



Offshore Wind Farms
EAST ANGLIA ONE NORTH
PINS Ref: EN010077

and

EAST ANGLIA TWO
PINS Ref: EN020078

Issue Specific Hearings (ISHs7)
Post-hearing submission: written and photographic
HABITATS and BIODIVERSITY

by

SEAS (Suffolk Energy Action Solutions)
EA1N – EN010077 / SEAS ID no 2002 4494
EA2 – EN010078 / SEAS ID no 2002 4496





Summary

Terrestrial Ecology, by Kinna Mosely and Dr Gillian Horrocks

1 The riparian woodland's benefits to the river and the SSSI are outlined.

2 The ancient river irrigation systems are sketched as a means of ensuring reliable distribution of channels of river water, and their benefit as a remaining foothold for species like the Hairy Dragonfly.

3 The riparian meadow is described. SEAS would like to thank Harry Barclay, horticulturalist, for help in identifying plant species there, upon which invertebrates rely.

4 The vulnerability of the groundwater to trenching is illustrated and its consequences raised again.

5 SEAS would like to thank Sarah Frances and Susie Curtis, herbologists, for their generous help in illustrating and identifying the rich variety of plant species in the riparian environment of the Hundred River, and for the gift of their own photographs from their regular logs of frequent visits to the area. High quality images are provided.

6 Other terrestrial Ecology — SEAS offers photographs of areas either not visited by the Applicant, or where the Applicant has not found evidence of important species. SEAS intends to illustrate that, despite the Applicant not being able to record rare species, like Nightingales or Bats, these are locally known, their habitat is still present, and that therefore the 'industry standard' process of analysis is not providing adequate data in this case.

7 SEAS considers the mosaic of habitat joined by hedgerow which the trenching will bisect and gives examples of the rich diversity of species recorded there. Old hedgerows have old biome; the construction project will be destructive to these and will struggle in any case to replace the hedges on acid sand without investment in irrigation.

8 Evidence of knowledge of Badgers at the substation site was requested with photos of sett entrances provided. The ecologist said the setts would be destroyed under licence.

9 Conclusions by Dr Gillian Horrocks

Terrestrial ecology

1 Hundred River

1.1 At the proposed crossing point, the River Hundred is bounded by priority deciduous woodland that offers flood protection and filtration of contaminants from the water, thanks to its ancient bankside planting and coppicing. It provides flow regulation and cooling to the benefit of the SSSI and RSPB Reserve which is close downstream.¹

1.2 This riparian area is ecologically important and protected.²

1.3 No mitigation has been proposed for this protected environment.

1.4 The applicant does not have enough land to replace all the woodland scheduled for destruction.

1.5 The applicant certainly has no sites available to replace riparian woodland.

1.6 The River Hundred and its woodland have hardly been considered as receptors and will effectively be sacrificed as plans stand.

1.7 The Applicant states there is no alternative to this route. In that case, the project should not continue.

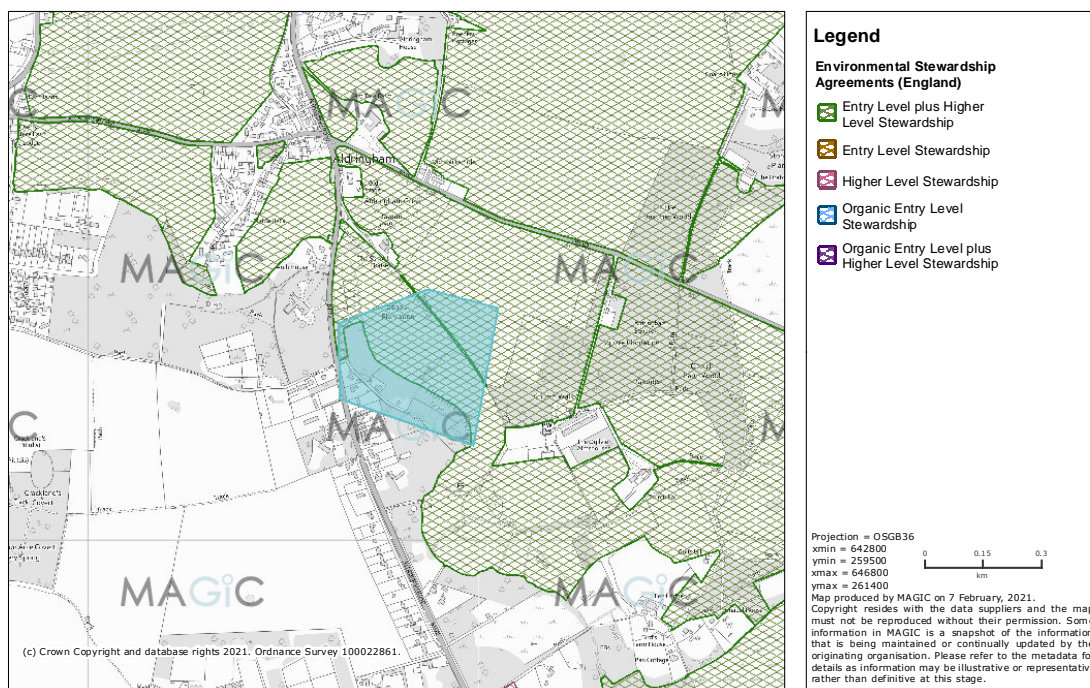
2 Adjacent meadow and Hairy Dragonfly

2.1 The meadow has been in Stewardship for some years.

2.2 This means that there are restrictions on grazing, treatment and spraying. These rules have

MAGiC

Aldringham (centred on IP16 4GL)



