ASSESSMENTS OF POTENTIAL EFFECTS ON ESTUARINE WATERFOWL ARISING FROM PROPOSED MINERAL EXTRACTION ON LAND AT LIME KILN FARM, WANGFORD QUARRY, HILL ROAD, WANGFORD, SUFFOLK NR34 8AR
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1. SUMMARY

1.1.1 CEMEX UK Operations Ltd are seeking planning permission for an extension of their existing consented Wangford Quarry eastward into Lime Kiln Farm, Hill Road, Wangford, Suffolk NR34 8AR (hereafter referred to as ‘The Site’).

1.1.2 Minsmere-Walberswick Special Protection Area (SPA) and Ramsar is located approximately 240 m to the south, and there was a perceived potential that birds present in the SPA and Ramsar might depend on the farmland within The Site. Were that the case, there could be a requirement for the Mineral Planning Authority to undertake a Habitats Regulations Assessment (HRA) as part of the application.

1.1.4 In order to inform the decision of whether HRA would be required, CEMEX Operations UK Ltd commissioned AEcol to review the suitability of The Site for relevant bird species and undertake a focussed survey to truth the review and quantify used of the site by the target species.

1.1.5 The review concluded that the only Phase 1 habitat that might be potentially exploited by waterfowl comprises 21.21 ha of arable which was considered superficially suitable for nine species. However, no records of waterfowl occurring within The Site are held by Suffolk Biodiversity Information Service.

1.1.6 The survey was undertaken on four dates, as follows: 19th and 30th January 2018; 21st February 2018; and, 6th March 2018. The only waterfowl species observed to use the site was curlew Numenius arquata, with a maximum 26 birds recorded on 30th January. Curlew are not listed in the citations for the SPA, SSSI or Ramsar and no such species were observed.

1.1.7 The review and survey were performed to a high standard by fully competent personnel. The results informed a reasoned discussion as to the potential for off-site effects brought about by the proposed mineral development of Lime Kiln Farm as an extension of Wangford Quarry. The conclusion is that there are no grounds to predict a significant negative effect on the Minsmere-Walberswick SPA and Ramsar site resulting from extension of quarry workings into the Lime Kiln Farm site. Accordingly, there is no requirement for the competent authority to undertake a Habitats Regulations Assessment. Suffolk County Council’s own ecology team have had sight of the results and are in full agreement with the conclusion reached.
2. INTRODUCTION

2.1 Background to development

2.1.1 CEMEX UK Operations Ltd are seeking planning permission for an extension of their existing consented Wangford Quarry eastward into Lime Kiln Farm, Hill Road, Wangford, Suffolk NR34 8AR (hereafter referred to as ‘The Site’). Figure 1 shows the location and extent of The Site.

![Figure 1. The location and extent of The Site.](image)

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2.1.2 Minsmere-Walberswick Special Protection Area (SPA) and Ramsar is located approximately 240 m to the south of The Site. In addition, The Site is c. 1 km from the River Blyth, a tidal river with intertidal flats which forms a component habitat within the SPA and Ramsar. Figure 2 shows the location of Minsmere-Walberswick SPA and Ramsar in relation to The Site.

2.1.3 SPA are classified by the UK Government under the EC Birds Directive and comprise areas of the most important habitat for rare species of birds (i.e. listed on Annex I to the Directive), and also migratory species, within the European Union. SPA are legally protected under the *Wildlife & Countryside Act 1981* (as amended).

2.1.4 Ramsar sites were designated under the *Ramsar Convention on Wetlands of International Importance* as holding populations of European Importance of bird species listed on Annex I to the Directive.
2.1.5 It is known (e.g. Cramp & Simmonds 1977, Hale 1980, Prater 1981, Cramp & Simmonds 1983) that some wildfowl and wader species that utilise estuarine habitats, especially the inter-tidal zone, also use suitable farmland for feeding or roosting or both. Due to the proximity of The Site to the SPA and Ramsar, and also the River Blyth (a tidal rive with intertidal flats which forms a component habitat within the classified sites), there was a perceived potential that birds present in the SPA and Ramsar might depend on the farmland within The Site. Were that the case, there could be a requirement for the Mineral Planning Authority to undertake a Habitats Regulations Assessment (HRA)¹ as part of the planning application.

