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15th August 2024

Dear Sir/Madam

FUL/2024/0022 Development of approximately 6km of the Norwich Western Link Road connecting the A1067 (Fakenham Road) with the new A47 North Tuddenham to Easton scheme (being developed by National Highways) including the construction of a new roundabout junction with the A1067 Fakenham Road, improvements to the A1067 Fakenham Road and the roundabout junction with the A1270 Broadland Northway. Land between the A1270 Broadland Northway near Ringland and the A47 near Honningham.

Buglife- The Invertebrate Conservation Trust would like to make the following comments on the above application.

Buglife objects to these proposals for the following reasons.

River Wensum Special Area of Conservation and Special Site of Scientific Interest

The River Wensum Special Area of Conservation (SAC) and Special Site of Scientific Interest (SSSI) is a naturally enriched calcareous lowland river- a habitat for which the UK has an international responsibility, with 85% of the world's chalk streams found here[1]. The Globally Vulnerable Desmoulin's Whorl Snail (*Vertigo moulinsiana*) is a qualifying species for the SAC and the SSSI citation highlights the abundance and diverse invertebrate fauna including beetles and mayflies[2]. A 2022 Natural England report[3] states that "*Recent water quality measurements for the River Wensum within the SAC show phosphorus concentrations to be exceeding the targets for all unit where there is monitoring data*". These elevated nutrient levels change both plant and animal communities in the river, ultimately resulting in a loss of diversity. The river is also challenged by nitrate pollution, sediment run off and the presence of invasive species.[4]

The unfavourable condition of the River Wensum SAC and SSSI is reflected in the Aquatic Ecology Survey Report for the scheme (document reference 3.10.12), with the River Wensum sampling recording macroinvertebrate communities of low to moderation conservation value. However, regional notable species were recorded from samples in the River Wensum and other watercourses impacted by the

[1] https://deframedia.blog.gov.uk/2023/09/21/changes-announced-to-better-protect-englands-chalk-streams/
[2] SSSI detail (naturalengland.org.uk)
[3] River Wensum Special Area of Conservation - Evidence Pack - TIN201 (naturalengland.org.uk)
[4] Norfolk Rivers Trust | Wensum Water Quality: A Citizen Science Project

scheme, and aquatic macroinvertebrates are classed as an Important Ecological Feature (IEF) of County value.

Chalk streams such as the Wensum are very vulnerable to pollution and sediment inputs. Whilst the scheme aims to mitigate pollution during construction and operation phases, the construction of a viaduct over the river and floodplain will inevitably put further pressure on this sensitive habitat. The proposals completely rely on strict adherence to mitigation measures to prevent a further reduction in water quality in the River Wensum and associated watercourses. The Environmental Statement (ES) (document reference 3.10.00) states that no construction activities will take place within the SAC boundary, and a 3m exclusion zone will be in place. This narrow exclusion zone does not include the construction of a temporary bailey bridge that will be built across the River Wensum and it is unlikely to prevent all indirect impacts such as sediment run off and dust. Siltation and sedimentation from runoff of exposed soils during construction can clog gravels and extirpate invertebrates as well as impacting plant communities.

Buglife argues that no mitigation measures can fully negate the impacts of construction in such close proximity to an international designated site, with any pollution events having the potential to cause severe impacts to habitats and associated species. A detailed Construction and Environmental Management Plan (CEMP) has not been provided.

It is clear this important wildlife site should be a priority for restoration to return it to favourable condition. The location of a significant infrastructure project for several years within the floodplain, with permanent loss of floodplain habitat is likely to lead to further degradation of this important habitat and hinder future restoration efforts.

Desmoulin's Whorl Snail

The Globally Vulnerable[5] and GB Vulnerable[6] Desmoulin's Whorl Snail is a qualifying species for the River Wensum SAC. This species has undergone range contraction and population declines, with cumulative losses of sites making the remaining populations more vulnerable.

