British Energy

Sizewell

Extended Phase 1 Survey Report

CONFIDENTIAL

February 2008

Entec UK Limited

Report for

Christine Blythe
British Energy
Barnett Way
Barnwood
Gloucester
GL4 3RS

Main Contributors

Emma Toovey

[redacted]

[redacted]

Entec UK Limited

17 Angel Gate
City Road
London
EC1V 2SH
England
Tel: +44 (0) 207 843 1400
Fax: +44 (0) 207 843 1410

19801cr036

\\egosfs05\data\data\19801 be bird & ecology studies\ecology & ornithology [desk study and reports]\sizewell\reports\extended phase 1\final issued report\19801cb36 sizewell extended phase 1 report 2007.doc

British Energy Group PLC

Sizewell

Extended Phase 1 Survey Report

CONFIDENTIAL

February 2008

Entec UK Limited

Certificate No. FS 13881

Certificate No. EMS 69090

Copyright and Non-Disclosure Notice

Third Party Disclaimer

Contents

1. Introduction

1.1 Background

British Energy (BE) is at the early stages of investigating the feasibility of building new nuclear power stations at a range of sites within their UK land holding. Sizewell has been identified as one potential site for investigation and likely progression to EIA. Entec UK Ltd have been appointed as BE's ecological consultants to lead and co-ordinate the baseline ornithological and terrestrial ecological work and assessment for Sizewell. In order to identify likely protected species and botanical issues pertinent to the development, a desk study of available data and an Extended Phase 1 Habitat Survey were identified as being key initial steps in this process.

1.2 Development Proposals

An area of land directly north of the Sizewell 'A' and 'B' Power Stations has been identified as having potential to accommodate nuclear new build. This area, which covers 0.32km^2/32ha and has an approximate central grid reference of TM473640, is referred to in this document as 'the preliminary works area.' The proposed position of the new power station, the indicative access road and site compound (accounting for a potential further 0.35km^2/35ha of land take) are shown in **Figure 1.1**. It should be noted that this initial development footprint is purely indicative, as environmental, landscape and visual, hydrological and other constraints have not yet been considered and taken into account. These would all be addressed as a matter of course as part of an EIA.

No detailed information on the exact nature of the proposed nuclear power station can be provided at this stage, but it is assumed for the present that the power station would be water-cooled and that there would be a requirement for additional works associated with this in the sub-tidal zone. The range of development activities that could potentially affect biodiversity interests are typical of those associated with the construction, operation and decommissioning of any large industrial structure, albeit one that it is likely to remain in place for an extended period of time.

1.3 Purpose of the Report

The report has been produced in order that the results of the Extended Phase 1 Habitat Survey (which in combination with desk study data was used to inform the Sizewell Ecological Scoping Report [Entec Reference 19801cr050] issued to BE in June 2007) are readily available. This report details the scope of the extended Phase 1 work, data collection methods and the features present within the preliminary works area and surrounding areas. Also included are recommendations for targeted survey work. These have formed the basis for the ecological survey programme that is currently underway.

No Window

Sizewell Scoping Report

Figure 1.1
Site Boundary

June 2007
19801-R32 blacl

Entec

2. Methodology

2.1.1 Survey Area

The survey area encompassed the preliminary works area located immediately north of the existing power stations, the proposed temporary works area located in Dunwich Forest approximately 450m north-west of the preliminary works area, the proposed new access road into the preliminary works area that begins at Lovers Lane north of the town of Leiston and runs to the south-east corner of Goose Hill, and a 750m perimeter zone around these three areas as shown in **Figure 3.1**.

Full access was available to all non-operational areas owned by British Energy, which included almost all of the study area with the exception of outlying land to the south of Lovers Lane (near to Brick Kiln Farm). The remainder of the survey area was viewed from public footpaths. The operational areas of the built power stations were not accessed.

2.1.2 Methods

The site was visited on the 27th, 28th and 29th of March 2007 by Emma Toovey BSc, MSc MIEEM, Senior Ecologist at Entec.

The survey was based on the Phase 1 habitat ecological survey methodology[1] (JNCC, 2003). Distinct habitats were identified and mapped (refer to **Figure 3.1**), and any features of nature conservation interest were subject to a more detailed description in a target note. As the standard Phase 1 habitat survey methodology is, in the main, concerned only with vegetation communities, the survey was extended[2] to allow for the provision of information on other important ecological features, particularly to identify the presence/potential presence of legally protected species, such as bats, badgers and water voles. During the Extended Phase 1 Habitat Survey, waterbodies were assessed in more detail.

Waterbodies

A large number of interconnected ditches and waterbodies were identified as being within, or within 750m of, the of the preliminary works boundary from the OS 1:10,000 basemap. English Nature (now Natural England) guidance[3] suggests all ponds within 500m of a development should be considered for the potential to support great crested newts. However, 750m has been used initially to ensure that should there be minor changes to the works area, any ponds within 500m will have already been assessed and considered.

All the ponds within the preliminary works area and the surrounding 750m perimeter zone were, therefore, screened for their potential to support great crested newts.

---

[1] Joint Nature Conservation Committee (2003) *Handbook for Phase 1 habitat survey, a technique for environmental audit*, JNCC

[2] Institute of Environmental Assessment (1995) *Guidelines for Ecological Assessment* Chapman and Hall

[3] English Nature (now Natural England) (2001) *Great Crested Newt Mitigation Guidelines*, English Nature

As a general rule any pond that holds water could be used by great crested newts but the following features reduce the potential for a water-body to support them:

- Extreme levels of fish activity (e.g. an intensively managed fishing lake) or waterfowl activity (where the number of waterfowl present exceeds 10 per 1000m^2 [Oldham *et al* 2000]), albeit understanding that this does not necessarily preclude the presence of great crested newt and as such using professional judgement also;
- A lack of sufficient water to support a breeding population of the species; or
- The pond being no longer present.

2.1.3 Constraints

This survey represents an ecological picture of the area at the time it was surveyed. Fauna and flora identified during the survey will fluctuate in terms of species composition and abundance, on both a diurnal and seasonal basis. It is also clear that some species, notably those that appear later in the year, would not have been recorded during the work, although broad habitat characteristics were apparent, and have been used to inform follow up survey work currently being conducted.

Access to the survey area was restricted in places. All areas within the British Energy landholding and the majority of the wider area were systematically surveyed. In some limited areas (particularly land to the south of Lovers Lane which is outside the British Energy Estate), however, the general habitat types were recorded from the footpaths. There are therefore some limitations to the data that has been collected.

In order to address these limitations, we would need access to these restricted areas and the scope of any further species specific survey work may need to be extended into these areas. However, considering the majority of the study area could be fully accessed and the restricted areas are located on the edge of the zone of influence, no significant changes to the scope of this assessment would be anticipated.

3. Results

3.1 Habitats

The locations of the various habitats recorded during the surveys are shown on the Phase 1 Habitat map illustrated in **Figure 3.1**. The location of the target notes and the preliminary works boundary are also shown on this figure.