2.1.6 In order to inform the decision of whether HRA would be required, CEMEX Operations UK Ltd commissioned AEcol to review the suitability of The Site for relevant bird species and undertake a focussed survey to truth the review and

¹ Article 6(3) and (4) of the Habitats Directive impose duties on all public bodies to follow strict regulatory procedures in order to protect Special Protection Areas and Ramsar Sites from the effects of mineral working. In order to gain permission for a development that falls within the Zone of Influence of a Special Protection Area / Ramsar, a developer must make the Competent Authority (in this context the Mineral Planning Authority) aware of the situation. The Competent Authority must assess whether there is a risk that the development proposed might result in a significant negative effect upon the Special Protection Area / Ramsar. If such a risk is identified, a Habitats Regulations Assessment will be required in order to first determine what that effect will be in qualitative and quantitative terms. The effects are then assessed against the perceived need of the development in order to decide whether it is in the overriding public interest.
quantify use of the site by the target species.

3. REVIEW METHOD, SURVEY METHOD & PERSONNEL

3.1 Review method

3.1.1 The review comprised:
   1. The identification and description of the pertinent legal mechanisms in respect of sites & species;
   2. The identification of the Phase 1 habitats present within The Site;
   3. The identification of which Phase 1 habitats might be exploited by waterfowl cited within the SPA and Ramsar notifications; and
   4. Collation of ornithological records held by the Local Records Centre, in order to identify whether there was pre-existing historic data that demonstrated occurrence of waterfowl within The Site.

3.2 Survey method

3.2.1 Survey was undertaken on four dates, as follows:
   - 19th January 2018;
   - 30th January 2018;
   - 21st February 2018; and
   - 6th March 2018.

3.2.2 All surveys were timed to coincide with high tides, extending from two hours before to two hours after high water in suitable weather conditions when soil was not frozen and invertebrate prey if present would be available to feeding birds.

3.2.3 The surveys were carried out from a vehicle parked to enable the whole site to be observed but without causing birds to avoid using it. Birds were counted into and out of the site, the time of each movement was recorded and plotted on a base plan of the site.

3.3 Personnel

Review

3.3.1 The Phase 1 habitat survey was performed by Henry Andrews MSc CEcol MCIEEM. The identification of the habitats that might be exploited by waterfowl was performed by John Andrews. The review of historic biological data was performed by Heather Anning BSc.

Survey

3.3.2 The survey was designed by John Andrews and performed by Christopher Bridge BSc (Hons).
Reporting

3.3.3 This report was written by John Andrews and Henry Andrews.

Statements of competence

3.3.4 Henry Andrews (AEcol) has competence in botanical and faunal surveys. In addition to a Master’s Degree in Biological Recording and Species Identification, he is a Chartered Ecologist and Full member of the CIEEM. Henry has 13 years’ experience of conducting Ecological Impact Assessment (EcIA) from Preliminary Ecological Appraisal through to successful application.

3.3.5 John Andrews (AEcol) has over 40 years’ experience as a professional ornithologist.

3.3.6 Heather Anning (AEcol) has a Bachelor’s Degree in Ecology and the Environment and is fully competent in the use of historic and field data within structural appraisals.

3.3.7 Christopher Bridge (Abrehart Ecology Ltd on sub-contract from AEcol) is a permit bird-ringer and holds Schedule 1 licence for ringing nesting birds and disturbing a range of rare bird species.

4. REVIEW RESULTS

4.1 Pertinent legal mechanisms: sites & species

4.1.1 Legislative notifications pertinent to this assessment comprise: -

1. Minsmere-Walberswick Special Protection Area (SPA);
2. Minsmere-Walberswick Heaths and Marshes SSSI; and

4.1.2 Minsmere-Walberswick SPA is located approximately 240 m to the south of The Site and is 2018.92 ha in surface area. The SPA is cited for: -

- Habitats, comprising: marsh with dykes; reedbed; mudflats; lagoons; shingle; woodland; and, lowland heath; and
- Species, comprising: bittern Botaurus stellaris; marsh harrier Circus aeruginosus; hen harrier Circus cyaneus; avocet Recurvirostra avosetta; little tern Sternula albifrons; nightjar Caprimulgus europaeus; and, woodlark Lullula arborea.

4.1.3 The Conservation Objectives for the SPA (uploaded to the Natural England website in August 2014) include maintaining or restoring the population of each of the qualifying species and their distribution within wider SPA. The relevant qualifying wintering species that use intertidal habitats are white-fronted goose Anser albifrons, gadwall Anas strepera and shoveler Anas clypeata.

4.1.4 Minsmere-Walberswick Heaths and Marshes SSSI is located approximately 240 m
to the south of The Site and is 2325.89 ha in surface area. The SSSI is cited for a complex series of habitats, notably mudflats, shingle beach, reedbeds, heathland and grazing marsh which are exploited by breeding populations of reed warbler *Acrocephalus scirpaceus* and bearded tit *Panurus biarmicus*. Other notable breeding species include marsh harrier, bittern, Cetti’s warbler *Cettia cetti*, garganey *Anas querquedula* and water rail *Rallus aquaticus*.