The snail was found within three floodplain ditches within the Field Survey Area for the scheme, including a ditch identified as WC1 that falls within the red line boundary, as detailed in the Desmoulin's Whorl Snail Report 2021 (document reference 3.10.14). The ES states "*A section of WC1 falls within the Site Boundary. Habitat within this section of WC1 became unsuitable for supporting Desmoulin's Whorl Snail in 2021 subsequent to sampling works, and so this species is no longer considered to be present in the Site Boundary for the purpose of this assessment".*

Buglife are concerned at the lack of information around this statement, with no clarification on the 'unsuitability' of the habitat in WC1 and no surveys to confirm absence. Studies have shown that individuals snails can persist in less than ideal conditions or in smaller areas of suitable habitat[7] . Buglife would argue that based on the survey data the assessment should include impacts to this species within the red line boundary and that the current assessment will have underestimated the severity of impacts. As detailed for the River Wensum SAC, this species is at risk directly from permanent direct loss of floodplain

[5] http://dx.doi.org/10.2305/IUCN.UK.2012-1.RLTS.T22939A128409258.en

[6] https://naturalresources.wales/media/678807/species-status-review-of-the-non-marine-mollusca-of-great-britain.pdf

[7] [redacted] EA (2003). Monitoring Desmoulin's Whorl Snail, *Vertigo moulinsiana*. Conserving Natura 2000 Rivers Monitoring Series No. 6, English Nature, Peterborough

habitat and from water quality changes and indirectly if plant communities alter due to shading or water quality impacts.

Detailed enhancement and habitat creation for this species will be set out in the Landscape and Ecological Management Plan (LEMP) that has not been provided for consideration at the application stage. Relying on mitigation measures to be completely effective to avoid water quality impacts and for habitat enhancement to compensation for loss and fragmentation of habitat is high risk for this species given the lack of certainty that they will have the desired outcomes.

Unacceptable loss of irreplaceable habitat and adverse impacts to associated invertebrate communities.

Direct loss of veteran trees

The scheme will result in the loss of seven ancient or veteran trees, with associated impacts of habitat loss for species of invertebrates, impacts that are not considered within the ES. Veteran trees are an irreplaceable habitat and a vital habitat for invertebrates, including many species of conservation concern. The trees provide a very wide range of 'microhabitats', largely absent in younger trees, and often provide essential habitats of standing and fallen dead wood for saproxylic species.

Some sampling to target the deadwood fauna of veteran trees was undertaken as part of the Terrestrial Invertebrate Survey (document reference 3.10.21), but it is unlikely that all the trees to be removed were surveyed. Several species of conservation concern recorded on the scheme, associated with dead wood habitats include Nationally Scarce species such as a Umbellifer Longhorn Beetle (*Phytoecia cylindrica*), the spider beetle *Dorcatoma flavicornis,* the darkling beetle *Pseudocistela ceramboides,* and the Cone-horn Cranefly (*Ctenophora pectinicornis*).

The National Planning Policy Framework (NPPF) Paragraph 186 c) states "*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*". The Arboricultural Impact Assessment (document reference 3.10.35) states "*The residual effect on ancient and veteran trees is a major adverse effect that remains significant following the implementation of compensation measures*". Compensation measures cannot mitigate for the loss of these trees. Buglife is concerned that the loss will impact the spatial and temporal continuity of veteran trees available to invertebrates, an impact that can affect the dispersal ability of associated specialist species. No assessment of the loss of these important habitat features for invertebrates has been made.

Whilst some compensations measures are outlined, a full compensation strategy for loss of irreplaceable habitat has not been submitted. Considering the requirement in the NPPF for a "*suitable compensation strategy"*, it is essential that a full strategy is submitted prior to a decision being made and that this strategy should include consideration for the loss of invertebrate habitat.[8]

Habitat degradation to veteran trees

Of further concern are habitat degradation impacts through reduction in air quality to a further 16 veteran trees, Primrose Grove Ancient Woodland and six County Wildlife Sites (CWS) as detailed in the Outline Air Quality Compensation Strategy (document 6.01.00) during the operation of the scheme. The impacts of increasing concentrations of ammonia and nitrogen deposition are one of the greatest threats to ancient

[8] HM-Wood-pasture-mosaic-proof-FINAL_1.pdf (buglife.org.uk)

woodland, including veteran trees[9]. Potential adverse impacts for invertebrates can result due to loss and changes to plant, lichen and fungi communities upon which different species depend.

Proposed compensation measures are being suggested without any consideration for impacts to invertebrates. For veteran trees, proposals such as buffering trees with vegetation to reduce pollution impacts and pruning could have negative impacts on invertebrate communities. For example, trees growing in more open situations support different saproxylic species to those in closed canopy woodland and close growing vegetation can shade out important lichen species or affect insects that require sunlit trunks[10]. Due to the extent of impacts from the scheme to irreplaceable habitats and to comply with the NPPF, a detailed compensation strategy must be submitted prior to a decision being made.