The preliminary works area comprises open sheep grazed pasture, fringed by reinstated coastal dune vegetation parts of which have been planted with trees and scrub. The hydrology and pedology of this area were irreversibly altered as a result of works associated with the building of the Sizewell 'A' and 'B' Stations (adjacent to its southern boundary), and as a result it has lost much of its botanical merit. Habitats adjoining or in close proximity to the preliminary works area are of considerable ecological interest however. These include wet meadows (and associated wetland habitats and ditch systems), dune systems, shingle plant communities and wet semi-natural woodland. The quality of the shingle, grazing marsh and associated wetland habitats have led to substantial areas of these in close proximity to the site being designated for their ecological interest.

The entire BE land holding at Sizewell (some of which was not included in the Extended Phase 1 Survey), including the preliminary works area and the Sizewell 'B' Station (which occupies 0.36km^2/36ha) extends to approximately 6.69Km^2/669ha. The dominant habitats are arable farmland and woodland / scrub, with each accounting for approximately 30% of the land area. A considerable area of coniferous and mixed woodland is present around Goose and Kenton Hills, and there are scattered blocks and linear belts of semi-natural deciduous woodland throughout. Grazing marsh and heathland / acid grassland are also well represented, with both habitats covering approximately 10% of the land holding, while fen / reedbed, foreshore and pasture each cover approximately 3% of the land within the estate. Ten residential properties are also present within the landholding.

3.1.1 Preliminary Works Area (including Temporary Works Area and Access Road)

The preliminary works area is divided into 3 zones: the proposed power station site, the proposed access road and the temporary works area or construction compound. The locations of the various habitats recorded during the survey are shown on the Phase 1 Habitat map illustrated in **Figure 3.1**. The location of the target notes (TN) and the preliminary works boundary are also shown on this figure.

The proposed power station area comprises a mosaic of re-instated dune grassland and bare shingle, scattered newly-planted scrub within semi-improved grassland, improved grazed pasture and two small belts of semi-natural broad-leaved woodland.

The bare shingle habitats are along the beach that runs parallel to the eastern boundary of the power station site (TN11). Vegetation along the beach is limited with some occasional growth that generally includes yellow-horned poppy (*Glaucium flavum*), wood sage (*Teucrium scorodonia*) and sea kale (*Crambe maritima*). Moving away from the sea, the habitats succeed

into a poorly developed dune system (TN10) where dune grassland communities have been heavily disturbed as a result of regular use by the public Marram grass (*Ammophila arenaria*) and bracken (*Pteridium aquilinum*) dominate these habitats with scattered patches of sea buckthorn (*Hippophae rhamnoides*), gorse (*Ulex europaeus*) and broom (*Cytisus scoparius*) locally abundant, particularly in the dune slacks where a variety of moss and lichen species also occur. As the dune system moves inland, scrub and rank grassland habitats become more widespread and dominant. A thin strip of marram and wavy hair-grass (*Deschampsia flexuosa*) dominated grassland is present with common occurrences of sea couch (*Elytrigia atherica*), bramble (*Rubus fruticosus* agg.), dandelion (*Taraxacum officinale*) and sea spurge (*Euphorbia paralias*).

Land previously associated with the construction zone of Sizewell 'B' power station is located to the west of the dune grassland habitats and to the north of the existing nuclear facilities. The typical dune plant communities do not occur on this land as natural processes have been arrested and the hydrology and pedology of the area has been irreversibly altered. Habitats within this area include semi-improved tussocky rank grassland with planted native scrub species around the periphery of the disturbed area. The rank grassland is dominated by cocksfoot (*Dactylis glommerata*) and wavy hair grass with locally frequent occurrences of marram. Herb species including wild carrot (*Daucus carota*), curled dock (*Rumex crispus*), common couch (*Elytrigia repens*), creeping thistle (*Cirsium arvense*) and dandelion frequently occur. A relatively dense and even distribution of planted native scrub species occurs within the tussocky grassland around the periphery of the disturbed area and includes Corsican pine (*Pinus nigra maritima*), holly (*Ilex aquifolium*), gorse, alder (*Alnus glutinosa*), silver birch (*Betula pendula*), hornbeam (*Carpinus betulus*), blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus mongyna*).

Within the central part of the proposed power station site there are three fields of sheep grazed pasture (TN13) that is maintained at a very low sward height during early spring but left ungrazed for the remainder of the year. Frequently occurring species include cocksfoot, white clover (*Trifolium repens*), dandelion, daisy (*Bellis perennis*), bristly oxtongue (*Picris echioides*) and ribwort plantain (*Plantago lanceolata*). These areas of pasture are fragmented by belts of semi-natural broad-leaved woodland that comprises silver birch, pedunculate oak (*Quercus robur*), hawthorn, blackthorn, hornbeam, alder and holly.

The proposed new access road route runs along an existing agricultural track that passes through coniferous plantation woodland, and is bordered at points by agricultural land (ploughed arable fields at the time of the survey). Some parts of the woodland running alongside the track have been planted with broad-leaved species and as such, a more mixed composition is present. The route of the access road passes over the edge of the Sizewell Belts dyke systems and through semi-improved grassland before meeting with the proposed power station site at its most eastern point.

The most western point of the new access road route begins at Lovers Lane and passes through ploughed arable fields and over a farm track before passing along the edge of mixed plantation woodland to the south of the track (TN3). This woodland comprises an even mix of Corsican pine, silver birch, sweet chestnut (*Castanea sativa*), pedunculate oak, sycamore (*Acer pseudoplatanus*) and common lime (*Tilia x europaea*). The understorey is well developed with frequent holly and elder (*Sambucus nigra*), often covered in honeysuckle (*Lonicera periclymenum*), hawthorn and bramble with locally abundant gorse particularly within the woodland margins. The ground flora at the time of the survey comprised lesser celandine (*Ranunculus ficaria*), wood speedwell (*Veronica montana*), cow parsley (*Anthriscus sylvestris*), dog violet (*Viola canina*), lords-and-ladies (*Arum maculatum*), snowdrops (*Galanthus nivalis*)

and cleavers (*Gallium aparine*). Non-native rhododendron (*Rhododendron* spp.) bushes are also locally abundant.

The northern edge of the western end of the access road route (running parallel to Leiston Carr and Kenton Hills) at this point is bordered by ploughed arable fields (TN16) of wheat (*Triticum turgidum*) and barley (*Hordeum distychum*). The fields have well established although thin margins comprising false-oat grass (*Arrhenatherum elatius*), common ragwort (*Senecio jacobea*) common nettle (*Urtica dioica*), red dead-nettle (*Lamium purpurea*), broad-leaved dock (*Rumex obtusifolius*) and herb Robert (*Geranium robertianum*). A belt of deciduous woodland dissects the arable fields at one point and comprises pedunculate oak, silver birch, alder, white willow (*Salix alba*) and sycamore.

