Habitat extent taken from NE GIS 2006 dataset

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
		site	a site and how well the species feature is able to occupy and use habitat within the site. Such fragmentation may have a greater amount of open edge habitat which will differ in the amount of light, temperature, wind, and even noise that it receives compared to its interior. These conditions may not be suitable for this feature and this may affect its viability.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Adaptation and resilience	Maintain the feature's ability, and that of its supporting habitat, to adapt or evolve to wider environmental change, either within or external to the site	This recognises the increasing likelihood of supporting habitat features needing to absorb or adapt to wider environmental changes. Resilience may be described as the ability of an ecological system to cope with, and adapt to environmental stress and change whilst retaining the same basic structure and ways of functioning. Such environmental changes may include changes in sea levels, precipitation and temperature for example, which are likely to affect the extent, distribution, composition and functioning of a feature within a site. The vulnerability and response of features to such changes will vary. Using best available information, any necessary or likely adaptation or adjustment by the feature and its management in response to actual or expected climatic change should be allowed for, as far as practicable, in order to ensure the feature's long-term viability.	
Supporting habitat: structure/function	Soils, substrate and nutrient cycling	Maintain the properties of the underlying soil types, including structure, bulk density, total carbon, pH, soil nutrient status and fungal:bacterial ratio, within typical values for the supporting habitat	Soil and substrate supports basic ecosystem function and is a vital part of the natural environment. Its properties strongly influence the colonisation, growth and distribution of those plant species which together form vegetation types, and therefore provides a habitat used by a wide range of organisms. Soil biodiversity has a vital role to recycle organic matter. Changes to natural soil properties may therefore affect the ecological structure, function and processes associated with the supporting habitat of this Annex I feature.	
Supporting processes (on which the feature and/or its supporting habitat relies)	Air quality	Maintain or restore as necessary the concentrations and deposition of air pollutants to at or below the site-relevant Critical Load or Level values given for this feature of the site on the Air Pollution Information System (www.apis.ac.uk).	The supporting habitat type is considered sensitive to changes in air quality. Exceedance of critical values for air pollutants may modify the chemical status of its substrate, accelerating or damaging plant growth, altering its vegetation structure and composition and reducing supporting habitat quality and population viability of this feature. Critical Loads and Levels are recognised thresholds below which such harmful effects on sensitive UK habitats will not occur to a significant level, according to current levels of scientific understanding. There are critical levels for ammonia (NH3), oxides of nitrogen (NOx) and sulphur dioxide	More information about site-relevant Critical Loads and Levels for this SAC is available by using the 'search by site' tool on the Air Pollution Information System (www.apis.ac.uk).

Attributes		Targets	Supporting and/or Explanatory Notes	Sources of site-based evidence (where available)
			(SO2), and critical loads for nutrient nitrogen deposition and acid deposition. There are currently no critical loads or levels for other pollutants such as Halogens, Heavy Metals, POPs, VOCs or Dusts. These should be considered as appropriate on a case-by-case basis. Ground level ozone is regionally important as a toxic air pollutant but flux-based critical levels for the protection of semi-natural habitats are still under development. It is recognised that achieving this target may be subject to the development, availability and effectiveness of abatement technology and measures to tackle diffuse air pollution, within realistic timescales.	
Version Control Advice last updated: 20 May 2015 – previous version has been incorporated into a revised 2015 document template; minor edits to generic text made.				
Variations from national feature-framework of integrity-guidance: None				

Document control information		
Status of this Version	V2	
Prepared by	Phil Williams	**Date** 21 Jan 2014
Other notes	This advice supercedes previous supplementary advice published on 31 March 2014.	
Quality assurance information		
Checked by:	Rosemary Godfrey	**Date** 23 Jan 2014
Reviewed by:	Steve Clifton & Richard Leishman	**Date** 03 March 2014
Finalised for publication on:	V2 - 20 May 2015	

APPENDIX 31

Peter’s Pit SSSI Citation

COUNTY: KENT SITE NAME: PETERS PIT

DISTRICT: TONBRIDGE AND MALLING

Status: Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

Local Planning Authority: TONBRIDGE AND MALLING DISTRICT COUNCIL

National Grid Reference: TQ 717629 Area: 24.0 (ha.) 59.3 (ac.)

Ordnance Survey Sheet 1:50,000: 178/188 1:10,000: TQ 76 SW

Date Notified (Under 1949 Act): – Date of Last Revision: –

Date Notified (Under 1981 Act): 1986 Date of Last Revision: –

Other Information:
A new site.