Inadequate assessment of impacts and mitigation for terrestrial invertebrates

Terrestrial invertebrates have been identified as an Important Ecological Feature (IEF) of County importance. The Terrestrial Invertebrate Survey Report 2021 (document reference 3.10.21) recorded 683 species, and summarises its findings as "*Overall, the Survey Area supports a diverse invertebrate fauna, which includes forty-three species currently regarded as Nationally Rare, Scarce, Data Deficient or Section 41 Species of Principal Importance*." 173 of the 683 species (25%) have a conservation status of local or higher, and the analysis submitted of the invertebrate assemblages using the Pantheon tool[11] suggest that those of rich flower resource, bark & sapwood decay, bare sand & chalk and scrub edge are all in favourable condition. Species of Principal Importance under Section 41 species of the Natural Environment and Rural Communities (NERC) Act 2006 and a material consideration in a planning application include the Five-banded Weevil-wasp (*Cerceris quinquefasciata*) and the Lunar Yellow Underwing Moth (*Noctua orbona*). Further species of conservation concern include the Nationally Rare Alfken's Mini-mining Bee (*Andrena alfkenella*) and the Nationally Rare Small False Click Beetle (*Aulonothroscus brevicollis*).

Key habitats for terrestrial invertebrates

From the invertebrate surveys, land areas identified as Parcels 1, 3, 7 and 9 were noted as being of particular importance for invertebrates supporting more diverse communities with a higher proportion of species of conservation concern than other habitats along the scheme. Many of these 'parcels' overlap with CWS including Rose Carr (part of Primrose Grove CWS), Broom and Spring Hills CWS and Fakenham Road Roadside Nature Reserve.

Despite information being available on the key habitats and features of the scheme to terrestrial invertebrates, the ES only provides a broad and general assessment of the impacts of the scheme, which include permanent habitat loss and habitat degradation, stating that habitat loss "*could affect the functionality of remaining areas of suitable habitat type to support this species and reduce the availability of suitable habitat within the local landscape. The habitats that would be removed are widely represented in the local landscape however.*" Buglife argues that this generalised assessment does not adequately address the impacts to the sites of key importance to invertebrates on the scheme or recognise the value to invertebrates of habitats and features that are not identified when viewing broad habitat types. For example, there may be other 'woodland habitat' present in the landscape, but this does not mean it will support the specific microhabitats or features to support rare species or diverse invertebrate communities.

[9] ammonia-impacts-on-ancient-woodland.pdf (woodlandtrust.org.uk)
[10] BFTB-Advice-Sheet-Managing-Dead-and-Decaying-Wood.FINAL .pdf (buglife.org.uk)
[11] https://pantheon.brc.ac.uk/home

Alongside the loss of seven veteran trees, the scheme will have wide impacts on woodland habitats with the removal of 25 high quality trees. In addition, the Arboricultural Impact Assessment states there will be "*the removal or part removal from six tree groups (including linear features). Additionally, two woodlands would be partly impacted, and two high quality hedgerows require removal*". Parcels 1, 3 and 9 identified as key invertebrate habitats on the scheme include woodland habitat and in the case of Parcel 9, over mature trees stated to be *"of significant intrinsic value to invertebrates".* From viewing the Arboricultural Survey Schedule (document reference 3.10.35a) for the area of 'Parcel 9' it appears there will be loss of Ash in this area and a pair of Notable mature Oak trees.

Buglife's concern to the non-specific assessment of impacts to invertebrates, also applies to mitigation proposals which outline general habitat creation, with no consideration for habitat features needed to retain invertebrate diversity or with regard to the species of conservation concern that will be impacted. The Ecological Mitigation Strategy (EMS) (document reference 3.10.32) suggests that the provision of log piles (for reptile mitigation) and bug hotels will provide mitigation for impacts. Though some brash and log piles can be beneficial to invertebrates, leaving fallen and standing deadwood in situ and in different circumstances, provides many more microhabitats for a range of species.

The EMS states that detailed habitat creation and management proposals will be provided in a LEMP. Considering the wide-ranging impacts of this scheme on sites and species, Buglife argues that a LEMP is required prior to any decision being made on this application to enable a proper assessment of the long-term impacts of the proposals. Currently there is insufficient information for an informed decision to be made.