The access road continues running east through further plantation woodland (TN2) at Kenton Hills, Nursery Covert and to the south of Dunwich Forest and Goose Hill, that is primarily coniferous and dominated almost fully by Corsican pine. The understorey is comprised of some deciduous species including honeysuckle covered elder and holly with common nettle, bramble, spear thistle (*Cirsium vulgare*) and cleavers with large areas of the ground flora totally dominated by bracken. Along the edges of the coniferous plantation, some areas of deciduous woodland species have been planted including pedunculate oak, goat willow (*Salix caprea*), silver birch and alder, with areas of rhododendron and gorse.

The track passes over and adjacent to a number of wet ditches that are linked to a wider and extensive dyke system (TN4) to the south of Dunwich Forest. The ditches are generally between 3 and 5m in width. The majority have a flow that varies in strength and they support a diverse aquatic flora including greater water parsnip (*Sium latifolium*), watercress (*Nasturtium officinale*), floating sweet-grass (*Glyceria fluitans*) and whorled water-milfoil (*Myriophyllum verticillatum*). Bank habitats are generally well vegetated with a variety of sedge (*Carex* spp.) and rush (*Juncus* spp.) species in addition to yellow flag (*Iris pseudocorus*), common reed (*Phragmites australis*) and common reedmace (*Typha latifolia*). At points where the water table is high, the track passes through carr woodland (TN4) generally dominated by alder and silver birch.

The access road continues to pass through coniferous and mixed woodland habitats until it reaches the south-eastern corner of Goose Hill at its eastern most point where it turns south towards the proposed power station site. The access road then passes over a very small part of the Sizewell Marshes SSSI at its most north-eastern point (it is assumed that the access road would be raised above ground level here, probably via a small bridge). At this point the habitats generally comprise rank grassland and scattered immature trees, generally silver birch, and scrub, before entering the planted scrub areas of the proposed power station site as described above.

The temporary works area is situated to the north of the proposed access road and is composed of arable land to the west, a small belt of deciduous woodland and a large area of pine plantation to the east. As noted above, some areas of coniferous woodland have been re-planted with broad-leaved species. A single small wet ditch is located to the southern boundary of the temporary works area (TN4) and is ecologically linked to the wider dyke system as discussed above. This ditch is surrounded by alder carr woodland and is 100% shaded and as such, aquatic and marginal vegetation is more limited than in other ditches within the wider area.

As noted previously, the arable land within the study area comprised ploughed fields at the time of the survey. These are generally planted with wheat and barley crops. The margins are well-

established in places with false-oat grass, common ragwort, common nettle, red dead-nettle, broad-leaved dock, bracken and herb Robert commonly present. A belt of deciduous woodland dissects the arable fields at one point as noted above.

The eastern part of the temporary works area (referred to as Dunwich Forest (TN14) and Goose Hill) is dominated by mature Corsican pine woodland dissected by rides throughout with a composition as noted above with a limited understorey of holly, elder, hawthorn. Bracken, bramble and common nettle heavily dominate the ground flora. Some very small areas of this woodland have again been planted with deciduous species including silver birch, goat willow, white willow, oak and alder. Recently felled areas are also often planted with Corsican pine saplings and are commonly invaded by gorse.

3.1.2 Land within 750m of the Preliminary Works Boundary

The land beyond the proposed preliminary works areas is an extensive mosaic of agricultural farmland primarily consisting of ploughed arable fields and hedgerow networks integrated with deciduous and coniferous plantation and semi-natural woodland habitats, semi-improved and improved neutral and acid grassland swards, dense and scattered scrub and general rural infrastructure including a number of farms and residential dwellings. A small area of newly re-instated heath is also within the estate. Due to the high water table in areas across the estate, a variety of well-established and ecologically diverse wetland habitats are present including open water (freshwater and brackish) in the form of ditches and ponds, marshland, fen and lowland unimproved wet meadow. Furthermore, the proximity of the study area to the coastline provides vegetated shingle and dune grassland habitats to the east of the proposed power station site.

Agricultural Land

As noted previously, ploughed arable fields cover a large proportion of the study area. The field margins vary in composition and diversity across the study area. In the main, the margins are 2m in width, but in some places are wider (up to 6m), and support ruderal and herb species including broad-leaved dock, red dead-nettle, field speedwell (*Veronica persica*), common ragwort, common nettle, cocksfoot, false oat-grass, herb Robert, teasel (*Dipsacus fullonum*) and hoary plantain (*Plantago media*). Round-leaved cranesbill (*Geranium rotundifoilum*), lesser celandine and wood spurge (*Euphorbia amygdaloides*) also frequently occur with scattered encroaching scrub species such lesser burdock (*Arctium minus*), blackthorn and bramble in abundance. Common reed also occurs in the margins where wetter soil conditions exist.

Hedgerows

Almost fifty hedgerows occur within the wider study area, generally adjacent to and dissecting arable fields. These hedgerows lie outside the preliminary works area and all but one are relatively distant from the proposed development. The hedgerow that is the exception is located approximately 10m north-west of the north-western boundary of the proposed power station site. This hedgerow is gappy and comprises goat willow, white willow, hawthorn and elder with a limited understorey including false oat-grass, cocksfoot, cleavers and common nettle[4].

The hedgerow network is extensive and well connected, comprising some species-rich hedgerows with trees and more frequently, species-poor hedgerows associated with agricultural

[4] This hedgerow is not considered to be 'important' as classified under the *Hedgerow Regulations 1994*.

field boundaries. The network is generally dominated by hawthorn, blackthorn, elder and pedunculate oak trees.

Intact species-poor hedgerows dominated by just one or two species including hawthorn, blackthorn or hornbeam commonly occur on the agricultural land and are often heavily managed, particularly when adjacent to roads. Some of the hedgerows are comprised almost entirely of deciduous mature trees and common species include pedunculate oak, ash (*Fraxinus excelsior*), alder, white willow, goat willow, sweet chestnut, sycamore, silver birch and field maple (*Acer campestre*).

For the more-species rich hedgerows, the understorey often includes lords-and-ladies, dog's mercury (*Mercurialis perennis*), hart's tongue (*Asplenium scolopendrium*), cleavers, cocksfoot, false oat-grass, common nettle, ramsons (*Allium ursinum*), dog violet, hairy brome (*Bromus ramosus*), herb Robert and wood avens (*Geum urbanum*). Bluebells (*Hyacinthoides non-scripta*) and wood spurge also occasionally occur along with creepers including hop (*Humulus lupulus*) and black bryony (*Tamus communis*).

Woodland

Pockets of woodland occur across the study area. As noted above, a large block of coniferous plantation dominated by Corsican pine is located across the central part of the study area encompassing Leiston Carr, Kenton Hills, Nursery Covert, Dunwich Forest and Goose Hill. These woodlands are essentially coniferous although some felled areas have been planted with deciduous species including pedunculate oak, silver birch, alder, sweet chestnut (*Castanea sativa*), goat willow and holly.