Reasons for Notification:
This site supports one of the largest populations of the great crested newt *Triturus cristatus* in Britain, a species afforded special protection under the Wildlife and Countryside Act 1981. Two other newt species also breed here together with frogs and at least two species of reptile. Little is known about the rest of the fauna of the site, although the areas of scrub are thought to support a number of breeding birds.

An active chalk quarry until about 20 years ago, Peters Pit has an undulating terrain in which many rain fed ponds, of various sizes, have developed. Those which dry up early in the season are of less interest, but five ponds are sufficiently large to support very substantial populations of amphibians, particularly the great crested newt. The value of the site for newts is enhanced by the presence, around the edges and between the ponds, of areas of scrub with loose rock which serve as day and winter refuges. Aquatic vegetation provides shelter in the pond environment.

Terrestrial habitats represented include chalk grassland and ruderal vegetation as well as scrub and developing woodland. Many herbs characteristic of the chalk are present such as bee orchid *Ophrys apifera*, autumn gentian *Gentianella amarella* and basil thyme *Acinos arvensis*. Lime-loving shrubs are also widespread; wild privet *Ligustrum vulgare*, dogwood *Cornus sanguinea* and the climbing traveller's joy *Clematis vitalba* being particularly frequent. Two aquatic plants which are scarce in Kent are found in the ponds, viz mare's tail *Hippuris vulgaris* and the water crowfoot *Ranunculus aquatilis*.

In addition to the large numbers of great crested newts, smaller numbers of the smooth newt *T. vulgaris* and palmate newt *T. helveticus* also occur, along with

the common frog *Rana temporaria* and two reptiles: the grass snake *Natrix natrix* and the adder *Vipera berus*. Birds recorded from the site include nightingale and several species of warbler.

APPENDIX 32

Peter's Pit SSSI Condition Assessment (May 2019)

Report generated on: 02 May 2019

Main Habitat	Responsible Officer	Unit Number	Unit Id	Area (ha)	NNR Overlap Area (ha)	Latest Assessment Date	Assessment Description	Comment	Adverse Condition Reasons
Peter's Pit SSSI - KENT (TONBRIDGE AND MALLING)									
STANDING OPEN WATER AND CANALS	Phil Williams	002	1016203	0.0766	0.00	15/10/2010	Favourable	The site is in good condition and current management appears to be appropriate to maintain suitable conditions for the great crested newt population. A high diversity of habitats is present including features of value to great crested newts throughout their life cycle. Great crested newt monitoring data is available for each year from 1985 to 2007. This indicates that newt numbers fluctuate considerably, largely in relation to water availability in the breeding ponds. However, there is no indication of a trend of declining numbers and counts indicate that numbers are within target in most years. Water levels in the ponds in the former pit are dependent upon groundwater supply and rainfall. Only one of the ponds in this part holds water at present. This pond has tall, emergent growth of bulrush but has no submerged plants so is not currently ideal breeding habitat for newts. However, water quality appears good and there is good terrestrial habitat nearby. The small, recently established ponds in the former arable fields all hold water of varying depths. Water quality appears good in all of the ponds and all have a range of emergent and submerged aquatic plants. These include spike rush, water plantain, water milfoil, broad-leaved pondweed, water mint and purple loosestrife. The northernmost pond has a lot of tall emergent bulrush and reedmace and might benefit from management to reduce their dominance. But all of these ponds are in suitable condition for breeding great crested newts. The surrounding terrestrial habitat is in suitable	

STANDING OPEN WATER AND CANALS	Phil Williams	003	1016204	0.1425	0.00	15/10/2010	Favourable	The site is in good condition and current management appears to be appropriate to maintain suitable conditions for the great crested newt population. A high diversity of habitats is present including features of value to great crested newts throughout their life cycle. Great crested newt monitoring data is available for each year from 1985 to 2007. This indicates that newt numbers fluctuate considerably, largely in relation to water availability in the breeding ponds. However, there is no indication of a trend of declining numbers and counts indicate that numbers are within target in most years. Water levels in the ponds in the former pit are dependent upon groundwater supply and rainfall. Only one of the ponds in this part holds water at present. This pond has tall, emergent growth of bulrush but has no submerged plants so is not currently ideal breeding habitat for newts. However, water quality appears good and there is good terrestrial habitat nearby. The small, recently established ponds in the former arable fields all hold water of varying depths. Water quality appears good in all of the ponds and all have a range of emergent and submerged aquatic plants. These include spike rush, water plantain, water milfoil, broad-leaved pondweed, water mint and purple loosestrife. The northernmost pond has a lot of tall emergent bulrush and reedmace and might benefit from management to reduce their dominance. But all of these ponds are in suitable condition for breeding great crested newts. The surrounding terrestrial habitat is in suitable	
STANDING OPEN WATER AND CANALS	Phil Williams	004	1016205	0.1732	0.00	15/10/2010	Favourable	The site is in good condition and current management appears to be appropriate to maintain suitable conditions for the great crested newt population. A high diversity of habitats is present including features of value to great crested newts throughout their life cycle. Great crested newt monitoring data is available for each year from 1985 to 2007. This indicates that newt numbers fluctuate considerably, largely in relation to water availability in the breeding ponds. However, there is no indication of a trend of declining numbers and counts indicate that numbers are within target in most years. Water levels in the ponds in the former pit are dependent upon groundwater supply and rainfall. Only one of the ponds in this part holds water at present. This pond has tall, emergent growth of bulrush but has no submerged plants so is not currently ideal breeding habitat for newts. However, water quality appears good and there is good terrestrial habitat nearby. The small, recently established ponds in the former arable fields all hold water of varying depths. Water quality appears good in all of the ponds and all have a range of emergent and submerged aquatic plants. These include spike rush, water plantain, water milfoil, broad-leaved pondweed, water mint and purple loosestrife. The northernmost pond has a lot of tall emergent bulrush and reedmace and might benefit from management to reduce their dominance. But all of these ponds are in suitable condition for breeding great crested newts. The surrounding terrestrial habitat is in suitable	

