



**LAND ADJACENT TO NO.4 CHALK PIT COTTAGES,  
GREEN FARM ROAD, SHORNE, KENT, DA12 3HN  
ECOLOGICAL IMPACT ASSESSMENT REPORT**



**October 2023**

**Ms S. Randhawa**

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This Report has been issued and amended as follows:

| Issue | Revision | Description     | Date     | Signed |
|-------|----------|-----------------|----------|--------|
| 1     | Final    | Issue to Client | 21.10.23 | APL    |

Approved by: A. P. Leftwich

Signed: \_\_\_\_\_

Position: Director

Date: \_\_\_\_\_

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## **1. INTRODUCTION**

- 1.1 Ms S. Randhawa has commissioned The Ash Partnership UK Ltd. to provide an Ecological Impact Assessment for land adjacent to No.4 Chalk Pit Cottages, Green Farm Lane in Shorne, Gravesend, Kent, DA12 3HN, hereafter referred to as the 'Site'.
- 1.2 The Site is bound to the south by No. 4 Chalk Pit Cottages, to the east by Green Farm Lane, to the north by No.1 Longten's Cottages and to the west by an ill-defined field edge, see *Site Location and Existing Block Plans* Dwg. 4074-001 dated June 2022 by Kent Planning Consultancy. It is shown on an aerial photograph in Appendix 1.
- 1.3 It is proposed to clear the Site vegetation and erect a new dwelling house, the surrounding landscaping to be designed to deliver biodiversity gain in excess of 10% by creating (i) floristically species-rich boundary scrub, (ii) wildflower grassland and (iii) bat roosting features on the new building.
- 1.4 This Report establishes the ecological baseline for the Site and, where adverse impacts are confirmed, sets out compensatory mitigation and enhancement measures. It also establishes how biodiversity gain can be delivered by the new residential development.

## **2. METHODOLOGY**

- 2.1 The Site was initially appraised in February 2023 and subsequently re-surveyed on 8<sup>th</sup> September 2023 in accordance with the *Handbook for Phase I Habitat Survey – A Technique for Environmental Audit* (JNCC, 2003).
- 2.2 Wherever possible each change in vegetation type was plotted, or otherwise the boundary of the vegetation type was established using logical features such as field margins, roads or watercourses. If relevant, semi-improved or unimproved habitats would also be considered in relation to the National Vegetation Classification (or NVC) system based upon Rodwell (1991 *et seq.*).

### **Protected Species Surveys**

- 2.3 The Site was also assessed for its potential to contain protected and/or nationally uncommon species. In particular, attention was given to the more likely species to occur such as Badger *Meles meles*, bats, reptiles, amphibians and breeding birds.

#### Reptiles

- 2.4 A heat trap survey was undertaken in September 2023 to establish whether reptile species are present within the Site.
- 2.5 Heat traps were set on 8<sup>th</sup> September 2023, and subsequently surveyed between 18<sup>th</sup> and 26<sup>th</sup> September 2023.

### 3. RESULTS

#### Surrounding Nature Conservation Assets

3.1 There are two statutorily protected sites within a 2km radius of the Site, see Appendix 2, these being in order of proximity to the Site:

- *South Thames Estuary & Marshes* Site of Special Scientific Interest (SSSI), a 5449.1ha area that lies approximately 960m to the NNW – see Appendix 3. This SSSI also forms part of the 5553.59ha *Thames Estuary & Marshes* Ramsar [Ref: GB1025], see Appendices 4a and 4b.
- *Shorne & Ashenbank* SSSI, a 197.44ha area that lies approximately 1.44km to the SSW of the Site, see citation in Appendix 5.

3.2 *South Thames Estuary & Marshes* SSSI - This is a Nature Conservation Review (NCR) Site that consists of an expanse of grazing marsh, saltmarsh, mudflats and shingle characteristic of the North Kent Marshes. It contains an outstanding assemblage of waterfowl that regularly exceeds 20,000 individuals, and supports many Nationally Rare/Scarce plants and invertebrates.

3.3 *Thames Estuary & Marshes* Ramsar - The area further qualifies under the following criteria:

- Criterion 2 because it supports populations of vulnerable, endangered and critically engendered species;
- Criterion 5 because it regularly supports 45,000 or more waterfowl; and
- Criterion 6 because it regularly supports 4% of Black-tailed Godwit *Limosa limosa islandica* during spring/autumn, and 1.6% of Knot *Calidris canutus islandica* and 1.1% of Dunlin *C. alpina alpina* during winter, respectively.

3.4 *Shorne & Ashenbank* SSSI – This is a complex of Ancient Woodland and plantations that include chestnut coppice, old pollards, former heathland and ponds with clay-workings.

#### Ancient Woodland

3.5 There are no stands of scheduled Ancient Woodland within a 1km radius of the Site, the nearest being examples of Ancient Replanted Woodland (ARW) which lie approximately 1.5km to south-east, i.e. the 24.0ha Court (or Peartree) Wood and the 2.8ha Chilton Hills Wood.

#### National Habitat Network

3.6 The Site lies within Network Enhancement Zone 1, as shown on Appendix 6. This designation is defined as land connecting existing patches of primary and associated habitats which is likely to be suitable for creation of the primary habitat – see *National Habitat Network Maps: User Guidance* v.2 (Natural England, May 2020). Within this Zone, Natural England consider that it is desirable to undertake actions that improve its biodiversity – through land management changes and/or green infrastructure provisions.

## Phase I Habitats

### Access & Survey Conditions

- 3.7 There was full access across the Site, and the survey was undertaken in fine weather conditions.
- 3.8 Explanatory photographs are provided at the rear of this Report.

### Floral Species

- 3.9 The Site would not be regarded as floristically species-rich, with just 24 species recorded, see Table 1. No uncommon native species were noted.

### Habitats

- 3.10 The majority of the site was composed of grassland, buildings and hardstanding, see Phase I Habitat Plan (Figure 1). The following principal habitats were present, listed below in accordance with JNCC (2003) coding:
- Scattered Broadleaf Trees [**A3.1**];
  - Dense & Scattered Scrub [**A2.1** & **A2.2**];
  - Ornamental Shrubs [**J1.4**];
  - Amenity Grassland [**J1.2**]; and
  - Tall Ruderal Vegetation [**C3.1**].
- 3.11 **Broadleaf Trees** – There is a single Ivy-covered tree on the northern boundary, thought to be a Wild Cherry *Prunus avium*. The Ivy cover is so dense the tree stem could not be seen.
- 3.12 **Scrub** – There are stands of Bramble *Rubus fruticosus* agg. across the entire Site, in varying levels of density. Along the western boundary there is also Traveller's-joy *Clematis vitalba*.
- 3.13 **Ornamental Shrubs** – There is Russian-vine *Fallopia baldschuanica* along the northern boundary, presenting a garden escape. A stand of Duke-of-Argyll's Tea-tree *Lycium barbarum* may be natural, but this is a well-naturalised species in North Kent, especially on coastal sites such as this (Philp, 2010).
- 3.14 **Amenity Grassland** – There is a strip of roadside grassland that is being colonised by Bramble, and this has a very low floristic species-richness.
- 3.15 **Tall Ruderal Vegetation** – The majority of the Site is covered in disturbed ground with ruderal vegetation dominated by Nettle *Urtica dioica*, but also Mugwort *Artemisia vulgaris*, Lesser Burdock *Arctium minor* s.l. and localised Perennial Sow-thistle *Sonchus arvensis*.
- 3.16 All of these habitats are common, widespread and easily re-creatable. For these reasons they are not considered further.