4.4.5 In addition, The SSSI citation (last revised 1993) states that the tidal mudflats of the River Blyth estuary form feeding grounds for wildfowl and shorebirds, notably wigeon *Anas penelope*, shelduck *Tadorna tadorna*, redshank *Tringa totanus* and dunlin *Calidris alpina*.

4.1.6 Minsmere-Walberswick Ramsar is located approximately 240 m to the south of The Site and is 1995.25 ha in surface area.

4.1.7 The Information Sheet for the Ramsar site (complied January 1976) lists the wintering bird species included in the SPA citation with the addition of golden plover *Pluvialis apricaria*.

### 4.2 Phase 1 habitats

4.2.1 A Phase 1 survey undertaken of The Site on 3rd & 4th April 2018 identified 13 Phase 1 (JNCC 2010) habitat types comprising:

- A1.1.2 – Woodland and scrub / Woodland / Broadleaved / Plantation (0.04 ha);
- A1.3.2 – Woodland and scrub / Woodland / Mixed / Plantation (0.75 ha);
- A3 – Woodland and scrub / scattered trees (95 trees);
- B2.2 – Grassland and marsh / Neutral grassland / Semi-improved (0.24 ha);
- B4 – Grassland and marsh / Improved grassland (0.26 ha);
- C3.1 – Tall herb and fern / Other / Tall ruderal (0.13 ha);
- I2.1 – Rock exposure and waste / Artificial / Quarry (0.30 ha);
- J1.1 – Miscellaneous / Cultivated/disturbed ground / Arable (21.21 ha);
- J2.1 – Miscellaneous / Boundaries / Intact hedge (0.05 ha);
- J2.2 – Miscellaneous / Boundaries / Defunct hedge (0.13 ha);
- J2.3 – Miscellaneous / Boundaries / Hedge with trees (0.58 ha);
- J2.4 – Miscellaneous / Boundaries / Fence; and
- J4 – Miscellaneous / Bare ground (0.41 ha).

4.2.2 Figure 3 on the following page shows the location and extent of Phase 1 (JNCC 2010) habitats within The Site.
Figure 3. The location and extent of Phase 1 (JNCC 2010) habitats within The Site.

4.3 Phase 1 habitats potentially suitable for exploitation by waterfowl

4.3.1 The Phase 1 habitat that might be potentially exploited by waterfowl comprises the 21.21 ha of J1.1 – Miscellaneous / Cultivated/disturbed ground / Arable alone.

4.3.2 While some wader species feed only in the intertidal zone to which they are tied both by their food requirements and their feeding methods, others such as golden plover and curlew *Numenius arquata* may move between intertidal and terrestrial habitats which include farmland as well as wetlands. This is true of some wildfowl, including white-fronted geese and wigeon both of which will graze agricultural pasture and young cereals. The individual site or sites used at any one time will depend wholly on the availability of the required food resource plus an acceptable degree of safety from predation and disturbance.

4.3.3 Wading birds that feed in the inter-tidal zone may be obliged during high water (especially high-water springs) to move out of it entirely and roost on other land until the tide falls. Preferred roosting sites are open ground with all-round visibility to minimise the risk of predation and free from human disturbance. Farmland including large fields of pasture and tillage is often favoured and such sites may be
used regularly. In general, wildfowl have no requirement to form high-tide roosts, being able to remain afloat though the period.

4.3.4 It therefore follows that some but not all wintering wildfowl and waders from the Blyth estuary may utilise farmland in the vicinity, including that within The Site, for feeding and/or roosting.

4.3.5 Table 1 lists all those non-breeding (i.e. potentially present in winter) estuarine species cited in the SSSI citation and as qualifying features of the SPA and Ramsar site, plus any additional species known to occur in the Blyth estuary and to utilise farmland. The table also gives the latest available five year (2011/12 to 2015/16) mean peak count for each as given in the most recent Wetland Bird Survey (WeBS) report (Frost et al. 2017) and indicates whether the species may utilise farmland for feeding or as a high tide roost. Note that for this study, farmland is assumed to exclude waterbodies and other wetland habitats, which are not present in The Site.