BROADLEAVED, MIXED AND YEW WOODLAND - Lowland	Phil Williams	005	1016206	28.3003	0.00	15/10/2010	Favourable	The site is in good condition and current management appears to be appropriate to maintain suitable conditions for the great crested newt population. A high diversity of habitats is present including features of value to great crested newts throughout their life cycle. Great crested newt monitoring data is available for each year from 1985 to 2007. This indicates that newt numbers fluctuate considerably, largely in relation to water availability in the breeding ponds. However, there is no indication of a trend of declining numbers and counts indicate that numbers are within target in most years. Water levels in the ponds in the former pit are dependent upon groundwater supply and rainfall. Only one of the ponds in this part holds water at present. This pond has tall, emergent growth of bulrush but has no submerged plants so is not currently ideal breeding habitat for newts. However, water quality appears good and there is good terrestrial habitat nearby. The small, recently established ponds in the former arable fields all hold water of varying depths. Water quality appears good in all of the ponds and all have a range of emergent and submerged aquatic plants. These include spike rush, water plantain, water milfoil, broad-leaved pondweed, water mint and purple loosestrife. The northernmost pond has a lot of tall emergent bulrush and reedmace and might benefit from management to reduce their dominance. But all of these ponds are in suitable condition for breeding great crested newts. The surrounding terrestrial habitat is in suitable	

APPENDIX 33

Indicative Recreation Plan (Drawing Ref 11047 008 Rev A) (PRC Architects)

Figured dimensions only are to be used. All dimensions to be checked onsite. Differences between drawings and between drawings and specification or bills of quantities to be reported to the PRC Group.

Revisions:	Drawn / Chkd:	Date:
A Issued for Planning.	TG/GS	17.05.2019

LEGEND

- Strategic landscape
- Balancing swales
- Dog walk route 01
- Dog walk route 02
- Dog walk route 03
- Dog walk route 04
- Fenced off-lead area 01
- Fenced off-lead area 02
- Fenced off-lead area 03
- Fenced off-lead area 04
- Fenced off-lead area 05
- Fenced off-lead area 06
- Play - indicative location

Dog walk 01
Distance: 1.9km

Dog walk 02
Distance: 1.4km

Dog walk 03
Distance: 1.5km

Dog walk 04
Distance: 1.2km

Off-lead area

Off-lead area

Off-lead area

Off-lead area

01

02

03

04

05

06

Lower Rainham

Client:
A.C. GOATHAM & SON

PRC

Project:
PUMP FARM & BLOOR FARM
LOWER RAINHAM, KENT

24 Church St West,
Woking, Surrey,
GU21 6HT

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Drawing Title:
Indicative Recreation Plan

Scale @ A0:	Checked by:	Date:
1:2000	GS	May 2019

Job No:	Stage:	Drawing No:	Rev:
11047	PL	008	A

Issue Status:
- ☐ Construction
- ☐ Preliminary
- ☐ Information
- ☐ Approval
- ☐ Tender

Architecture
Planning
Master Planning
Urban Design
Interiors
Landscape

Offices
Woking
London
Milton Keynes
Warsaw

PRC Architecture & Planning

INDICATIVE RECREATION PLAN

N

0 50 100 150 200m

Scale 1:2000

D:\11047 Lower Rainham Masterplan\3_Planning\Dwg Sheets\11047 PL 008 - Indicative Recreation Plan.dwg