### Protected Species Appraisals

- 3.17 The Site has potential for protected species such as Badger *Meles meles*, Hazel Dormouse *Muscardinus avellanarius*, roosting bats, reptiles, amphibians and breeding birds.
- 3.18 **Badger** – There are no mammal holes or runs, or obvious hairs caught on the Bramble. Similarly, there are no scrapes or snuffle holes evident.
- 3.19 This species is not considered further.
- 3.20 **Hazel Dormouse** – Examining the aerial photograph of the Site, see Appendix 1, this shows how the Site is not connected to any surrounding hedgerow network. Similarly, it does not contain the most favoured plants associated with this species, i.e. Hazel *Corylus avellana* and Honeysuckle *Lonicera periclymenum*.
- 3.21 It is not possible to search the entire Site due to the stands of dense Bramble, but no nests were observed during the walkover.
- 3.22 The Site is considered unlikely to form part of a Hazel Dormouse territory, and therefore this species is not considered further.
- 3.23 **Roosting Bats** – The only suitable feature within the Site is a single tree along the northern boundary that is densely-covered by adherent mature Ivy. This clearly has potential for temporary roosting during the warmer summer months, so would be assessed as having Low Roosting Potential.
- 3.24 A search confirmed that there are no Natural England EPSM Bat Licences granted within a 2km radius of the Site, see Natural England Magic website [www.magic.defra.gov.uk](http://www.magic.defra.gov.uk).
- 3.25 **Reptiles** – This Site has a mosaic of habitat types and interfaces, and so has potential for occupation of reptile populations. At the same time, this Site has been subjected to considerable historical and recent disturbance, while it is very isolated within extensive surrounding arable land. More recently, the Bramble scrub appears to be spreading and threatens to make the majority of the Site unsuitable for reptile occupation.
- 3.26 A heat trap survey was undertaken here to establish the status of reptile populations. A series of 22 heat traps were set along the eastern and southern boundaries, respectively, as these were the only open areas that were readily accessible.
- 3.27 A series of seven surveys were undertaken during September 2023, see Table 2, during which the ideal survey conditions were encountered, with temperatures on Site of between 15°C to 23°C.
- 3.28 **Amphibians** – There are no Natural England EPS Licence applications for Great Crested Newt *Triturus* within a 2km radius, or records for GCN, based on data shown on the Natural England Magic website [www.magic.defra.gov.uk](http://www.magic.defra.gov.uk).
- 3.29 The Ordnance Survey does not identify any waterbodies within a 500m radius of the Site boundary, the nearest being (i) a large pond to the north at 970m distance and (ii) a lake at 1140m distance to the north-west.

- 3.30 For these reasons it is considered unlikely that GCN life stages will occur on Site, and this species is therefore not considered further.
- 3.31 **Breeding Birds** – No bird nests were found during the walkover, but clearly the extensive cover of scrub has potential for bird breeding territories.

#### 4. EVALUATION & RECOMMENDATIONS

- 4.1 It is proposed to clear the Site vegetation and erect a new dwelling house, the surrounding landscaping to be designed to deliver biodiversity gain in excess of 10% by creating (i) floristically species-rich boundary scrub, (ii) wildflower grassland and (iii) bat roosting features on the new building.

##### **Impacts upon Nature Conservation Assets**

###### Thames Estuary & Marshes Ramsar

- 4.2 **Hydrology** – In the proximity of the Site, the SSSI and Ramsar boundaries are convergent and their SE extent is defined by a large drainage ditch. This ditch lies approximately 960m distant at its nearest point to the Site, and there is no obvious hydrological connectivity with the SSSI/Ramsar.
- 4.3 As this relatively small Site lies within a huge surrounding expanse of intensively managed arable land, it is unlikely to be of any significance within any shared watershed.
- 4.4 There are no compatible habitats within the Site that would be of any significance to the SSSI/Ramsar.
- 4.5 **Ramsar Criteria** – The majority of the Criterion 2 species that occur within the Ramsar are associated with grazing marsh, saltmarsh, mudflats and shingle habitats. These will not occur within the Site and its immediate surroundings.
- 4.6 The huge wildfowl populations associated with Criterion 5 are not associated with the habitat types found within the Site, and birds seeking an inland refuge between tides or wintering species using stubble crops, would similarly not occur within the Site.
- 4.7 For these reasons, it is considered unlikely that the development of this Site for a residential dwelling would result in any significant adverse impact upon the Ramsar/SSSI interests.

###### Shorne & Ashenbank SSSI

- 4.8 This SSSI lies approximately 1.44km to the SSW of the Site, from which it is separated by the village of Shorne. There are no compatible habitats within the Site that would be of any significance to this Ancient Woodland/plantation/heathland complex.
- 4.9 The Site is also very isolated from woodland as it lies within a predominantly arable landscape, while the nearest stands of Ancient Woodland lie approximately 1.5km to the south-east. There is no potential for habitat connectivity given these degrees of separation.
- 4.10 It is unlikely that residential development of this Site would result in any significant adverse impact upon this SSSI.

### Impacts upon Habitats

- 4.11 None of the habitats within this Site would be regarded as being of any ecological significance on a national, regional or local scale. All are common, widespread and easily re-creatable and are therefore not considered further.

#### Habitat Enhancement Zone

- 4.12 The Site lies within a corridor of land that is targeted for habitat creation but it is difficult to what habitat types would be favoured given that there is estuarine wetland to the north and lowland woodland to the south.
- 4.13 However, as the habitats within the Site are of little ecological significance, this development provides an opportunity to create more compatible habitats such as:
- Woody boundaries – to provide woodland plants, and value structure for nesting birds.
  - Wildflower grassland – to provide foraging patches for species typical of species found in large scale landscapes such as bees, moths and butterflies.

### Impacts upon Protected Species

- 4.14 The Site is only considered in regard to potential disturbance to bats and breeding birds.

#### Bats

- 4.15 **Legal Status** – All species of bat are protected in the UK on Schedule 5 of the Wildlife and Countryside Act, 1981 (as amended by the Countryside and Rights of Way Act, 2000), and on Schedule 2 of the Conservation (Natural Habitats &c.) Regulations, 1994. The latter further implements European legislation protecting bats. Bats are also protected from cruel ill-treatment by the Wild Mammals (Protection) Act, 1996.
- 4.16 Bats are highly protected species, the protection being conferred on a population and their roosting habitat. Live bats do not need to be present to confer protection on the roost habitat and confirmation of a bat roost can be made on the basis of relatively fresh droppings and/or combined with roost potential.
- 4.17 **Status within Site** – There is a single tree along the northern boundary that has dense adherent mature Ivy, and this could provide credible roosting habitat, especially during the warmer summer months. This tree is to be retained unaltered, and will be enhanced by proposed tree-planting along the northern boundary.
- 4.18 It is always possible that there might be bat roosts in the surrounding residential properties and, if so, these populations could potentially commute along the Site boundaries or forage within the Site. It would therefore be appropriate to ensure that the proposed development would not result in light disturbance impacts beyond the current ambient levels.