Distinct areas of deciduous woodland also occur within the study area. Ash Wood (TN1), located to the north of Ash Wood Cottages is a semi-natural broad-leaved woodland with dominant tree species including oak, ash and sweet chestnut. The ground flora is reasonably well established with dog violet, lords-and-ladies, common nettle, lesser celandine and fat-hen (*Chenopodium album*) in the marginal areas close to the arable fields. Bluebells also occur occasionally along with large areas of creeping ivy (*Hedera helix*). To the south-east of Ash Wood the woodland habitats have been extended, creating Great Mount Wood through the planting of Corsican pine with a deciduous woodland species edge that includes pedunculate oak, ash, sweet chestnut and holly, linking up with a further belt of deciduous woodland to the west, referred to as The Grove.

Reckham Pits Wood and Rookyard Wood, to the south of the Sizewell Belts SSSI, are predominantly deciduous woodlands dominated by silver birch with rare occurrences of Corsican pine. Holly and bramble occur frequently within the understorey with honeysuckle, bracken, common nettle, cleavers, herb Robert and wood sorrel (*Oxalis acetosella*) also in abundance. Mistletoe (*Viscum album*) was apparent within some of the trees.

Other pockets and belts of woodland across the study area are often dominated by oak or silver birch, such as Grimsey's to the south-east of Nursery Covert.

Grassland and Scrub

Grassland habitats across the study area are generally semi-improved and neutral in nature although some areas of acid grassland have been re-instated and are currently grazed. (Wet grasslands are referred to in detail below under the Wetlands section)

A large area of semi-improved neutral rank grassland (TN9) habitat occurs adjacent to the sand dune system to the north of the proposed power station site. The dominant species are marram, wavy-hair grass, cocksfoot and sea couch. A variety of moss and lichen species occur frequently, along with areas of encroaching scattered scrub. Gorse, bramble, sea buckthorn and broom occur in abundance along with young saplings of Corsican pine, silver birch, elder and hazel (*Corylus avellana*).

Leiston Common (TN15), located to the north-east of the town of Leiston is an area of semi-improved grazed acid grassland dominated by sheep's fescue (*Festuca ovina*) and an abundance of common bent (*Agrostis capillaris*) and fine-leaved sheep's-fescue (*Festuca filiformis*). Ribwort plantain, creeping buttercup (*Ranunculus repens*), dandelion and scentless mayweed (*Tripleurospermum inodorum*) were also locally apparent.

A further area of acid grassland has been re-instated (TN7) on the previously arable Retsom's field to the north of the study area and exhibits a sward dominated again by sheep's-fescue and common bent and is regularly grazed. A small area of heathland has also been created within Retsom's field that is now dominated by heather (*Calluna vulgaris*) and localised patches of bracken.

Dunes and Shingle

As noted in section 3.1.1, the study area lies adjacent to Sizewell Beach. Vegetated shingle habitats lie parallel to the shoreline beyond which a narrow dune system occurs with a species composition as noted above.

Open water and Wetland Habitats

Open water and wetland habitats occur extensively across the study area where the water table is high. The majority of the water bodies are man-made in the form of drainage channels (created historically for agricultural purposes), lagoons and pools, now managed for the benefit of biodiversity. The wetland habitats include marshland, fen, lowland meadow and swamp.

An extensive dyke system occurs across a large proportion of the British Energy Estate. Within the boundaries of the Sizewell Marshes SSSI, this area is also referred to as the Sizewell Belts. Lowland unimproved wet meadow (TN5) occurs between the dykes and is characterised by an abundance of plant species including sweet vernal grass (*Anthoxanthum odoratum*), crested dog's-tail (*Cynosurus cristatus*), rough-stalked meadow-grass (*Poa trivialis*) and Yorkshire-fog (*Holcus lanatus*). Frequent occurrences of bogbean (*Menyanthes trifoliata)*, marsh pennywort (*Hydrocotyle vulgaris)*, large birds-foot-trefoil (*Lotus uliginosus)*, ragged robin (*Lychnis flos-cuculi)* and bog pimpernel (*Anagallis tenella*) were also noted. A noted earlier, the ditches are known to support a diverse aquatic flora including greater water parsnip, watercress, floating sweet-grass and whorled water-milfoil. Bank habitats are generally well vegetated with a variety of sedge and rush species in addition to yellow flag, common reed and common reedmace.

Large areas dominated by common reed and reedmace also occur within the area (TN8). These habitats are on an area of deep fen peat with a permanently high water table. There is an extensive ditch system and the area is prone to flooding.

Large pools and lagoons have been created for their ornithological interest within the marshy grassland and fen areas located towards the coastline. The shorelines of these open water bodies are generally completely dominated by common reed.

3.2 Species

Any sightings or evidence of protected species seen during the survey are described in the sections below. The potential for each species or group of species to occur based on the habitats present is also discussed.

3.2.1 Badger

Preliminary Works Area (including the Temporary Works Area and Access Road)
No evidence of the presence of badgers was noted within the proposed power station site although probable badger foraging signs were identified in areas within the coniferous and mixed woodland plantations associated with the temporary works area and access road. The woodland habitats within the preliminary works area are suitable to support the building of setts and foraging activities in areas where the water table is low and that offer good shelter for badgers traversing the wider landscape, particularly considering the good connectivity of these areas.

Land within 750m of the Preliminary Works Boundary
A badger sett was identified in Ash Wood during the survey and although some spoil heaps were present outside, the presence of debris and cobwebs within the sett holes indicated that the sett had not been active for some time. Furthermore, the tracks leading to the sett were relatively overgrown indicating that the sett is likely to be an outlying sett, used sporadically, rather than a main sett.

Other than some minor foraging marks within the coniferous woodland, no further evidence of badger activity was identified during the survey although, as noted above, the habitats within the estate are suitable to support this species where the water table is low. The marshland and fen habitats are generally unsuitable to support this species due to their need to burrow into dry ground.

3.2.2 Bats

Preliminary Works Area (including the Temporary Works Area and Access Road)
No direct evidence of bat activity was identified during the survey.

The habitats within the preliminary works area are optimal for many of the British bat species. There are potential roosting opportunities within the deciduous woodland and coniferous plantation, while grassland habitats and tree belts are likely to be used for foraging and commuting.

Land within 750m of the Preliminary Works Boundary
The wider landscape comprises a mosaic of wetland habitats, woodland, hedgerows, grassland and scrub. This range of habitats provides optimal foraging and commuting habitat for many of the native bat species in the UK. Additionally, areas of mature woodland, farm buildings and residential dwellings within the estate are suitable to support roosting bats.

3.2.3 Water Vole

Preliminary Works Area (including the Temporary Works Area and Access Road)
No direct evidence of water vole activity was identified during the survey. There are no watercourses within the boundaries of the proposed power station site and as such, this area is not suitable to support water voles. The temporary works area and access road route include some open ditches that are well vegetated and suitable to support this species particularly bearing in mind the connectivity of these features with a wider and extensive dyke system.

Land within 750m of the Preliminary Works Boundary
Water voles were observed feeding at two locations within the Sizewell Belts during the survey (TN12), and several latrines and feeding stations were also identified within this area. These sightings and the recorded history of water voles within the estate indicate that water voles are likely to occur throughout the extensive ditch network that covers the wider landscape.