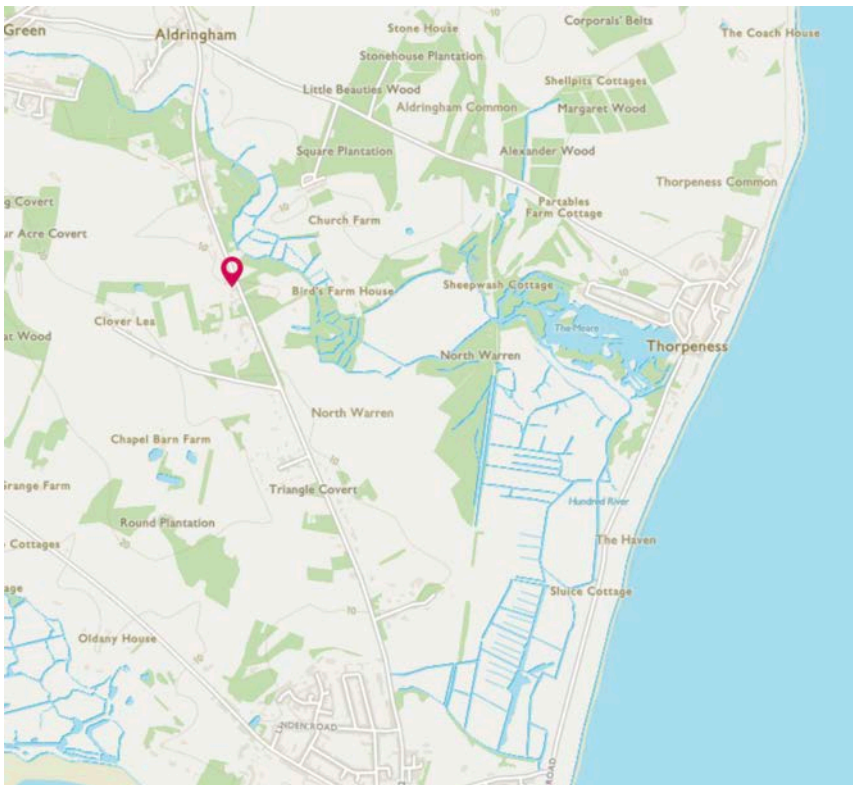
Stewardship of the riparian meadow

been observed for at least a decade. The present farmer keeps Red Poll Cattle on the meadow and manages their grazing by moving them up and down the valley.

¹ Quine et al (eds) 'Managing Woodlands and Their Mammals, Proceedings of a Symposium Organised Jointly by the Mammal Society and the Forestry Commission', Forestry Commission, 2004

² UK Biodiversity Action Plan; Priority Habitat Descriptions, BRIG (ed. Ant Maddock) 2008. (Updated 2011) (<https://data.jncc.gov.uk/data/2728792c-c8c6-4b8c-9ccd-a908cb0f1432/UKBAP-PriorityHabitatDescriptions-Rev-2011.pdf>)

2.3 The channels at 90 degrees to the river are historic irrigation catches for grazing meadows. These marked drains in the riparian meadow are well vegetated and suitable habitat for Hairy Dragonfly.



OS map of the valley to the sea, showing the irrigation channel construction

2.4 The riverside meadows are still locally prized for grazing as non-riparian grass cannot support large animals on these sandy soils in our dry summers.

2.5 Downstream, more constructed channels lead into what would have been managed reed beds for domestic use (such as, thatching, light, and beekeeping). These are now managed for the benefit of the RSPB reserve. Below is a widened channel leading to fen.





2.6 The Hundred River has a sluggish flow in summer and is a sympathetic environment to aquatic stages of invertebrates. These are food for fish, and the birds and mammals, like Otters, that feed on them. The winged stages support bats and birds, like Swifts and Swallows, that hunt above the surface of the water.



3 Riparian Meadow

3.1 The ditches in this meadow each support trees, bushes, bramble and other plants.

3.2 In brief summary, the sward is mixed grasses, with long grass retained in several areas. Heron, an indicator species, forages in the grass, in which are found Frogs and Toads.

3.3 These images, taken in summer, indicate the presence of Rumex. Rumex is used as food plants by the larvae of a number of Lepidoptera species.

3.4 Patches of long grass provide habitat and forage for a variety of animals including Voles which support another indicator species that nightly quarters the meadow: Barn Owl.