- 4.19 **Lighting Mitigation** – The type of lighting used within the new development, as well as its location and intensity, is of importance to commuting/foraging bats as, if it emits ultraviolet (UV) radiation, it will deter light-sensitive species such as Brown Long-eared Bat for example. In addition, UV radiation is attractive to insects and this can disturb prey availability.
- 4.20 Metal halide and Mercury-vapour lamps emit high levels of UV and are therefore very attractive to insects, while low-pressure Sodium lamps emit negligible UV (mostly monochromatic orange light) and are therefore least attractive. High-pressure Sodium lamps include some Mercury-vapour and are therefore intermediate in attraction to insects (Kunz & Racey, 1998). Any lighting scheme will therefore ideally:
- i. Minimise lighting proposals by using low-intensity LED light bollards.
  - ii. Any security lighting to be sensor-activated and fitted with a downcaster to minimise the lamp source and the luminous intensity being viewed from the horizontal. This form of lighting will minimise light spillage beyond the edge of the development.
- 4.21 Any lighting scheme will be need to be based upon *Guidance Note 08/18: Bats and Artificial Lighting in the UK – Bats and the Built Environment Series* (Bat Conservation Trust, 2018). In line with this guidance, especially that within Step 3, any proposed lighting will have the following key features to avoid disturbance to nearby commuting and foraging bats:
- The lighting positions to be carefully selected so to avoid light spillage towards the roost emergence features and the surrounding boundaries.
  - Any light units to be low-level bollards with 140 degree cone downlighters, therefore resulting in minimal light spillage.
  - To use LED lights lacking any significant UV component, i.e. 'warm-white' lighting with more yellow/orange colour spectra and reduced levels in the blue light spectrum.
  - Individual LED light rating to be 100 lumens.

#### Breeding Birds

- 4.22 **Legal Status** – **Breeding birds are protected under the Wildlife and Countryside Act 1981 and amendments, and in accordance with the CROW Act 2000. This legislation makes it necessary to ensure that breeding birds are not disturbed or harmed during the nesting season.**
- 4.23 Any scrub clearance within the Site will need to ensure that breeding birds are not disturbed or harmed. Breeding/foraging birds will be anticipated during the breeding season that runs between mid-March and the end of August.
- 4.24 If this is not possible for any reason, then any scrub clearance must be undertaken under the supervision of a suitably qualified and experienced Ecologist, surveying for nesting behaviour prior to any clearance work. The clearance work would, however, be at risk as should breeding birds be noted, all work would need to halt until the breeding had been completed.

## Biodiversity Gain

- 4.25 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a duty on all Local Planning Authorities (LPAs) to conserve biodiversity – including restoring and enhancing species, populations and habitats, as well as protecting them.
- 4.26 The recent National Planning Policy Framework (NPPF) of March 2012, Section 11, para. 109 also requires that *'the planning system should contribute to and enhance the natural and local environment by ... minimising impacts on biodiversity and providing net gains in biodiversity where possible ...'*. The NPPF sets out principles that the LPAs should seek to apply when determining planning applications to conserve and enhance biodiversity. These include (i) encouraging opportunities to incorporate biodiversity in and around developments and (ii) refusing planning permission that would cause loss/deterioration of irreplaceable habitats unless *'... the need for, and the benefits of, the development in that location clearly outweigh the loss'* (see para. 118).
- 4.27 Para. 180 of the revised NPPF (July 2021) requires LPAs to apply the following four principles:
- **If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;**
  - **Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted.** The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
  - **Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;** and
  - **Development whose primary objective is to conserve or enhance biodiversity should be supported;** while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.
- 4.28 This development will not involve the first three principles and will support the fourth principle.
- 4.29 Commensurate enhancements compatible with the adjacent Habitat Enhancement Zone will include:
- a) Planting species rich boundary scrub using a mix of native species compatible with Ancient Woodland and butterfly foodplant associations.

- b) Create wildflower grassland to provide invertebrate foodplants, and nectar/pollen sources for bees and flies.
- c) Installing bat bricks on the new building, or else to encourage roosting bats with ventilator tiles on the ridge lines or roof expanses, gaps beneath hanging tiles or weatherboarding, or external wall-mounted boxes on brickwork.
- d) Use a high percentage of nectar- and pollen-rich trees/shrubs/plants within the soft landscaping in order to support pollinating insects such as bees, flies, moths and butterflies.

## TABLES

TABLE 1 - PROVISIONAL FLORAL LIST

| SPECIES                           | COMMON NAME           | ABUNDANCE (DAFOR)                            |                                |
|-----------------------------------|-----------------------|----------------------------------------------|--------------------------------|
|                                   |                       | Amenity Grassland [J1.2]<br>(Roadside Verge) | Tall Ruderal Vegetation [C3.1] |
| Grasses, Sedges & Rushes (4 spp.) |                       |                                              |                                |
| <i>Elymus repens</i>              | Couch                 | -                                            | LO                             |
| <i>Dactylis glomerata</i>         | Cock's-foot           | -                                            | O                              |
| <i>Arrhenatherum elatius</i>      | False Oat-grass       | -                                            | O                              |
| <i>Lolium perenne</i>             | Perennial Rye-grass   | A                                            | -                              |
| Herbs (18 spp.)                   |                       |                                              |                                |
| <i>Arctium minor</i> s.l.         | Lesser Burdock        | -                                            | LF                             |
| <i>Armoracia rusticana</i>        | Horse-radish          | -                                            | R                              |
| <i>Artemisia vulgaris</i>         | Mugwort               | O-LF                                         | A                              |
| <i>Atriplex patula</i>            | Common Orache         | R                                            | -                              |
| <i>Ballota nigra</i>              | Black Horehound       | R                                            | O                              |
| <i>Convolvulus arvensis</i>       | Field Bindweed        | -                                            | LO                             |
| <i>Kicksia spuria</i>             | Sharp-leaved Fluellen | -                                            | LO                             |
| <i>Lactuca serriola</i>           | Prickly Lettuce       | -                                            | R                              |
| <i>Lamuium albus</i>              | White Dead-nettle     | -                                            | LO                             |
| <i>Lapsana communis</i>           | Nipplewort            | -                                            | R-LO                           |
| <i>Malva sylvestris</i>           | Common Mallow         | O-LF                                         | R-LO                           |
| <i>Picris echioides</i>           | Brisly Oxtongue       | O-LF                                         | O                              |
| <i>Plantago lanceolata</i>        | Ribwort Plantain      | F                                            | R-LO                           |
| <i>Potentilla reptans</i>         | Creeping Cinquefoil   | -                                            | LO                             |
| <i>Rumex obtusifolius</i>         | Broad-leaved Dock     | -                                            | O                              |
| <i>Saponaria officinalis</i>      | Soapwort              | -                                            | LO                             |
| <i>Sonchus arvensis</i>           | Perennial Sow-thistle | -                                            | LF                             |
| <i>Sonchus oleraceus</i>          | Smooth Sow-thistle    | R                                            | -                              |
| Trees & Shrubs (2 spp.)           |                       |                                              |                                |
| <i>Calystegia sepium</i>          | Hedge Bindweed        | -                                            | LO                             |
| <i>Rubus fruticosus</i> agq.      | Bramble               | -                                            | O                              |

TABLE 2 - REPTILE SURVEYS UNDERTAKEN AT SITE

| SURVEY | DATE       | SESSION<br>(AM/PM)       | START TIME | TEMPERATURE (C)<br>AT START OF<br>SURVEY | RECORD |
|--------|------------|--------------------------|------------|------------------------------------------|--------|
|        | 08/09/2023 | <b>Traps set on Site</b> |            |                                          |        |
| 1      | 18/09/2023 | PM                       | 16:33      | 16                                       | -      |
| 2      | 19/09/2023 | PM                       | 17:05      | 16                                       | -      |
| 3      | 21/09/2023 | PM                       | 16:40      | 15                                       | -      |
| 4      | 23/09/2023 | AM                       | 09:30      | 16                                       | -      |
| 5      |            | PM                       | 17:20      | 18                                       | -      |
| 6      | 25/09/2023 | PM                       | 16:00      | 18                                       | -      |
| 7      | 26/09/2023 | PM                       | 15:40      | 23                                       | -      |

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## FIGURES



#### Legend:

-  Scattered Broadleaf Trees [A3.1]
-  Dense & Scattered Scrub [A2.1 & A2.2]
-  Ornamental Shrubs [J1.4]
-  Amenity Grassland [J1.2]
-  Tall Ruderal Vegetation [C3.1]