3.2.4 Otter

Preliminary Works Area (including the Temporary Works Area and Access Road)
No direct evidence of otter activity was identified during the survey and as noted above, there are no watercourses within the boundaries of the proposed power station site. Otters can range several hundred meters from a water course and as such, some of the scrub and woodland habitats may provide suitable sheltering habitats for this species, bearing in mind the location of suitable watercourses within the wider area. The temporary works area and access road route include some wide and open ditches that are bounded by woodland habitats and linked to an extensive ditch system. As such, these ditches have the potential to support this species.

Land within 750m of the Preliminary Works Boundary
No evidence of any otter activity was identified during the survey work. Nevertheless, the ditch system and associated terrestrial habitats are suitable to support this species. Feeding opportunities are likely to be limited however, due to the nature and composition of the habitats present i.e. there is a lack of a good and varied fish population within the network. Furthermore, there are historic records of this species within the Sizewell Belts (TN6).

3.2.5 Great Crested Newt

Preliminary Works Area (including the Temporary Works Area and Access Road)
No direct evidence of great crested newts was identified during the survey. There are no discrete pools within the proposed power station site although as noted above, the temporary works area and access road route does include a number of ditches. These ditches are known to support large populations of stickleback. They also have a flow that can be quite strong and the water is known to be brackish in areas. However, the terrestrial habitats are optimal for this species and, bearing in mind the presence of this species in the wider area (the nearest records are approximately 2.5km to the west) there is some limited potential for great crested newts to be present in the preliminary works area or within a perimeter of 500m around it.

Land within 750m of the Preliminary Works Boundary
As above, the water bodies and ditches across the survey area are sub-optimal due to the high fish populations, brackish conditions in areas, strong flows and the presence of wildfowl.

However, this species is known to be present further afield and terrestrial habitats within the survey area are suitable to support this species.

3.2.6 Reptiles

Preliminary Works Area (including the Temporary Works Area and Access Road)
No direct evidence of reptile activity was noted during the survey however the mosaic of rank grassland dune grassland, woodland edge and glade habitats (the central woodland areas are sub-optimal due to over shading) and scattered scrub within the preliminary works area is considered suitable to support sheltering, basking and feeding native reptile species.

Land within 750m of the Preliminary Works Boundary
Common lizard (*Lacerta vivipara*) were observed during the survey work (within the marram grassland along the dune slacks running parallel to the shoreline to the east of the existing power station). Furthermore, the mosaic of habitats present within the survey area is suitable for supporting further common reptile species most notably adder (*Vipera berus*), grass snake (*Natrix natrix*) and slow worm (*Anguis fragilis*).

3.2.7 Invertebrates

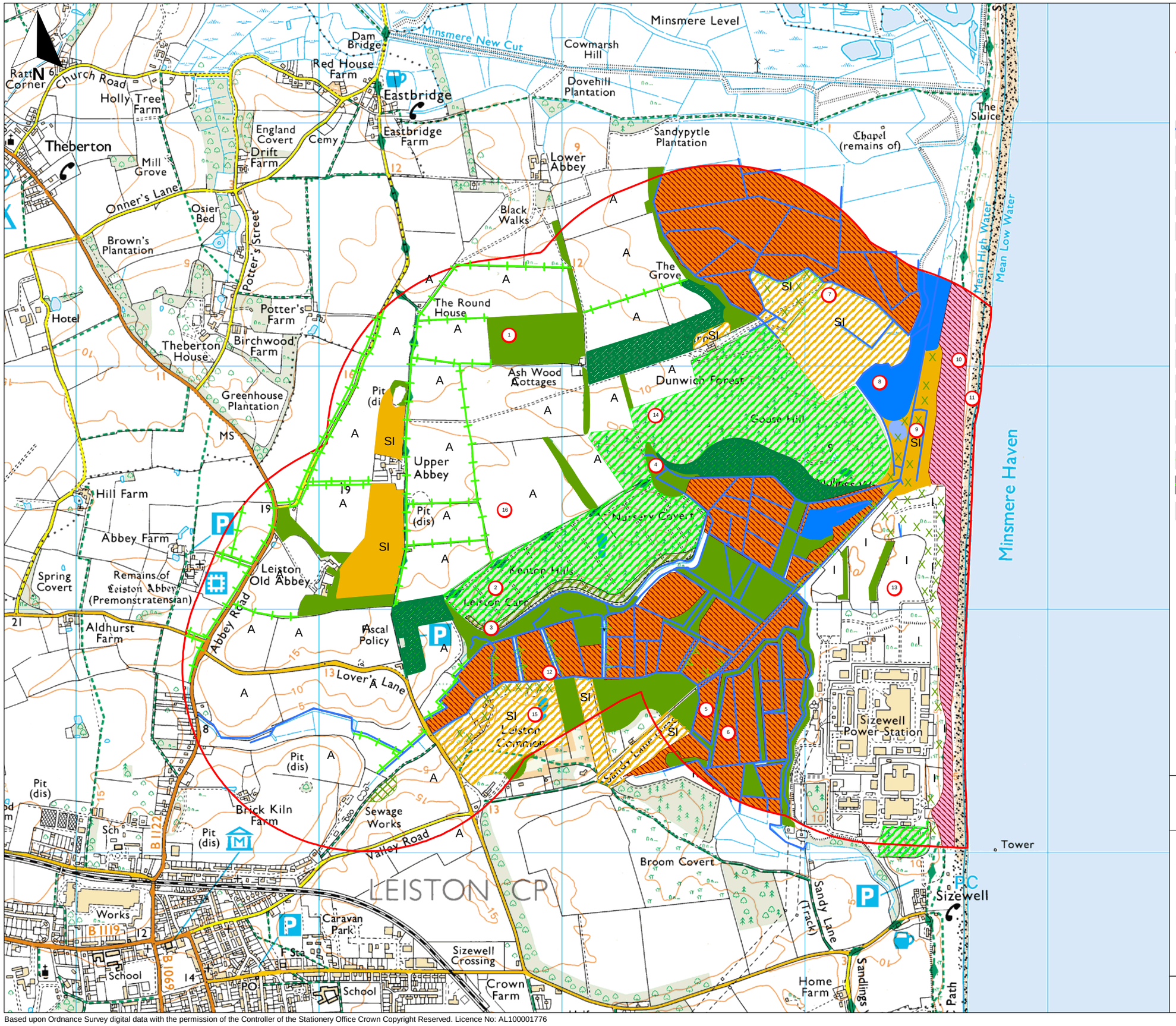
Preliminary Works Area (including the Temporary Works Area and Access Road)
The habitats present within the preliminary works area are well established and are likely to support diverse assemblages of invertebrate species although notable and scarce species are more likely to occur within the wider area rather than on site. Edge habitats backing on to the wetland areas may support more notable species.

Land within 750m of the Preliminary Works Boundary
The mosaic of wetland aquatic and terrestrial habitats present within the wider survey area provide unique environmental conditions that are likely to support notable and scarce assemblages of invertebrate species.