Archaeologically complex mound — with a notable, champion oak, absent from the applicant's surveys



Atop the ancient mound

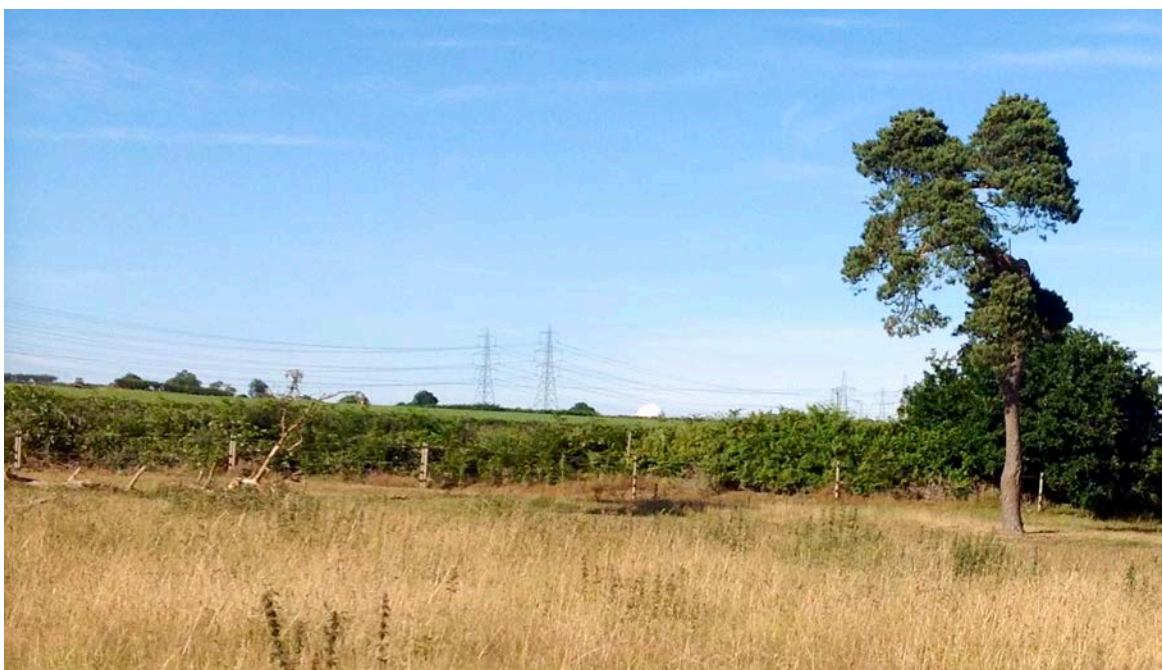
3.5 We can see that the long grass has been allowed to seed. The contrast between the irrigated area and the wet meadow is stark. Long grass, as well as bare, sandy areas make this area a good place for basking reptiles. Common Lizard, Grass Snake, Slow Worm and Adder are known all along the river and fen.

3.6 *Achillea Millefolium* (Yarrow), can be seen in this series of snaps, and Nettle, Dandelion, Clover, Thistle and Plantain. Yarrow is used by cavity-nesting birds, including the Common Starling, to line their nests. Numerous invertebrates feed exclusively on Yarrow. Leaf Miners, Case Bearers and Pugs also favour it. *Chrysanthia Viridissima* feed on it.

North-western aspect



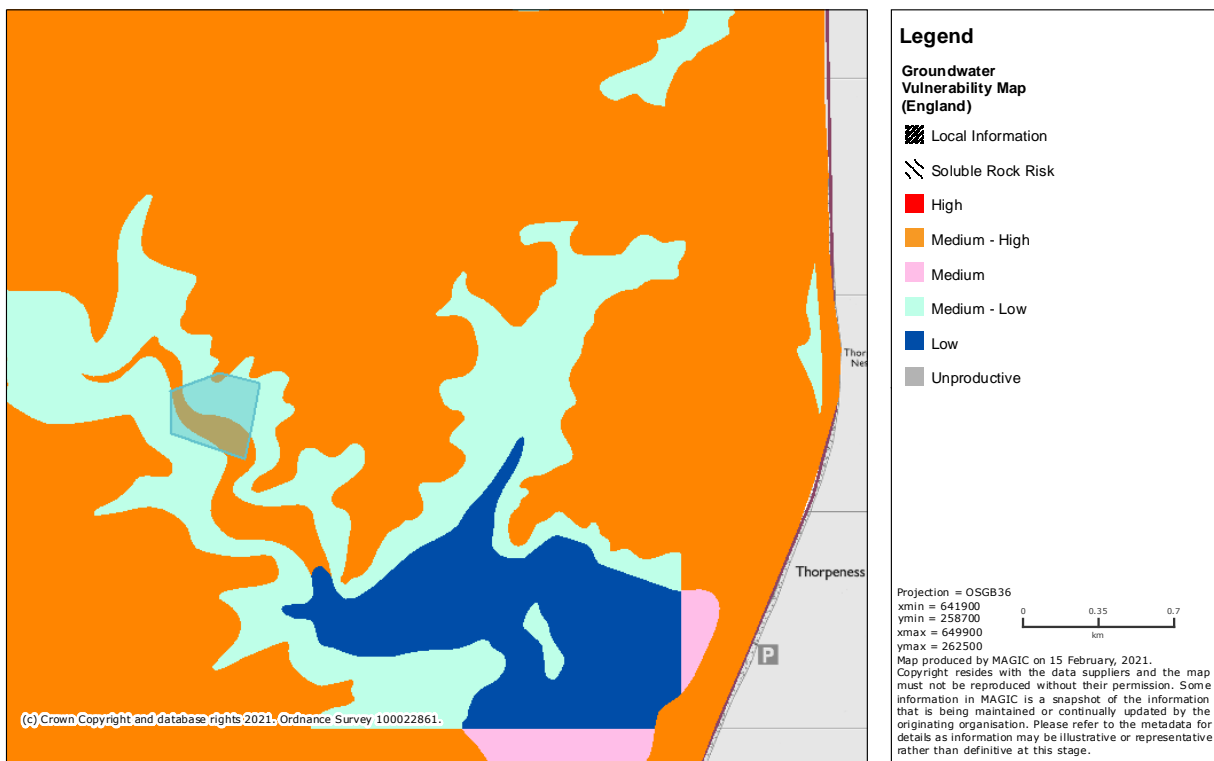
North-eastern aspect (Sizewell B nuclear power station marks the coast)