#### Species Abbreviations:

- Amin - *Arctium minor* s.l.
- Avul - *Artemisia vulgaris*
- Fbal - *Fallopia baldschuanica*
- Hhel - *Hedera helix*
- Lbar - *Lycium barbarum*
- Pavi - *Prunus avium*
- Rfru - *Rubus fruticosus* agg.
- Sarv - *Sonchus arvensis*
- Udio - *Urtica dioica*

FIGURE 1 – PHASE I HABITAT PLAN

## **APPENDICES**

## **Appendix 1**

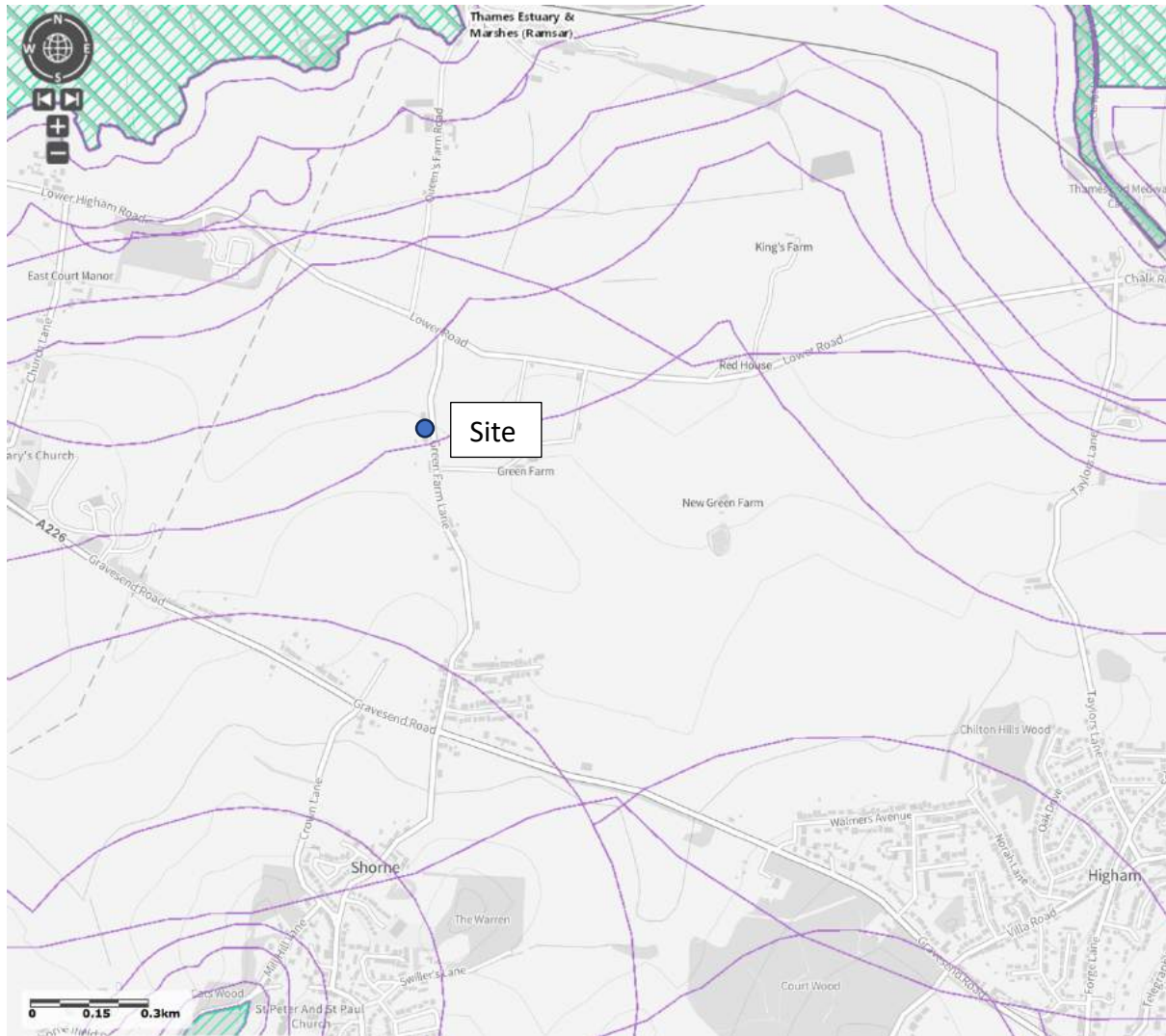
## APPENDIX 1 – AERIAL PHOTOGRAPH



Image taken from Google Earth [www.earth.google.com](http://www.earth.google.com)

## **Appendix 2**

## APPENDIX 2 – SURROUNDING NATURE CONSERVATION ASSETS



### Legend:

Diagonal thin green lines = SSSI designation  
Diagonal thick green lines = Ramsar designation

## **Appendix 3**

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<sup>1</sup> numbers and some species regularly use the site in internationally important<sup>2</sup> numbers. The breeding bird community is also of particular interest. The diverse habitats within the site support a number of nationally rare<sup>3</sup> and scarce<sup>4</sup> 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<sup>5</sup> species such as garganey *Anas querquedula*, pintail, avocet and bearded tit *Panurus biarmicus*.

Specially protected birds<sup>6</sup> 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*<sup>4</sup> and *Puccinellia fasciculata*<sup>4</sup>.

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*<sup>4</sup>, small goosefoot *Chenopodium botryodes*<sup>4</sup> and golden dock *Rumex maritimus*<sup>4</sup>, 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*<sup>4</sup>, sea clover *Trifolium squamosum*<sup>4</sup> and sea barley *Hordeum marinum*<sup>4</sup>, 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*<sup>4</sup> 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*<sup>7</sup> 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*<sup>4</sup>. 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*<sup>4</sup> with water soldier *Stratiotes aloides*<sup>4</sup> present in dykes near Higham.

The mudflats have beds of eelgrass including *Zostera angustifolia*<sup>4</sup> and *Z. noltii*<sup>4</sup> and the Allhallows region of the site has areas of vegetated shingle with the nationally scarce sea kale *Crambe maritima*<sup>4</sup> present.

#### Invertebrates

This site supports a diverse invertebrate fauna and includes nationally rare<sup>3</sup> 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

<sup>1</sup> Nationally important numbers corresponds to more than 1% of the British population.

<sup>2</sup> Internationally important numbers corresponds to more than 1% of the northwest European population.

<sup>3</sup> Species regarded as nationally rare are recorded from 1–15 of the 10 × 10km squares in Britain.

<sup>4</sup> Species regarded as nationally scarce are recorded from 16–100 of the 10 × 10km squares in Britain.

<sup>5</sup> Listed in ‘Red Data Birds in Britain’, NCC/RSPB 1990.

<sup>6</sup> Species listed on Annex 1 of the EEC Birds Directive (79/409/EEC).

<sup>7</sup> Plants listed on Schedule 8 of the Wildlife and Countryside Act 1981.

## **Appendix 4**

# Information Sheet on Ramsar Wetlands (RIS)

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

### 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](mailto:RIS@JNCC.gov.uk)

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Designation date

|  |  |  |  |  |  |
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|  |  |  |  |  |  |
|--|--|--|--|--|--|

Site Reference Number

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## 2. Date this sheet was completed/updated:

Designated: 05 May 2000 / Updated: May 2005

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## 3. Country:

UK (England)

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## 4. Name of the Ramsar site:

Thames Estuary and Marshes

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## 5. Map of site included:

a) **hard copy** (required for inclusion of site in the Ramsar List): yes ✓ -or- no

b) **digital (electronic) format** (optional): Yes

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## 6. Geographical coordinates (latitude/longitude):

51° 29' 08'' N

00° 35' 47'' E

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## 7. General location:

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

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## 8. Elevation (average and/or max. & min.) (metres): 9. Area (hectares): 5589

Min. -5

Max. 5

Mean No information available

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## 10. Overview:

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.