3.2.8 Other Fauna

Birds were not considered during the Extended Phase 1 Survey work as they are the subject of a separate structured survey programme.

Natterjack toads (*Bufo calamita*) have been introduced onto the Sizewell Estate by BE and the Suffolk Wildlife Trust. Two ponds have been created within a field of acid grassland to the north of the preliminary works area (TN7) to accommodate them. Adult toads will return to these ponds to breed for the first time this year, assuming that toadpoles released during the first year of the reintroduction programme have survived the intervening period. This will be monitored by Suffolk Wildlife Trust.



Key

- 750m buffer from site boundary (Study area)
- Swamp
- Standing water
- Running water
- Semi-natural broad-leaved woodland
- Plantation coniferous woodland
- Plantation broad leaved woodland
- Plantation mixed woodland
- A — Arable land
- I — Improved grassland
- SI — Semi-Improved neutral grassland
- SI — Semi Improved acid grassland
- Marsh / marshy grassland
- Dune grassland
- Dense, continuous scrub
- Scattered scrub
- Native species - poor hedgerow
- Native species - rich hedgerow
- ② Target notes

0 m — 500 m

Scale 1:15,000 @ A3

British Energy

British Energy
Sizewell Power Station

Figure 3.1
Phase 1 Habitat Plan

July 2008
19801-R26c.WOR tugwc

Entec

4. Further Survey Recommendations

4.1 Habitats

The botanical quality of the habitat within the preliminary works area, including the site of the proposed power station and the construction compounds is lower than that of the adjacent marshes and coastal habitats. The marshes have been designated a Site of Special Scientific Interest (SSSI) due to the quality and extent of the wetland habitat present. There is considerable baseline data for the botanical communities that occur in this area, however, and as such baseline botanical survey work is not likely to be required for the marshes at this stage.

Recommendation

At this stage it is recommended that an NVC survey is carried out of the entire new build area (including the indicative site compound and a perimeter of 200m around it) and of all significant habitat (i.e. any habitat other than open arable fields) within 100m of the indicative location of the access road and site compounds. Further botanical work, e.g. survey of selected dykes, is likely to be required to form a baseline for monitoring once a hydrological assessment (pin-pointing key areas where effects might occur) has been conducted and site design has advanced.

4.2 Fauna

4.2.1 Badger

Some limited signs of badger activity were recorded during the Extended Phase 1 Habitat Survey, and there is a recorded history of badgers occurring in several woodlands within the estate, with three cubs seen at one location in 2006. Surveys undertaken in 1992 by Bioscan recorded badger activity around Kenton and Goose Hills, and a badger sett is known to be present in Ash Wood (Carl Powell, SWT, pers comm., 2007).

No formal survey work or monitoring of badgers has been undertaken however, and there is very little historical information available on the distribution of the species at Sizewell. While some survey work will be required to pin-point and classify badger setts, and an assessment of foraging value of the areas to be lost to development will be required, it seems unlikely at this stage that badger welfare will be a key consideration with regard to the development.

It is not envisaged at this stage that a bait marking study will necessarily be required at Sizewell, as it would not necessarily appear that badgers are at carrying capacity or that substantial foraging areas would be lost.

Recommendation

A walkover survey of all areas of suitable habitat within 500m of the proposed new build area should be sufficient to gain a baseline indication of use of the area by badgers and to determine how many active setts and social groups are likely to be present.

4.2.2 Bats

Work undertaken on the Sizewell Estate by the Suffolk Bat Group has found that common and soprano pipistrelle, Natterer's bat and barbastelle are among the species that occur locally. Noctule and Daubenton's bat were recorded during surveys undertaken by Bioscan in 1991, and brown long-eared bat by Cresswell Associates in association with the decommissioning EIA for Sizewell 'A' in 2005.

Pipistrelles are known to roost in the barns at Upper Abbey Farm and in bat boxes at Kenton and Goose Hills. Noctule has been detected in the area around Sandy Lane and Grimsey's Wood, while Daubenton's bat has been recorded foraging over the Sizewell Marshes. Natterer's bat breeds in one of the barns at Upper Abbey Farm, and barbastelle has been recorded in the same barn complex[5]. Barbastelle have not been proven to breed on the estate to date, and any breeding colony located would be highly important, as very few maternity roosts are known in the UK. Surveys conducted by Cresswell Associates as part of the decommissioning of Sizewell 'A' recorded common and soprano pipistrelle as well as brown-long-eared bats over Hill Wood, Coronation Wood and in the vicinity of the strip of woodland adjacent to the eastern boundary of the SSSI.

The number of bat species that have been recorded within the estate and the potential for woodland and hedgerow trees within the development footprint (particularly around the indicative site compounds and access road) to accommodate roosts indicate that bats will be a key ecological concern with regard to the development. The importance of habitats that will be lost will have to be established through a programme of survey work in order that appropriate mitigation and compensation measures can be put in place.

Given the number of mature trees within close proximity to the indicative route of the proposed access road, there is significant potential for construction traffic to disturb roosting bats. It follows that considerable survey work will be needed to establish a baseline for evaluation. Tree roosts can be very difficult to pinpoint, particularly those containing small numbers of bats and / or late-emerging species. It should also be noted that bats (even during the maternity period) frequently move from tree to tree. It is important, therefore, that a combination of appropriate survey methods is used, with repeat surveys over the summer and autumn, in order that important roosting areas are identified.

Recommendation

Initial bat survey work will involve visual inspections of potential roosting locations within and in close proximity to the new build area followed by a programme of bat activity surveys. A walkover inspection of the preliminary works area, the proposed new access route and the whole of the area of woodland at Dunwich Forest/Goose Hills will be undertaken. Suitable trees within surrounding trees and woodland will be visually inspected. In addition to this, five bat activity surveys will be undertaken between June and September. Static Anabat recorders will be used to supplement the data collected during this work. The results of these surveys will inform the requirement for further bat survey work in subsequent years.

[5] A barbastelle was recorded roosting in one of the barns with Natterer's bats in 2004 by members of the Suffolk Bat Group. Previously several barbastelles had been recorded using the Upper Abbey barns in 1996, with records of a single animal between 1997 and 2000 inclusive.

4.2.3 Great Crested Newt

There are no discrete pools within the proposed power station site, but the extensive ditch system associated with the Sizewell Marshes, adjacent to this area, does have some potential to support great crested newts. The ditches were not systematically surveyed for newts as part of the EIA for the decommissioning work for Sizewell 'A' and there has been no historical survey or sampling programme commissioned by BE. The indications are that due to a combination of factors (predominantly the presence of fish, the year round presence of water birds, the variable rate of flow and the salinity of some of the dykes) the ditches are sub-optimal for newts. Nevertheless, great-crested newts do occur within the wider area, having been recorded in pools to the west of the British Energy Estate (at Abbey Farm and Lady Chapel) in the late 1990s. These pools are approximately 2.5km west of the proposed new build area and more than 500m from the proposed access road.