3.7 Pinus — seen as monolith and also living specimens in these images — produces forage for Lepidoptera, Panolis Flammea. Its seeds are eaten by Crossbill, Jay, Nuthatch, Siskin, and Woodpecker. Its pollen is thought to play a vital role in detrital food webs such as enabling fungi to decompose nutritionally lacking litter, and moving matter between terrestrial and aquatic food systems. (We demonstrated in our last submission that the woodland floor supports fungal networks also.)

4 Aquifer vulnerability

MAGiC Groundwater Vulnerability Maps: Aldringham



4.1 The area's aquifers have a typically moderate to low yield close to the surface and so the riparian meadow and woodland are considered of medium to high vulnerability (DEFRA).

4.2 We refer to the Applicant's own Archeological test trenches of 30 November 2019 which rapidly filled with groundwater.

4.3 The area is sandy so any contaminants from trenching will be quickly and widely spread through groundwater and are likely to also be readily dispersed by the irrigation channels and the main river flow.

4.4 The level of the distributed water is also critical downstream where loss of, or excess, water levels threaten the habitat of the Bittern (for instance) and the sensitive plants of the brackish water



meadows closer to the sea. A high degree of micromanagement and monitoring is required by the managers of the SSSI and Nature Reserve.³

4.5 The advice of the Irish Geological Survey in these circumstances is to find another site. (Geological Survey, Ireland, 'Assessing Groundwater vulnerability,' 2021)

5 The Riparian meadows of the River Hundred in Aldringham by Sarah Frances and Susie Curtis

We are locals that devote our time to the stewardship, by constant seasonal observation, of the area — which is rich, undisturbed, rural landscape, endowed with huge biodiversity of typically-found native flora and fauna — a rare, unspoilt piece of nature.

Sarah Frances, Dip.Herb. (RGE)
Susie Curtis, Dip.Herb. (RHS Hyde Hall)

Additional comments in Italics by Kinna Mosley.



Varied grass species



³ Rob Macklin, former warden of RSPB North Warren, and former RSPB Suffolk Area Manager, describes managing the sluice system in 'The country diary of a Suffolk Naturalist', Macklin, River Hundred, Aldringham, 2007, p.247



Mixed water meadow plants, exhibiting *Valeriana dioica* and *Dactylorhiza praetermissa*



Plantago major



Mixed native meadow grasses; as with most meadows, one of the main features is the sheer diversity of plants they contain, and on even rarer special occasions, a real prize and a treasure of a meadow is if they contain orchids, such as are present here in the following photographs.

Lychnis flos cuculi — ragged robin.
Now known to be in declining numbers.
Likes moist environments.



Yellow archangel (yellow dead nettle) —
Lemium galeobdolon



Plants found in meadow edges, hedge, trees, river, and water catches



Hedera Helix — forage for Bees and birds in winter



Rubus fruticosus



Iris pseudacorus



Papaver rhoeas



Digitalis purpurea



Arctium (Burdock)

All parts of the plant provide food for many Lepidoptera, and the flowers offer essential pollen and nectar for bees in late summer.



Potentilla reptans — creeping cinquefoil



Fomitopsis betulina



Lichen species — vital indicators of biodiversity and air purity



Bryonia alba — forage for *Lepidoptera*

Auricularia auricular-judae





Rosa canina



Silene latifolia Prior *S.alba*



Silene Vilgaris — bladder campion, is one of the food plants of the attractive red-and-black frog hopper.