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## 11. Ramsar Criteria:

2, 5, 6

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## 12. Justification for the application of each Criterion listed in 11. above:

Ramsar criterion 2

The site supports more than 20 British Red Data Book invertebrates and populations of the GB Red Book endangered least lettuce (*Lactuca saligna*), as well as the vulnerable slender hare's-ear (*Bupleurum tenuissimum*), divided sedge (*Carex divisa*), sea barley (*Hordeum marinum*), Borrer's saltmarsh-grass (*Puccinellia fasciculata*), and dwarf eelgrass (*Zostera noltei*).

Ramsar criterion 5

**Assemblages of international importance:**

**Species with peak counts in winter:**

45,118 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:**

|                                                                            |                                                                                                             |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Black-tailed godwit , <i>Limosa limosa islandica</i> ,<br>Iceland/W Europe | 1,640 individuals, representing an average of<br>4.5% of the population (5 year peak mean<br>1998/9-2002/3) |
|----------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|

**Species with peak counts in winter:**

|                                                                                      |                                                                                                              |
|--------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Dunlin , <i>Calidris alpina alpina</i> , W Siberia/W<br>Europe                       | 15,171 individuals, representing an average of<br>1.1% of the population (5 year peak mean<br>1998/9-2002/3) |
| Red knot , <i>Calidris canutus islandica</i> , W &<br>Southern Africa<br>(wintering) | 7,279 individuals, representing an average of<br>1.6% of the population (5 year peak mean<br>1998/9-2002/3)  |

More 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 Alerts report, which is updated annually. See <http://www.bto.org/survey/webs/webs-alerts-index.htm>.

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**13. Biogeography:**

**a) biogeographic region:**

Atlantic

**b) biogeographic regionalisation scheme (include reference citation):**

Council Directive 92/43/EEC

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**14. Physical features of the site:**

|                             |                                                                                 |
|-----------------------------|---------------------------------------------------------------------------------|
| 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)<br>(www.metoffice.com/climate/uk/averages/19712000/sites/greenwich.html)<br>Max. daily temperature: 14.8° C<br>Min. daily temperature: 7.2° C<br>Days of air frost: 29.1<br>Rainfall: 583.6 mm<br>Hrs. of sunshine: 1461.0 |
|-----------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

**General description of the Physical Features:**

No information available

**15. Physical features of the catchment area:**

No information available

**16. Hydrological values:**

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

**17. Wetland types**

Marine/coastal wetland

| Code  | Name                                               | % Area |
|-------|----------------------------------------------------|--------|
| E     | Sand / shingle shores (including dune systems)     | 0.8    |
| G     | Tidal flats                                        | 49.6   |
| H     | Salt marshes                                       | 1.3    |
| O     | Freshwater lakes: permanent                        | 0.7    |
| Q     | Saline / brackish lakes: permanent                 | 4.2    |
| Ss    | Saline / brackish marshes: seasonal / intermittent | 3.2    |
| 4     | Seasonally flooded agricultural land               | 38.6   |
| Other | Other                                              | 1.6    |

**18. General ecological features:**

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*.

**19. Noteworthy flora:**

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*.

---

**20. Noteworthy fauna:****Birds****Species currently occurring at levels of national importance:****Species with peak counts in spring/autumn:**

|                                                                                           |                                                                                                               |
|-------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
| Common greenshank , <i>Tringa nebularia</i> ,<br>Europe/W Africa                          | 38 individuals, representing an average of 6.3%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3)  |
| Little egret , <i>Egretta garzetta</i> , West<br>Mediterranean                            | 54 individuals, representing an average of 3.2%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3)  |
| Little grebe , <i>Tachybaptus ruficollis ruficollis</i> ,<br>Europe to E Urals, NW Africa | 251 individuals, representing an average of 3.2%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3) |
| Ruff , <i>Philomachus pugnax</i> , Europe/W Africa                                        | 23 individuals, representing an average of 3.2%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3)  |

**Species with peak counts in winter:**

|                                                                          |                                                                                                                |
|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|
| Common shelduck , <i>Tadorna tadorna</i> , NW<br>Europe                  | 1238 individuals, representing an average of 1.5%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3) |
| Gadwall , <i>Anas strepera strepera</i> , NW Europe                      | 359 individuals, representing an average of 2% of<br>the GB population (5 year peak mean 1998/9-<br>2002/3)    |
| Northern shoveler , <i>Anas clypeata</i> , NW & C<br>Europe              | 288 individuals, representing an average of 1.9%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3)  |
| Pied avocet , <i>Recurvirostra avosetta</i> ,<br>Europe/Northwest Africa | 607 individuals, representing an average of 17.8%<br>of the GB population (5 year peak mean 1998/9-<br>2002/3) |
| Spotted redshank , <i>Tringa erythropus</i> , Europe/W<br>Africa         | 6 individuals, representing an average of 4.4% of<br>the GB population (5 year peak mean 1998/9-<br>2002/3)    |
| Water rail , <i>Rallus aquaticus</i> , Europe                            | 6 individuals, representing an average of 1.3% of<br>the GB population (5 year peak mean 1998/9-<br>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 crane fly *Erioptera bivittata*, a crane fly *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 bifeneistratus*, *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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**21. Social and cultural values:**

Aesthetic  
 Archaeological/historical site  
 Conservation education  
 Current scientific research  
 Fisheries production  
 Livestock grazing  
 Non-consumptive recreation  
 Sport fishing  
 Sport hunting  
 Tourism  
 Transportation/navigation

**22. Land tenure/ownership:**

| Ownership category                 | On-site | Off-site |
|------------------------------------|---------|----------|
| Non-governmental organisation      | +       | +        |
| Local authority, municipality etc. | +       | +        |
| Private                            | +       | +        |
| Public/communal                    | +       |          |

**23. Current land (including water) use:**

| Activity                         | On-site | Off-site |
|----------------------------------|---------|----------|
| Nature conservation              | +       | +        |
| Tourism                          | +       | +        |
| Recreation                       | +       | +        |
| 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              | +       |          |

## 24. Factors 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-nutriented 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

## 25. Conservation measures taken:

| Conservation measure                        | On-site | Off-site |
|---------------------------------------------|---------|----------|
| SSSI / ASSI                                 | +       |          |
| SPA                                         | +       |          |
| Land owned by a NGO for nature conservation | +       | +        |
| Management agreement                        | +       |          |

|                                            |   |   |
|--------------------------------------------|---|---|
| Site management statement/plan implemented | + |   |
| ESA                                        | + | + |

**26. Conservation measures proposed but not yet implemented:**

No information available

**27. Current scientific research and facilities:**

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

**28. Current conservation education:**

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.

**29. Current recreation and tourism:**

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.

**30. Jurisdiction:**

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

**31. Management authority:**

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

**32. Bibliographical references:****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](http://www.english-nature.org.uk/livingwiththesea/project_details/good_practice_guide/HabitatCRR/ENRestore/CHaMPs/NorthKent/NorthKentCHaMP.pdf)

Barne, JH, Robson, CF, Kaznowska, SS, Doody, JP, Davidson, NC & Buck, AL (eds.) (1998) *Coasts and seas of the United Kingdom. Region 7 South-east England: Lowestoft to Dungeness*. Joint Nature Conservation Committee, Peterborough. (Coastal Directories Series.)