Given the limited potential for newts to occur within the estate it is extremely unlikely that great crested newts will be a key consideration in the proposed new build assessment. In the absence of baseline data, however, some survey work will be required to confirm the presence or absence of the species.

Recommendations

Twelve sections of dyke within the Sizewell Marsh dyke system are to be surveyed for great-crested newts. All are within 250m of the proposed new build area (and associated infrastructure). The water-bodies selected for survey are those that appear most suitable for newts, having a good ratio of aquatic vegetation to open water and a low flow in and out. Given the sub-optimal conditions for newts that occur across Sizewell Marshes this seems an appropriate sampling strategy to investigate presence or absence.

4.2.4 Reptiles

The indication from the Extended Phase 1 Habitat Survey and bird survey work is that grass snake, adder and common lizard are all widespread and common on the Estate and are likely to occur in large numbers in parts of the proposed build area. It seems likely, given the habitats present, that slow-worm will also be present.

Surveys of Leiston Common and Goose Hills commissioned by BE and records held by Suffolk Biological Records Centre suggest that adder (a Suffolk BAP species), grass-snake and slow-worm are widespread within the estate. The pasture within the proposed nuclear power station footprint has limited potential to support reptiles, but the site compounds and access road may result in land take from habitats supporting considerable populations. Survey work will therefore be necessary to design suitable mitigation and to establish a translocation strategy.

Recommendation

In accordance with best practice methodology for reptile surveying outlined by Froglife, reptile surveys will be conducted in all areas within 200m of the proposed new build and associated infrastructure at an intensity that will enable class size assessments to be undertaken for all species encountered. Twenty checks of all 'tiles' will be undertaken between June and October 2007.

4.2.5 Water Vole

Sizewell Marshes is regarded as a key site for water vole in Suffolk. The species has been in considerable decline both nationally and regionally, and is included as a key species on both the UK and Suffolk Biodiversity Action Plans. Surveys have been undertaken of the Sizewell Belts as part of the UK Key Sites Project since 2001, with twelve transects monitored by Holloway University and SWT on an annual basis. No information has been received to date detailing the areas that are covered or the results of the survey work.

There is no potential for water vole to occur within the proposed new power station footprint, as watercourses are absent. Nevertheless, there is the potential for water vole habitat to be directly affected by the access road, and some survey will therefore be required to establish the proximity of water vole populations to the access road, construction compounds and the main build area. On the basis of the current proposed design it is unlikely that water voles will be a key ecological consideration in the assessment process.

Recommendation

A water vole survey will be undertaken in conjunction with the otter survey work outlined below. The survey programme will be reviewed based on results and any further sources of information that become available.

4.2.6 Otter

Otter signs are regularly found around water courses throughout the estate and there have also been occasional sightings of family groups, suggesting that the species may breed in the Sizewell Belts. The proposed new build could potentially disturb otters breeding and foraging in the Sizewell Marshes and result in a barrier to movement being established between the Sizewell Marshes and the Minsmere to Walberswick area. The proposed access road could also conceivably result in increased mortality in dispersing and commuting animals. It will be necessary to investigate whether there are any holts within close proximity of the build area and to establish mitigation to minimise potential effects. Effects on otters have the potential to be a key ecological consideration with regard to the environmental assessment.

Recommendation

Otter surveys of the ditches and other watercourses within a perimeter of 500m around the proposed new build area will be undertaken. This will allow the potential of the habitat to support feeding, resting and breeding otters to be evaluated.

4.2.7 Invertebrates

The description for Sizewell Marshes SSSI states that the area is of exceptional interest for its invertebrate fauna and supports a wide range of taxa and many nationally rare or scarce species. Invertebrate taxa have not been systematically surveyed by BE within the BE Estate. The last focussed invertebrate work was undertaken by Bioscan in 1991 and concentrated on aquatic and terrestrial invertebrates present in the Sizewell Marshes SSSI. SWT undertake annual butterfly transects (since 2004), to monitor the numbers of larval pits dug by ant lions (a Suffolk BAP species) at Walk Barns and conduct occasional moth trapping in conjunction with the Suffolk Moth Group. Nationally notable moths, butterflies, arachnids, soldier flies and dragonflies have all been recorded.

The initial invertebrate work that will be required will involve surveys of habitats within the power station footprint and indicative site compounds to determine the value of these areas to invertebrates. This will be conducted in conjunction with a review of the Bioscan reports and other literature held by consultees for the site. Entomology will therefore be a key consideration in the ecological assessment.

Recommendation
Initial invertebrate surveys will predominantly be undertaken within the proposed development footprint although some control areas outside the build area (woodland and coastal habitats) will also be surveyed in order that the land that will be lost can be put into perspective in terms of its quality for invertebrates. Survey will be conducted in conjunction with a review of all available information held by statutory and non-statutory consultees. Focussed invertebrate surveys of some areas of dyke within the Sizewell Marshes SSSI may be necessary prior to the build once the design of the proposed power station has been progressed and a hydrological survey can establish key areas for monitoring.

The taxa selected for survey would include virtually all insect groups including Hemiptera, Coleoptera, Diptera, aculeate Hymenoptera and the smaller orders. Four surveys would be undertaken between early June and the end of September 2007. Specific checks will be undertaken for the presence of ant lions in the Goose Hills / Dunwich Forest area (away from their known breeding locations at Walks Barn). In addition, specific surveys will be conducted to gain an indication of the size and persistence of the white admiral population at Kenton / Goose Hills. The visits would take account of the emergence periods of key species (for example, published records for the ant-lion are between 21 July and 5 September).

Further invertebrate survey of some of the ditch systems within the Sizewell Belts and the lower part of the Minsmere Levels are likely to be required prior to development to provide a baseline for monitoring (aquatic invertebrate communities are good indicators of water quality and environmental change). Through consultation with both statutory consultees and with hydrologists it should be possible to establish a suitable survey regime and a protocol for monitoring those areas considered to be most sensitive to environmental change rather than undertaking a broad brush survey of limited value and considerable likely cost.

4.2.8 Natterjack Toad

Pools were created for Natterjack toads in Retsom's Field in 2004, and releases of toad tadpoles were undertaken between 2005 and 2007 inclusive. The ponds are located over 500m from the new build and associated infrastructure and no effects on the toads would be likely as a result of the development.

4.2.9 Other Species

The Extended Phase 1 Habitat Survey and desk study has not revealed any other receptors than those identified above that will need to be addressed in detail in the Environmental Assessment. This will be kept under review as the studies progress.

5. Summary

The Extended Phase 1 Habitat Survey has characterised the habitats within and surrounding the preliminary works area.

The preliminary works area is divided into 3 zones: the proposed power station site, the proposed access road and the temporary works area.

The power station site primarily comprises improved grazed pasture with newly-planted scrub on rank semi-improved grassland habitats around the periphery. Further habitats within the site include reinstated dune grassland and bare shingle, and two small belts of semi-natural broad-leaved woodland.