Table 1. Use of farmland by relevant bird species

<table>
<thead>
<tr>
<th>SPECIES</th>
<th>LISTING</th>
<th>5 YEAR MEAN PEAK</th>
<th>USE MADE OF FARMLAND</th>
</tr>
</thead>
<tbody>
<tr>
<td>White-fronted goose</td>
<td>SPA</td>
<td>36</td>
<td>Grazes grasses and winter cereals.</td>
</tr>
<tr>
<td>Wigeon</td>
<td>SSSI</td>
<td>846</td>
<td>Grazes grasses and winter cereals, usually near wetlands. May roost.</td>
</tr>
<tr>
<td>Gadwall</td>
<td>SPA</td>
<td>6</td>
<td>None (requires waterbodies).</td>
</tr>
<tr>
<td>Shoveler</td>
<td>SPA</td>
<td>8</td>
<td>None (requires waterbodies).</td>
</tr>
<tr>
<td>Shelduck</td>
<td>SSSI</td>
<td>319</td>
<td>Occasionally occurs but does not feed (requires wetlands). Does not roost.</td>
</tr>
<tr>
<td>Avocet</td>
<td>SPA (breeding)</td>
<td>655</td>
<td>Does not feed (requires brackish and saline habitats). May roost.</td>
</tr>
<tr>
<td>Golden plover</td>
<td>Ramsar</td>
<td>83</td>
<td>Takes invertebrates and some plant material from pasture, winter cereals and ploughed land. May roost.</td>
</tr>
<tr>
<td>Lapwing Vanellus vanellus</td>
<td>Not listed</td>
<td>5,94</td>
<td>Takes invertebrates and some plant material from pasture, winter cereals and ploughed land. May roost.</td>
</tr>
<tr>
<td>Dunlin</td>
<td>SSSI</td>
<td>2,761</td>
<td>Does not feed (requires wetlands). May roost.</td>
</tr>
<tr>
<td>Redshank</td>
<td>SSSI</td>
<td>1,101</td>
<td>Does not feed (requires wetlands). May roost.</td>
</tr>
<tr>
<td>Curlew</td>
<td>Not listed</td>
<td>186</td>
<td>Takes invertebrates and some plant material from pasture, winter cereals and ploughed land. May roost.</td>
</tr>
</tbody>
</table>

4.3.6 Over winter 2017-18 the arable held winter cereals and some ploughed but
uncropped land and it was therefore concluded that nine species could occur, comprising: white-fronted goose; wigeon; shelduck; avocet; golden plover; lapwing; dunlin; redshank; and, curlew.

4.4 Collation of historic biological data

Data-search

4.4.1 A data-search performed by Suffolk Biodiversity Information Service (SBIS) returned an individual bird record within The Site, relating to a barn owl occupying a nest-box in a tree at TM47766 77683 in 2015.

Historic surveys

4.4.2 No formal accounts of historic bird surveys within The Site are held by SBIS.

5. BIRD SURVEY RESULTS

5.1.1 The only waterfowl species observed to use the site was curlew. A maximum of 17 were present on 19\textsuperscript{th} January, 26 on 30\textsuperscript{th} January, none on 21\textsuperscript{st} February and three on 6\textsuperscript{th} March. Most of the birds fed while present. Others were inactive at times but there was no concerted roosting behaviour. There was appreciable movement into and out of the site, with some birds being present for only a matter of minutes before flying off; on one occasion this could be attributed to disturbance by a tractor but the reason for other movements was not apparent. Table 2 list numbers and times of movements by date.

Table 2. Use of the site by curlew

<table>
<thead>
<tr>
<th>DATE</th>
<th>TIME</th>
<th>TIDE TIME &amp; HEIGHT</th>
<th>RESULTS BY NUMBERS &amp; TIME OF MOVEMENT IN OR OUT</th>
</tr>
</thead>
<tbody>
<tr>
<td>19/01/18</td>
<td>1006-1406hrs</td>
<td>1157hrs 2.2 m</td>
<td>No birds 1006-1107. 17 in 1107, 17 out 1110. 35 flew over of which 9 landed 1117. 9 out 1213. 8 in 1229, 8 out 1231. 23 flew over 1232. 21 flew over 1234. No birds 1235-1406 when survey ended.</td>
</tr>
<tr>
<td>30/01/18</td>
<td>0711-1111hrs</td>
<td>0911hrs 2.5 m</td>
<td>No birds 0711-0814. 23 in 0815, 23 out 0830. 19 in 0859. 5 in 0901-06. 2 in 0932. 26 out 1011. 15 in 1058. 7 in 1102. 22 out 1111 when survey ended.</td>
</tr>
<tr>
<td>21/02/18</td>
<td>1205-1605hrs</td>
<td>1414hrs 2.2 m</td>
<td>No birds.</td>
</tr>
<tr>
<td>06/03/18</td>
<td>1130-1532hrs</td>
<td>1332hrs 2.3 m</td>
<td>2 in 1130. 1 in 1134. 3 out 1143. 1 in 1320. 1 in 1324. 2 still present 1532 when survey ended.</td>
</tr>
</tbody>
</table>
5.1.2 Other relevant observations, all on 6th March, were of a flock of c. 100 curlew on nearby fields south of Lime Kiln Farm and of 27 lapwing and one golden plover that flew over The Site but did not land within it.