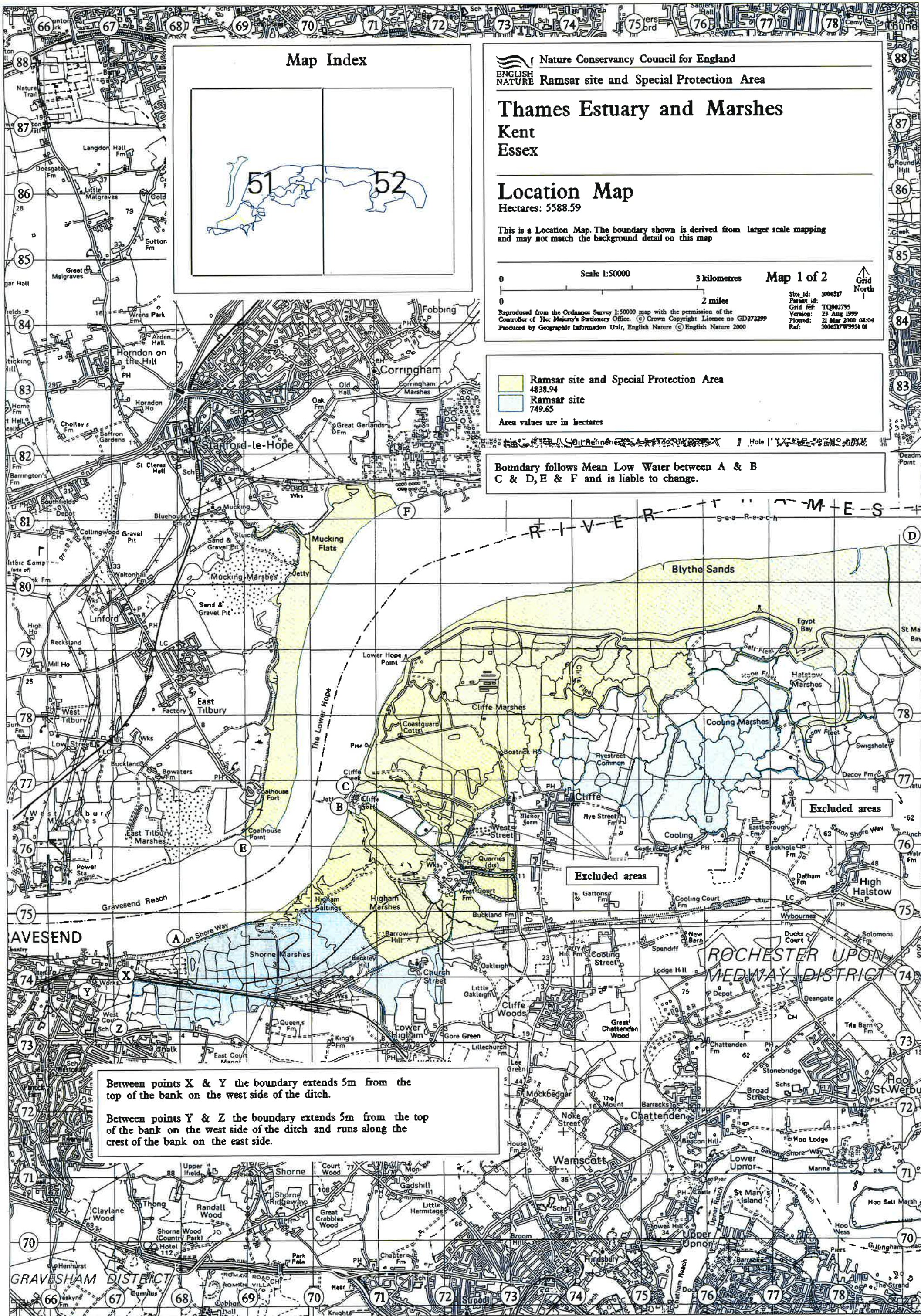
Blair-Myers, CN (2003) *North Kent Marshes Saltmarsh Survey 2002*. Kent County Council, Maidstone

Buck, AL (ed.) (1993) *An inventory of UK estuaries. Volume 5. Eastern England*. Joint Nature Conservation Committee, Peterborough

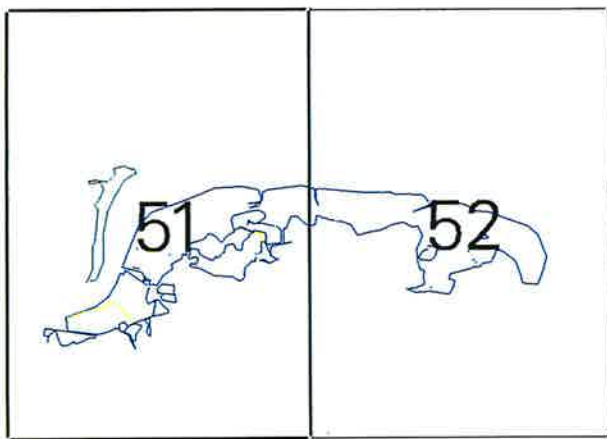
- Burd, F (1989) *The saltmarsh survey of Great Britain. An inventory of British saltmarshes*. Nature Conservancy Council, Peterborough (Research & Survey in Nature Conservation, No. 17)
- Carter Ecological Ltd. (2003) *Sea walls, North Kent Marshes 2002: Factors affecting the occurrence of nationally scarce plant species on sea walls in three North Kent SSSIs*. English Nature, Wye
- Covey, R (1998) Chapter 6. Eastern England (Bridlington to Folkestone) (MNCR Sector 6). In: *Benthic marine ecosystems of Great Britain and the north-east Atlantic*, ed. by K. Hiscock, 179-198. Joint Nature Conservation Committee, Peterborough. (Coasts and Seas of the United Kingdom. MNCR series)
- Cranswick, PA, Waters, RJ, Musgrove, AJ & Pollitt, MS (1997) *The Wetland Bird Survey 1995–96: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge
- Dean, BJ, Webb, A, McSorley, CA & Reid, JB (2003) Aerial surveys of UK inshore areas for wintering seabirds, divers and grebes: 2000/01 and 2001/02. *JNCC Report*, No. 333. [www.jncc.gov.uk/page-2346](http://www.jncc.gov.uk/page-2346)
- Doody, JP, Johnston, C & Smith, B (1993) *Directory of the North Sea coastal margin*. Joint Nature Conservation Committee, Peterborough
- Kent County Council (1992) *North Kent Marshes study*. Kent County Council, Maidstone
- English Nature (2001) *Thames Estuary European marine site: English Nature's advice given under Regulation 33(2) of the Conservation (Natural Habitats &c) Regulations 1994*. English Nature, Wye
- Godfrey, A (2003) *Grazing Marsh Invertebrate Project: Site-Specific Report. Final Report to the Environment Agency/English Nature*. Environment Agency, West Malling / English Nature, Wye
- Musgrove, AJ, Langston, RHW, Baker, H & Ward, RM (eds.) (2003) *Estuarine waterbirds at low tide. The WeBS Low Tide Counts 1992–93 to 1998–99*. WSG/BTO/WWT/RSPB/JNCC, Thetford (International Wader Studies, No. 16)
- Musgrove, AJ, Pollitt, MS, Hall, C, Hearn, RD, Holloway, SJ, Marshall, PE, Robinson, JA & Cranswick, PA (2001) *The Wetland Bird Survey 1999–2000: wildfowl and wader counts*. British Trust for Ornithology, Wildfowl and Wetlands Trust, Royal Society for the Protection of Birds & Joint Nature Conservation Committee, Slimbridge. [www.wwt.org.uk/publications/default.asp?PubID=14](http://www.wwt.org.uk/publications/default.asp?PubID=14)
- Ratcliffe, DA (ed.) (1977) *A Nature Conservation Review. The selection of biological sites of national importance to nature conservation in Britain*. Cambridge University Press (for the Natural Environment Research Council and the Nature Conservancy Council), Cambridge (2 vols.)
- Shirt, DB (ed.) (1987) *British Red Data Books: 2. Insects*. Nature Conservancy Council, Peterborough
- Stewart, A, Pearman, DA & Preston, CD (eds.) (1994) *Scarce plants in Britain*. Joint Nature Conservation Committee, Peterborough
- 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](http://www.jncc.gov.uk/UKSPA/default.htm)
- Thames Estuary Partnership (1999) *Management Guidance for the Thames Estuary*. Thames Estuary Partnership, London
- Thames Estuary Partnership (2003) *Tidal Thames Habitat Action Plan*. Thames Estuary Partnership, London. <http://212.67.202.196/~teprep/dev/documents/uploaded/document/TTHAP.pdf>
- Wiggington, M (1999) *British Red Data Books. 1. Vascular plants*. 3rd edn. Joint Nature Conservation Committee, Peterborough
- Williams, P (1996) A survey of ditch flora in the North Kent Marshes SSSIs, 1995. *English Nature Research Reports*, No. 167
- Williams, P & Ware, C [1997] Ditch communities on the North Kent Marshes SSSIs. *English Nature Research Reports*, No. 289
- Worsfold, TM, Grist, NC & Hunter, P (2004) *Review of intertidal invertebrate data available for the Medway, Swale and North Kent Marshes estuary systems, with recommendations for future work*. Medway Swale Estuary Partnership, Faversham