Lonicera periclymenum — "Honeysuckle is hugely valuable to wildlife, supporting several species, many of which are rare ... Pollinating moths are attracted to the sweet scent of honeysuckle at night, when it is strongest; and birds, including thrushes, warblers and bullfinches, eat the berries when they ripen in late summer and autumn." Woodland Trust



Our precious pollinators love clover flowers (left), and caterpillars of many moth and butterfly species rely on the foliage of red clover as food source.



Lotus corniculatus (below left) — "Common bird's-foot-trefoil is an important foodplant for the caterpillars of the common blue, silver-studded blue and wood white butterflies. Its flowers are a good nectar source for bees.

These two species are both classified as Priority Species under the UK Biodiversity Framework 2011.



5.2 List of some plants commonly found here:

- Weld - *Isatis tinctoria*
- Weld - *Reseda luteola*
- Mullein - *Verbascum thapsus*
- Enchanter's nightshade - *Circaea lutetiana*
- Gorse - *Ulex europaeus*
- Ling Heather - *Calluna vulgaris*
- Bell Heather - *Erica cinerea*
- Larch - *Larix decidua*
- Silver Birch - *Betula pendula*
- English Oak - *Quercus robur*
- Hawthorn - *Crataegus monogyna*
- Blackthorn - *Prunus spinosa*
- Alder - *Alnus glutinosa*
- Wild plum - *Prunus domestica*
- Bullace - *Prunus insititia*
- Hazel - *Corylus avellana*
- Goat willow - *Salix caprea*
- Elder - *Sambucus nigra*
- Bramble - *Rubus fruticosus*
- Scots Pine - *Pinus sylvestris*
- Dog Rose - *Rosa canina*
- Common Thistle - *Cirsium vulgare*
- Knapweed - *Centaurea nigra*
- White deadnettle - *Lamium album*
- Red deadnettle - *Lamium purpureum*
- Chickweed - *Stellaria media*
- Cleavers - *Galium aparine*
- Sphagnum Moss - *Sphagnum sp.*
- Agrimony - *Agrimonia eupatoria*
- Vetch - *Vicia sativa*
- Foxglove - *Digitalis purpurea*
- Herb Robert - *Geranium robertianum*
- Dandelion - *Taraxacum officinale*
- Honeysuckle - *Lonicera periclymenum*
- Birch polypore - *Piptoporus betulinus*
- Jelly Ear Fungus - *Auricularia auricula-judae*
- Witches butter - *Exidia glandulosa*
- Yellow witches butter - *Tremella mesenterica*
- Fly Agaric - *Amanita muscaria*
- Lungwort lichen - *Lobaria pulmonaria*
- Beard lichen - *Usnea sp.*
- Meadowsweet - *Filipendula ulmaria*
- Yellow flag iris - *Iris pseudacorus*
- Broadleaf plantain - *Plantago major*
- Speedwells - *Veronica sp.*
- Miners lettuce - *Claytonia perfoliata*
- Bedstraw - *Galium verum*
- Marsh valerian - *Valerian dioica*
- Hops - *Humulus lupulus*
- Ragged robin - *Lychnis flos-cuculi*
- Yellow Rattle - *Rhinanthus minor*
- Ivy - *Hedera helix*
- Ground Ivy - *Glechoma hederacea*
- Mallow - *Malva sylvestris*
- Goatsbeard - *Aruncus dioicus*
- Greater stitchwort - *Stellaria holostea*
- Cranesbill - *Geranium pratense*
- Wild Crocus - *Crocus nudiflorus*
- Star of Bethlehem - *Ornithogalum umbellatum*
- Marsh Orchid - *Dactylorhiza praetermissa*
- Horehound - *Marrubium vulgare*
- Creeping cranesbill - *Geranium soboliferum*
- Bladder campion - *Silene vulgaris*
- Red Campion - *Silene dioica*
- White Campion - *Silene latifolia*
- Shrubby Cinquefoil - *Potentilla fruticosa*
- Wavy stemmed bittercress - *Cardamine flexuosa*
- Ribwort plantain - *Plantago lanceolata*
- Herb Bennet - *Geum urbanum*
- Marsh marigold - *Caltha palustris*

Sarah Frances, Dip.Herb. (RGE)
Susie Curtis, Dip.Herb. (RHS Hyde Hall)
Aldeburgh, February 15th 2021