5.1.3 The results of the survey are consistent with evidence from the owner of the farm and from the manager of the Suffolk Wildlife Trust’s nearby Hen Reedbeds NNR both of whom had observed a flock of up to about 100 curlew to be present on farmland including this site during the winter months.

6. DISCUSSION

6.1.1 Curlew are not listed in the citations for the SPA, SSSI or Ramsar and no such species were observed.

6.1.2 Curlew feed principally on invertebrates including many species present in agricultural fields and also takes leaves and grain of cereals and grasses; as well as pasture and cereal crops, farmland sown to potatoes and turnips may be utilised (Cramp & Simmons 1983). Height and density of vegetation, frequency and extent of bare damp or wet patches, and the nature and frequency of disturbance are significant influences in the utilisation of sites (ibid).

6.1.3 The majority of the land surrounding the Blyth estuary is in agricultural use with winter cereals a principal crop. At the time of survey, the site held winter wheat, spring barley and an area of plough, all of which might offer feeding opportunities. It appears to be typical of the locality and to have no special attributes making it notably important for curlew. This may explain the variation in numbers present from date to date and within the survey periods, birds simply sampling and favouring fields in the locality depending on factors such as soil wetness, food abundance, disturbance and the presence of other birds contributing to security.

6.1.4 It seems reasonable to conclude that the suitability of a given area will vary from year to year depending on the crop and treatments and that the distribution of curlew will vary in response. Given that this site may become unsuitable at times under a continued farming regime and that there is extensive other farmland in the locality, there are no grounds to consider that the temporary loss of the agricultural land would have a significant negative effect on the species or on the population present in the Blyth estuary and SPA/Ramsar.

6.1.5 It is possible that the site may be used at times for feeding by golden plover and lapwing which would also be peripatetic in the locality and similarly unaffected by temporary loss of the area at The Site. White-fronted geese are particularly wary and
unlikely to feed close to farm buildings, while widgeon normally graze at sites close to water.

6.1.6 Turning to the possibility of the site being used at times as a high-tide roost, Prater (1981) states that a wide range of habitats is used, subject to their being free of disturbance, and that in most places fields are only used where crops are less than a few inches high and when spring tides cover saltmarshes. Over the winter period there is extensive farmland habitat around the Blyth estuary that is suitable for roosting if birds are obliged to move out of the SPA/Ramsar to do so.

7. CONCLUSION

7.1.1 It is concluded that there is no likelihood of a significant negative effect on the Minsmere-Walberswick SPA and Ramsar site resulting from extension of quarry workings into the Lime Kiln Farm site. Accordingly, there is no requirement for the competent authority to undertake a Habitats Regulations Assessment.

8. LIAISON

8.1.1 A draft of this report was sent to Andrew Murray-Wood MCIEEM who is the Senior Ecologist with Suffolk County Council who responded via email as follows: -

“Whilst brief, the Report is absolutely to the point and covers all of the ground that we were concerned about (and which we discussed) and has been carried out to a good, professional standard by well-known and reputable local Ecologists (Abrehart Ecology).

I think that the conclusions certainly mirror my own impressions of the fields at Lime Kiln Farm and dispels those residual concerns that I had about the impacts upon SPA features by a minerals extraction operation at this site.

Depending on the date of any application, it is quite possible that you will not need to repeat the over-wintering bird survey work but we would expect to see a suitable avoidance, mitigation, compensation and enhancement strategy set out in any Environmental Mitigation and Monitoring Plan (or equivalent document) which we will expect to accompany any application.”

9. SUMMING-UP

9.1.1 The review and survey were performed to a high standard by fully competent personnel. The results informed a reasoned discussion as to the potential for off-site effects brought about by the proposed mineral development of The Site as an extension of Wangford Quarry. The conclusion is that there are no grounds to predict a significant negative effect on the Minsmere-Walberswick SPA and Ramsar site
resulting from extension of quarry workings into the Lime Kiln Farm site. Suffolk County Council’s own ecology team have had sight of the results and are in full agreement with the conclusion reached.

10. REFERENCES