Loss and impacts to County Wildlife Sites and Priority Habitats

Six CWS will be impacted by direct habitat loss through the scheme, which will include loss of Habitats of Principal Importance (HPI) under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Nine CWS within 50m of construction activities will be subject to habitat degradation through pollution and dust. As previously mentioned, six CWS will continue to experience habitat degradation through the scheme operation and a detailed compensation strategy for this impact has not been provided with the application. The outline strategy seeks to improve habitat conditions within the CWS through management and Buglife would re-iterate that broad-scale habitat aims can often overlook important features to invertebrates, even leading to the loss of species. Information from the invertebrate surveys should be used to ensure the retention and enhancement of key features for invertebrates.

CWS provide a vital network of habitats that support locally and nationally threatened species alongside enhancing the ecological coherence of the statutory protected site network and elevating their importance further as refuges for biodiversity. The damage from this scheme to CWS in contrary to Norfolk County Council's Environmental Policy[12] that aims to conserve and enhance natural beauty through "*Providing support for designated sites, including the Norfolk & Suffolk Broads, and the Norfolk Coast Area of Outstanding Natural Beauty, Natura 2000 sites and species, and County Wildlife Sites".* As important refuges for biodiversity, CWS are key in delivering nature recovery. In the context of a biodiversity crisis, developments that erode and degrade habitats should not be permitted.

[12] Environmental policy - Norfolk County Council

Impacts of Artificial Lighting at Night

Artificial Lighting at Night (ALAN) has numerous direct and indirect impacts on both terrestrial and aquatic invertebrates, including exhaustion, increased predation, and a disrupted ability to navigate. Evidence shows an increase in ALAN above 0.5 lux can impact the natural behaviour of living things. The situation is so serious that light pollution is reducing nocturnal pollinator visits to flowers by 62% in some areas[13]. Whilst it is welcomed that the scheme is to remain largely unlit during operation, it must be recognised that regardless of mitigation, there will be increased lighting impacts of areas that are currently free of significant light pollution, particularly during the construction and from vehicles during the operational phase of the road scheme.

The ES states that "*night works should be avoided where practicable to reduce the lighting of sensitive habitats and potential disturbance to species."* A Construction Lighting Management Plan will only be produced at the detailed design stage despite the adverse impacts ALAN will have on invertebrates and other wildlife. The scheme will take several years to build and due to the sensitivity of the sites and species present, this information should be available prior to a decision being made.

Summary

The ES states that "*The UK's flying insects have been reported to have declined by around 60% within the last 20 years (Ball, et al., 2021*)" and acknowledges that among the primary reasons for decline is "*habitat loss and fragmentation from urbanisation and land development".* Norfolk County Council's Environmental Policy also recognises "*that Norfolk is losing biodiversity, particularly insect populations*". The River Wensum has been widely identified as suffering from water quality issues that are affecting its important wildlife interest, including Wildfish describing the Wensum as "Consistently our worst performing river" [14]. Despite these concerns, there has been inadequate assessment on the impacts of this scheme on invertebrates, with insufficient consideration for areas and features of conservation significance.

Overall, the scheme has identified an astonishing 62 key Important Ecological Features which include internationally protected sites, globally vulnerable species and irreplaceable habitats. Buglife does not believe that the outline mitigation and compensation measures can fully address the potential adverse impacts on sensitive sites and species. With the scale of the ongoing biodiversity crisis, the loss of irreplaceable habitat for a road scheme sets a devastating precedent and does not reflect the shift in policy with government commitment to halting biodiversity loss by 2030[15].

The NPPF makes it clear that local authorities have a clear duty to protect and enhance biodiversity. Paragraph 185 states that plans should "*b) promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity."*

Buglife urges Norfolk County Council to refuse this application. There is insufficient information to determine impacts and assess the likely success of mitigation and compensation proposals or to ensure that the proposals will not have an overall detrimental impact on the biodiversity of the area.

Please do get in contact if you require any further information.

[13] Artificial light at night as a new threat to pollination | Nature
[14] https://wildfish.org/wp-content/uploads/2022/06/Wensum-Conclusions-Compressed.pdf
[15] Government sets out commitments to biodiversity and sustainability in G7 Nature Compact - GOV.UK (www.gov.uk)

Yours sincerely

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Saving Sites Officer