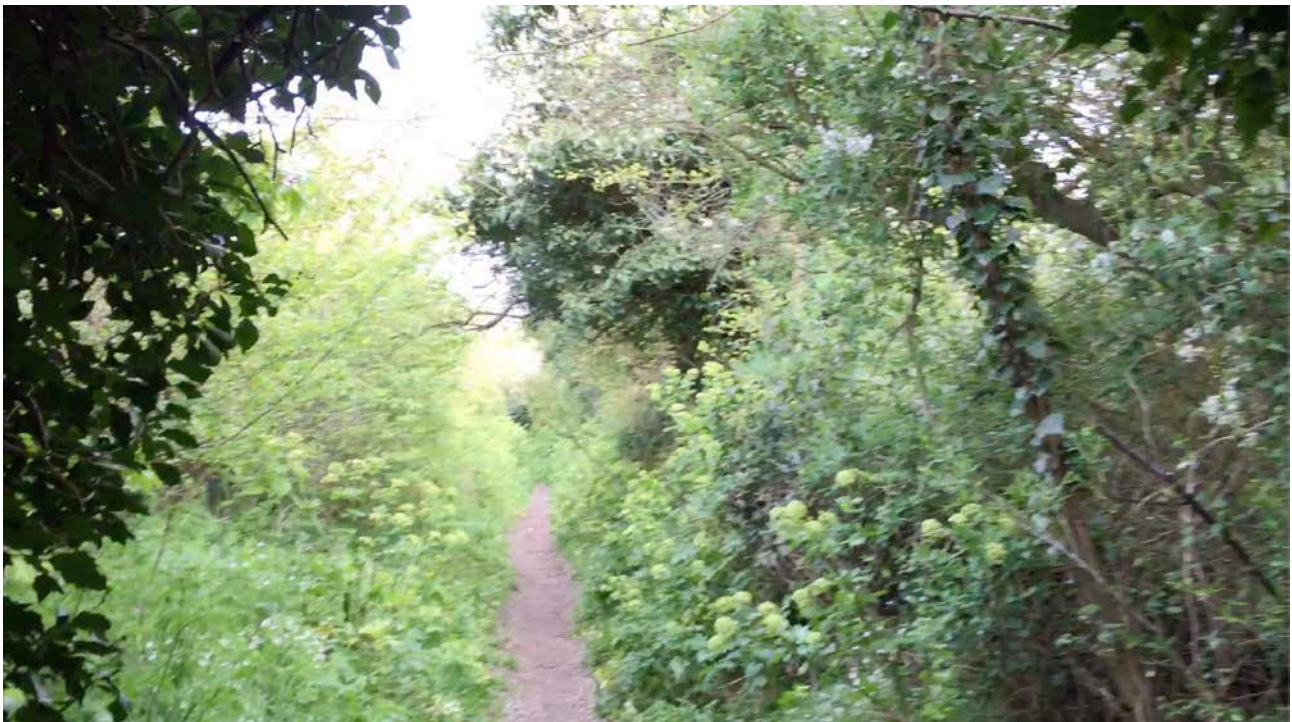
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6 Other terrestrial ecology

6.1 The Applicant's latest surveys examined some of Fitches Lane and the attached wood, but not the arable land adjacent, much of which is in, or eligible for, national stewardship schemes.

6.2 The hedgerows bounding both sides of Fitches Lane are treated as one rather than two in parallel. Both hedges will be removed. They are recorded as species poor by the Applicant. This is Fitches Lane — not species poor.

Fitches Lane in May



6.3 The Lane has been in existence for centuries. The Applicant's ecologist says they could not penetrate the areas of scrub.

6.4 The impenetrable scrub and bramble stands are excellent nesting areas for our breeding Nightingales.

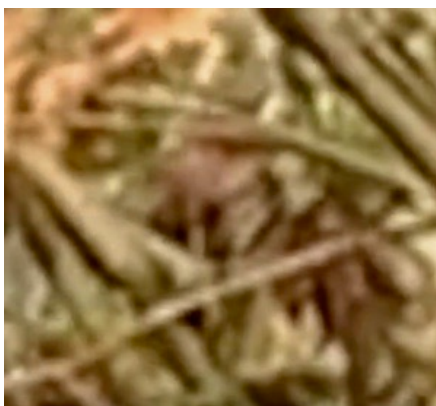
6.4 The wood offers cleared and canopied habitat favoured by Nightingale and Turtle Dove and the undisturbed biome of the Lane plus the 'impassable' areas offer invertebrate forage for many indicator species, like Bat, Nightingale, and larval forms of many other invertebrates, which also benefit from the proximity, on the northern edge of the wood, of the River Hundred. Adjacent to the south are arable fields. To the west is the village of Knodishall (Coldfair Green).



6.5 A buffer area for nesting birds of 5m is unlikely to be acceptable to any bird species more shy than a Robin.

6.6 Despite unfruitful surveys by the applicant, Nightingale and Turtle Dove, plus other migrating warblers, are known to breed annually here and have done so for all of living memory.

6.7 Equally, use of these woods by various bats is well-known. While the Applicant's equipment did not pick up the Brown Long-Eared Bat, Suffolk FWAG identified its presence in the area.