The proposed new access road route runs along an existing agricultural track that passes through coniferous plantation woodland, and is bordered at points by agricultural land (ploughed arable fields). Some parts of the woodland running alongside the track have been planted with broad-leaved species, and as such, a more mixed composition is present. The route passes over dyke systems and through semi-improved grassland before meeting with the power station site at its most eastern point.

The temporary works area is situated to the north of the proposed access road and is composed of arable land to the west, a small belt of semi-natural deciduous woodland and a large area of pine plantation to the east. As noted above, some areas of coniferous woodland have been re-planted with broad-leaved species. A number of dykes are also located within this area.

The land beyond the proposed preliminary works areas is an extensive mosaic of agricultural farmland primarily consisting of ploughed arable fields and hedgerow networks integrated with deciduous and coniferous plantation and semi-natural woodland habitats, semi-improved and improved neutral and acid grassland swards, dense and scattered scrub and general rural infrastructure including a number of farms and residential dwellings. A small area of newly re-instated heath is also within the estate. Due to the high water table in areas across the estate, a variety of well-established and ecologically diverse wetland habitats are present including open water (freshwater and brackish) in the form of ditches and ponds, marshland, fen and lowland unimproved wet meadow. Coastal areas to the east of the preliminary works area consist of vegetated shingle and dune grassland habitats.

The preliminary works area has the potential to support foraging badgers, foraging, commuting and roosting bat species and native reptile species within the grassland and scrub habitats and woodland edges.

The wider survey area is known to be of considerable botanical interest, and in turn, the associated assemblages of invertebrates are also of particular note. Water voles, bats, reptiles and natterjack toads are known to be present within this mosaic of habitats and there is also a potential for the area to support great crested newts, badgers and otters.

As a result of the Extended Phase 1 Habitat Survey, further survey work has been recommended in relation to detailed vegetation, badger, bat, water vole, otter, great crested newt, reptile and invertebrate surveys.

Appendix A
Protected Species Legislation

UK Protected Species

A number of wildlife species receive different levels of protection in the UK under the *Wildlife and Countryside Act 1981* (as amended). Furthermore, many wild animals are afforded additional protection by legislation relating to animal welfare issues (see below).

European Protected Species

A number of species that are protected under UK law receive further protection under Regulation 39 of the *Conservation (Natural Habitats &c.) (Amendment) Regulations 2007* (known as the Habitats Regulations), which make provision for the purpose of implementing the European Union Directive on the *Conservation of Natural Habitats and of Wild Fauna and Flora 1992*.

Bats

All British bat species are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and are afforded full protection under Section 9 of this Act. The Act makes it an offence, *inter alia*, to:

- Intentionally kill, injure, or take (handle) a bat;
- Intentionally or recklessly damage, destroy or obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not); or
- Intentionally or recklessly disturb a bat while it is occupying a structure or place that it uses for shelter or protection.

All British bat species are listed in Schedule 2 of the Habitats Regulations, which makes it an offence, *inter alia*, to:

- Deliberately capture or kill a bat;
- Damage or destroy a breeding site or resting place of any bat; or
- Deliberately disturb a bat (this applies anywhere, not just at its roost) in such a way as to be likely to significantly affect:
  - The ability of any significant group of bat species to survive, breed, or rear or nurture their young; or
  - The local distribution or abundance of that bat species.

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat (*Rhinolophus ferrumequinum*);
- Lesser horseshoe bat (*Rhinolophus hipposideros*);
- Bechstein's bat (*Myotis bechsteinii*);
- Barbastelle (*Barbastella barbastellus*);
- Greater mouse-eared bat (*Myotis myotis*);

In certain circumstances where these species are found the Directive requires the designation of Special Areas of Conservation (SACs) by EC member states to ensure that their populations are maintained at a favourable conservation status. Outside of SACs, the level of legal protection that these species receive is the same as for other bat species.

Badgers

The *Protection of Badgers Act 1992* consolidates previous legislation (including the *Badgers (Further Protection) Act 1991*). It makes it a serious offence to intentionally or recklessly:

- Kill, injure or take, or attempt to kill, injure or take a badger;
- To damage, destroy or obstruct access to a sett; or
- To disturb a badger when it is occupying a sett.

Great Crested Newts

The great crested newt is listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and is afforded full protection under Section 9 of this Act. The Act makes it an offence, *inter alia*, to:

- Intentionally kill, injure or take (handle) a great crested newt;
- Intentionally or recklessly damage, destroy or obstruct the access to any place that a great crested newt uses for shelter or protection; or
- Intentionally or recklessly disturb a great crested newt while it is occupying a structure or place that it uses for shelter or protection.

The great crested newt is listed in Schedule 2 of the Habitats Regulations, which makes it an offence, *inter alia*, to:

- Deliberately capture or kill a great crested newt;
- Damage or destroy a breeding site or resting place of any great crested newt;
- Deliberately take or destroy the eggs of a great crested newt
- Deliberately disturb a great crested newt in such a way as to be likely to significantly affect:
  - The ability of any significant group of great crested newts to survive, breed, or rear or nurture their young; or
  - The local distribution or abundance of great crested newts.

This relates to both the aquatic and terrestrial habitat that it may occupy. The legislation applies to all life stages of great crested newts.

Reptiles

The four widespread[6] species of reptile that are native to Britain, namely common lizard, slow worm, adder and grass snake, are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence, *inter alia*, to:

- Intentionally kill or injure any of these species.

Water Voles

The water vole is listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and is afforded limited protection under Section 9 of this Act. This makes it an offence to:

- Intentionally or recklessly damage or destroy or obstruct access to any structure or place which water voles use for shelter or protection; or
- Intentionally or recklessly disturb water voles while they are using such a place.

Otter

Otters are listed on Schedule 5 of the *Wildlife and Countryside Act 1981* (as amended) and are afforded full protection under Section 9 of this Act. The Act makes it an offence, *inter alia*, to:

- Intentionally kill, injure, or take (handle) an otter;
- Intentionally or recklessly damage, destroy or obstruct access to any place that an otter uses for shelter or protection; or
- Intentionally or recklessly disturb an otter while it is occupying a structure or place that it uses for shelter or protection.

All otters are also listed in Schedule 2 of the Habitats Regulations, which makes it an offence, *inter alia*, to:

- Deliberately capture or kill an otter;
- Damage or destroy a breeding site or resting place of any otter; or
- Deliberately disturb an otter in such a way as to be likely to significantly affect:
  - The ability of any significant group of otters to survive, breed, or rear or nurture their young; or
  - The local distribution or abundance of otters.

In addition, the otter is listed on Annex II and IV of the Habitats Directive. In certain circumstances where this species is found the Directive requires the designation of Special

[6] The two other native species of British reptile (sand lizard and smooth snake) receive a higher level of protection under the *Wildlife and Countryside Act* 1981 (as amended). However, the distribution of these species is restricted to only a very few sites.

Areas of Conservation (SACs) by EC member states to ensure that populations are maintained at a favourable conservation status.

All Wild Mammals (including Rabbits and Foxes)

Under the *Wild Mammals (Protection) Act 1996* it is an offence to cause unnecessary suffering to any wild animal.