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## Map Index



Nature Conservancy Council for England  
ENGLISH NATURE Ramsar site and Special Protection Area

## Thames Estuary and Marshes

Kent  
Essex

## Location Map

Hectares: 5588.59

This is a Location Map. The boundary shown is derived from larger scale mapping and may not match the background detail on this map

Scale 1:50000 3 kilometres 2 miles

Map 1 of 2

Grid North

Reproduced from the Ordnance Survey 1:50000 map with the permission of the Controller of Her Majesty's Stationery Office. © Crown Copyright Licence no GD272299  
Produced by Geographic Information Unit, English Nature © English Nature 2000

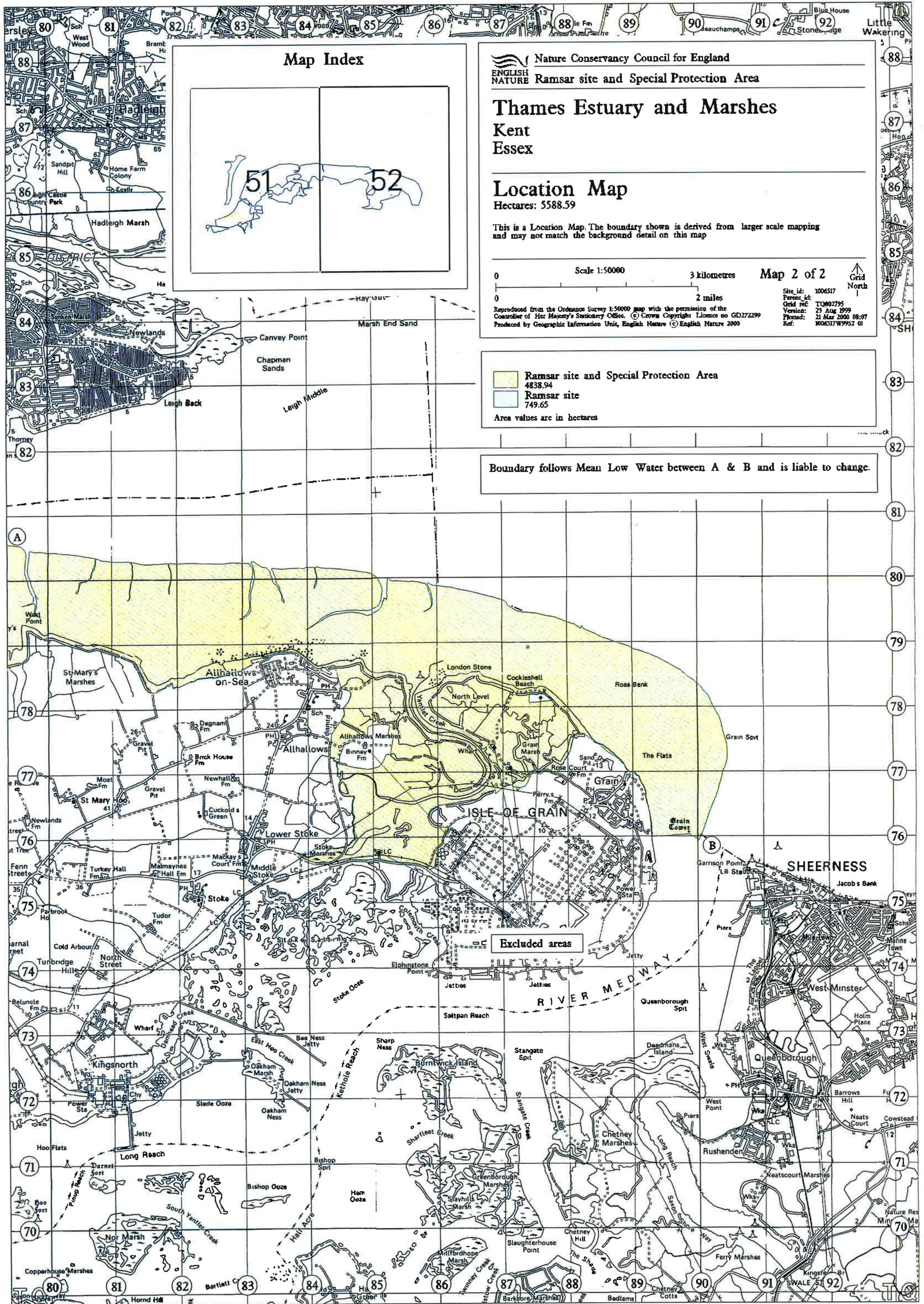
Site Id: 1006317  
Parent Id: TQ962795  
Version: 23 Aug 1999  
Plotted: 21 Mar 2000 08:34  
Ref: 1006317W995A 01

Ramsar site and Special Protection Area  
4838.94  
Ramsar site  
749.65  
Area values are in hectares

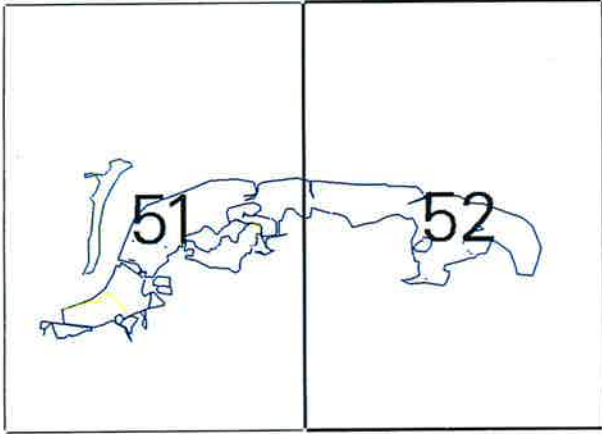
Boundary follows Mean Low Water between A & B  
C & D, E & F and is liable to change.

Between points X & Y the boundary extends 5m from the top of the bank on the west side of the ditch.

Between points Y & Z the boundary extends 5m from the top of the bank on the west side of the ditch and runs along the crest of the bank on the east side.