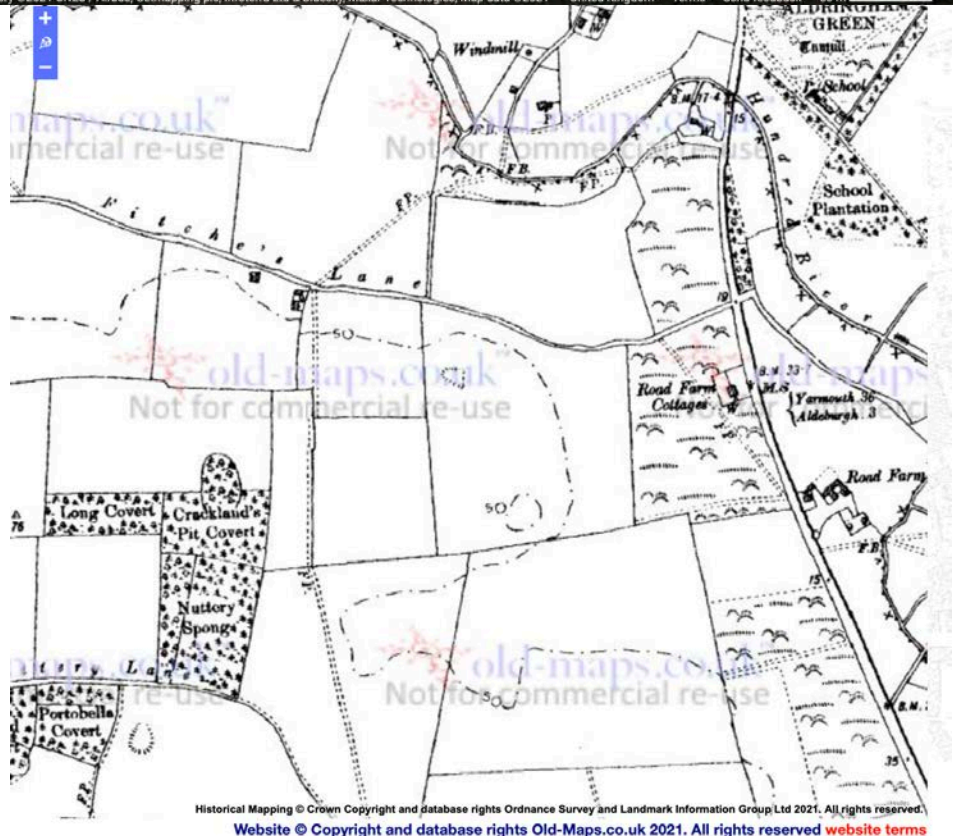
6.8 If surveys described by the Applicant as 'industry standard' are failing to give an accurate picture of local ecology, we suggest that the form of such surveys seems wanting. Appealing to knowledgeable locals — and there are many around — will give protected and endangered species a better chance of visibility, before it is too late and they are pushed into local extinction.

6.9 This screenshot is from a video of a Nightingale who was singing in the southern hedge of Fitches Lane, where it adjoins the hedge in the adjacent arable field. The song was captured on video and can be made available for the library.

6.10 Both hedges will have to be removed.



Map from 1910 showing Fitches Lane and footpath network which still exist





6.11 Fitches Lane and the paths through the wood are resources joining two villages, enabling children to walk to the Primary School, as well as offering places for children to play. Although there has been some development by the new owners in recent years (one owner's child has a bike track in an area of the wood), we still hear our migrant birds return each spring.

The construction will remove this resource and the Lane.

6.12 Images of the invertebrates in the area taken by the author.

Dung beetle



Glow Worm



**Tail of Stag-
Beetle larva**



Continues



7 Arable Fields adjoining Fitches Lane and reaching Snape Road (B1069)

7.1 Adjoining fields are partly industrially farmed, or eligible to join national Land Stewardship schemes (DEFRA).

7.2 There is a mosaic of ecologically rich areas between and bounding the arable fields, including long-established wooded areas, old hedgerows, and water bodies (including domestic ponds). This means there is high biodiversity here, connected by hedgerow. Many of these old hedgerows will be bisected by the Applicant and their long-established habitats and ecological connectivity destroyed, particularly in the earth.

7.3 National Biodiversity Database generates 5242 occurrence records within a 1km circle centred on Sloe Lane (which is close to the proposed compound in work area 24).

NBIOS

https://records.nbnatlas.org/occurrences/search?q=*&lat=52.1828958104083...

Advanced search

Occurrence records

. Quick search

Customise filters

5,242 results for [all records] - within 1 km of point(52.183, 1.565)
Some of the displayed records may not be available for commercial use. Please check the licence conditions and non-commercial use guidance [here](#)

Download

Selected filters: (Spatial validity: true AND -occurrence_status:absent) - within 1 km of point(52.183, 1.565) x

Spatial filter: CIRCLE x

Narrow your results

Selected filters

☒ (Spatial validity: true AND -occurrence_status:absent) - within 1 km of point(52.183, 1.565)

Taxon

Attribution

Identification

Occurrence

Record

Assertions

Records

Map

Charts

Record images

Alerts

page: 20 sort: Record date order: Descending

Species: *Lampyrus noctiluca* | Glow-worm Date: 2020-06-22 England OSGR: TM44715963
Data Resource: Soldier Beetles And Allies Recording Scheme - Data Verified Via IRecord Basis Of Record: Human Observation [View record](#)

Species: *Carduelis carduelis* | Goldfinch Date: 2019-12-31 England OSGR: TM4360
Data Resource: Birds (BTO+partners) 2016 - 2019 Basis Of Record: Human Observation [View record](#)

Species: *Fringilla coelebs* | Chaffinch Date: 2019-12-31 England OSGR: TM4360
Data Resource: Birds (BTO+partners) 2016 - 2019 Basis Of Record: Human Observation [View record](#)

Species: *Chroicocephalus ridibundus* | Black-headed Gull Date: 2019-12-31 England OSGR: TM4360
Data Resource: Birds (BTO+partners) 2016 - 2019 Basis Of Record: Human Observation [View record](#)

Species: *Cyanistes caeruleus* | Blue Tit Date: 2019-12-31 England OSGR: TM4360
Data Resource: Birds (BTO+partners) 2016 - 2019 Basis Of Record: Human Observation [View record](#)

Species: *Emberiza schoeniclus* | Reed Bunting Date: 2019-12-31 England OSGR: TM4360

Continues

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Arable field looking north towards Fitches Lane



7.4 These images were taken recently at the southern extremity of the arable sector adjoining Fitches Lane because the authors were snowed in. It serves to illustrate how some hedgerows have been restored and pollinator strips established, Creatures rely on the connectivity that these provide.



Hare prints in snow (boot size 24 cm) vs Rabbit prints in arable field

Hare makes for (new) hedge when Buzzard appears



7.5 The creatures seen in this area include Hare, Buzzard, Crow, Harrier, Jackdaw, Woodlark, Skylark, Fieldfare, Goldfinch, Swift, Swallow, Martin, Flycatcher, Pheasant, Wagtail, Owls (Tawny, Little and Barn), Kinglets, Hedgehog, Bat (Brown Long-Eared and Pipistrelle), Stoat, Fox, Vole, Mole, Rat, Mice, including the Yellow-Necked Mouse, and numerous invertebrates: Moths, Butterflies, Beetles, Worms and many Wasp species, Solitary Bees, and Bumble Bees in the banks of the old field boundaries. Amphibians (Newt, Toad and Frog) benefit from adjacent water bodies and garden ponds.

Fieldfares in apiary adjoining arable field 08-02-2021 (several dozen birds— a few are visible through the blizzard)



7.6 The Applicants have made little provision to protect these creatures, arguing that hedgerows will be replaced or filled in. Some of these hedgerows are very old with an ancient biome, and cannot easily or rapidly be replaced.

7.7 The Applicants do not acknowledge how long restoration of their habitat will take in this arid environment, nor have they made provision for prolonged and necessary support for replacement plants.

7.8 Their surveys have not returned robust data about the habitats of species likely to be impacted by the works.

7.9 Their conclusions that species are not there, despite the existence of their habitat, are therefore not safe.

7.10 Post consent is too late, and too precarious, for further surveys to be undertaken. It also fudges the cumulative effect of the destructive impact on protected and endangered species by only focussing on their existence in ready-mapped areas, until there are no obstacles to construction.

8 Badgers

8.1 SEAS requested information on the badger setts at the substation site. Redacted reports have made it difficult to ascertain if the Applicants were aware of setts or not.

8.2 The Applicant said there were none on the substation site. A photo of the existing sett on the site is shown below. In addition a newly located, large sett is also shown, with the photo taken shortly before 17th February.

8.3 The Applicant said that a licence would be sought from Natural England to destroy the setts.

The badger sett at the entrance to the substation site.



An entrance to a new badger sett on the substation site





Conclusions

In the same week as the complete publication of Professor Dasgupta's review of 'Economics and the Environment', witnessing the act of balancing this project's destruction of nature in pursuit of profit left a bad taste in the mouth.

The incomplete, cookie-cutter proposals to 'restore' the environment after construction, such as replacing a mature woodland with a strip of heath, or arguing that filling holes in a hedge is ecological enhancement, fall far short of the action needed to provide beneficial renewable energy.

In Dasgupta's model, the loss of natural capital is an example of how our institutions are unfit to manage these externalities, with Government paying people more to exploit nature than prioritise and protect it. Destruction of our local ecosystems means that we have not changed our conceptual framework adequately enough to invest in economic activities that enhance our stock of natural assets instead.

After all, the bottom line of this windfarm project is meant to generate profit for its shareholders, which is surely why so many energy firms, like BP, with its history as fossil fuel champion, are outbidding each other for tranches of the sea bed.⁴

Instead, we need to look at cumulative effects on this environment, which will be grave. After the damage done by these two projects there will be, we know, another six. The failure to consider alternative solutions was one of the key criticisms in the Judicial Review of the Norfolk Vanguard decision.⁵

"Protecting and enhancing nature needs more than good intentions — it requires concerted, coordinated action."⁶

⁴ "Queen's property chief delays sale of Scottish seabed windfarm plots: Auction paused after runaway bids for leases in England and Wales hand windfalls to Queen and Treasury", Jillian Ambrose, The Guardian, 12-2-2021

⁵ Judgment of the Hon Mr Justice Holgate, High Court of Justice, 18-02-2021

⁶ Prime Minister Boris Johnson, reported by Daisy Dunne, The Independent, 2-2-2021