### Map Index



Nature Conservancy Council for England  
ENGLISH NATURE Ramsar site and Special Protection Area

## Thames Estuary and Marshes

Kent  
Essex

### Location Map

Hectares: 5588.59

This is a Location Map. The boundary shown is derived from larger scale mapping and may not match the background detail on this map

Scale 1:50000  
3 kilometres  
2 miles  
Map 2 of 2  
Grid North  
Site id: 1004517  
Parent id: TQ002795  
Version: 23 Aug 1999  
Plotted: 21 Mar 2000 08:07  
Ref: 1004517W9952 01

Ramsar site and Special Protection Area  
4838.94  
Ramsar site  
749.65  
Area values are in hectares

Boundary follows Mean Low Water between A & B and is liable to change.

Excluded areas

RIVER MEDWAY

SHEERNESS

## **Appendix 5**

COUNTY: KENT  
WOODS

SITE NAME: SHORNE AND ASBENBANK

BOROUGH: GRAVESHAM

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

Local Planning Authority: GRAVESHAM BOROUGH COUNCIL

National Grid Reference: TQ 682700      Area: 184.6 (ha.) 456.1 (ac.)

Ordnance Survey Sheet 1:50,000: 178      1:10,000: TQ 66 NE, 67 SE

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

Date Notified (Under 1981 Act): 1988      Date of Last Revision: –

Other Information:

Part of the site is owned and managed by the County Council as Shorne Country Park. Part is owned by the Woodland Trust. There are extensions and deletions to this site.

Reasons for Notification:

Shorne and Ashenbank Woods form a complex of ancient and plantation woodland, and include a variety of stand-types associated with Tertiary gravels, clays and sands. The site supports an important and diverse invertebrate fauna, especially its Coleoptera (beetles), Hemiptera (true bugs), and Odonata (dragonflies).

The woodland varies from pure sweet chestnut *Castanea sativa* coppice, in places heavily invaded by sycamore *Acer pseudoplatanus*, to a more mixed broadleaved community, consisting of mature oak *Quercus* spp., sweet chestnut, and hornbeam *Carpinus betulus*. Although holly *Ilex aquifolium*, and yew *Taxus baccata* are frequent in the understorey, dense aggregations of rhododendron *Rhododendron ponticum* sometimes suppress the development of a shrub and field layer. Elsewhere bramble *Rubus fruticosus*, bluebell *Hyacinthoides non-scriptus*, dog's mercury *Mercurialis perennis*, and bracken *Pteridium aquilinum* dominate the ground flora, together with typical indicator species of ancient woodland such as wood spurge *Euphorbia amygdaloides*, wood sedge *Carex sylvatica*, and wood anemone *Anemone nemorosa*. The locally-scarce caper spurge *Euphorbia lathyris* also occurs, often in abundance in recently cut compartments.

At Randall Heath an open area of former heathland is now dominated by bracken with occasional ancient oak and sweet chestnut pollards. Within Shorne Country Park an old series of clay-workings has been landscaped to provide wildlife habitats including a network of shallow ponds, which are developing an increasingly interesting flora and fauna. These include the plants blinks *Montia*

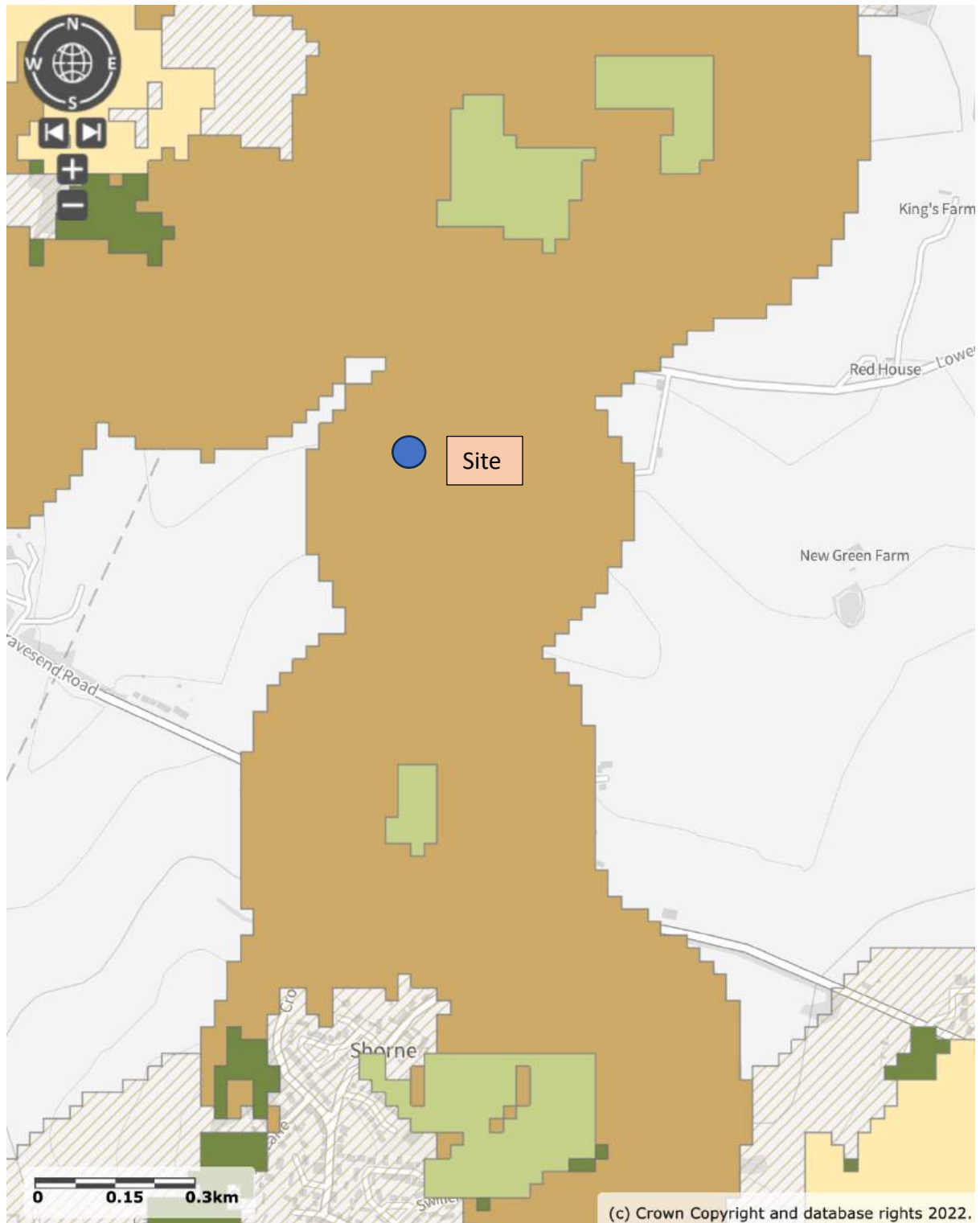
*fontana* and wood small-reed *Calamagrostis epigejos*, both rare in Kent, and several nationally scarce insects including the ruddy darter dragonfly *Sympetrum sanguineum*, and the satin lutestring moth *Tetheela fluctuosa*.

The site has been well-recorded for its insect fauna in the past, with both Coleoptera (beetles) and Hemiptera (true bugs) being well-represented. Rare species include the beetles *Mordella holomelaena* and *Peltodytes caesus*.

The woodland breeding bird community includes hawfinch, marsh tit and all three British woodpeckers.

## **Appendix 6**

## APPENDIX 6 – NATIONAL HABITAT NETWORK



## **PHOTOGRAPHS**

## EXPLANATORY PHOTOGRAPHS



Looking west along South Boundary



Looking north from South Boundary



Looking NE across Site



Looking ENE from Eastern Boundary



Looking East along Northern Boundary



Roadside (Eastern) Boundary



Duke of Argyll's Tea-tree *Lycium barbarum*

