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Rynd Smith
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Temple Quay House
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12th July 2023

Dear Rynd Smith

RE: Lower Thames Crossing Nationally Significant Infrastructure Project (NSIP) application- Deadline 1 additional comments

Buglife would like to take the opportunity to reaffirm and expand on some of the comments in its Relevant Representations submission dated 24th February 2023¹.

Following a number of years of engagement with Highways England prior to the submission of the Lower Thames Crossing (LTC) examination, Buglife has sought to ensure that the proposed mitigation and compensation schemes are designed to minimise the impacts of the proposals on invertebrates and their habitats. Buglife's input has been particularly focused on the north side of the crossing and encouraging low nutrient, free draining, wildflower-rich habitats that utilise the significant material generated by the proposed project. This is to mimic the Thames Terrace Grasslands and Open Mosaic Habitat on Previously Developed Land (OMHPDL) that supports much of the nationally important invertebrate interest of South Essex. While Buglife notes that much of the advice given to Highways England has been absorbed into the proposals where possible, the direct loss of sites and the fragmentation of habitats in both Essex and Kent still represents a significant threat to biodiversity.

Impact on the Thames Estuary Important Invertebrate Area and its nationally important population of rare and scarce invertebrates

The proposed LTC covers a large extent of habitat mapped in the Thames Estuary Important Invertebrate Area (IIA) which spans both the Essex and Kent side of the Thames. The IIA was identified using the data from 85 national invertebrate recording schemes² and fine-scale mapped using additional data sourced

¹ <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/lower-thames-crossing/?ipcsection=relreps&relrep=51220>

² <https://www.buglife.org.uk/our-work/important-invertebrate-areas/important-invertebrate-areas-support/>

[Accessed 23rd Feb 2023]

from local experts, the Essex Field Club and Kent & Medway Biological Records Centre. IIAs are nationally or internationally significant places for the conservation of invertebrates and they support some of our most threatened species, vulnerable habitats and unique assemblages of invertebrates³.

The proposed LTC would lead to the loss and fragmentation of the valuable invertebrate habitats that support nationally important invertebrate populations. This includes the network of flower-rich, open habitats in South Essex supporting remnant Thames Terrace Grasslands invertebrate assemblages, ancient woodlands in Kent and invertebrates associated with freshwater habitat features in both Essex and Kent. This includes Habitats of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 and Species of Principal Importance including Hornet Robberfly (*Asilus crabroniformis*), Brown-banded Carder Bee (*Bombus humilis*), Red-shanked Carder Bee (*Bombus ruderarius*), Shrilk Carder Bee (*Bombus sylvarum*), Five-banded Weevil-wasp (*Cerceris quinquefasciata*), Small Heath (*Coenonympha pamphilus*), Sea Aster Mining Bee (*Colletes halophilus*), Phoenix Fly (*Dorycera graminum*) and White-letter Hairstreak (*Satyrrium w-album*).

The surveys submitted to the examination in '6.3 Environment Statement Appendix 8.3 – Terrestrial Invertebrates' recorded an impressive 1,075 species including 136 species of conservation concern (12.6%), with Vulnerable, Nationally Rare and Nationally Scarce species in addition to the Species of Principle Importance above⁴. This includes the ruby-tailed wasp *Hedychrum rutilans*, which had been considered extinct, having not been recorded in the UK since 1902. This also does not include the survey data from the Tilbury Lytag site recorded as part of the Tilbury 2 application that produced a species list of over 1,400 species alone and possible later survey data included as 'Annex D Terrestrial Invertebrate Survey Update'. It would be helpful for the applicant to draw together the combined invertebrate data for transparency and to allow an assessment of the overall invertebrate assemblage which would be affected by the LTC.

It should be noted that although invertebrate surveys were undertaken, the assessment is likely to have missed many species and subsequently undervalued the invertebrate assemblages supported due to the limited use of passive sampling techniques and trapping. This would lead to the under-representation of some species, notably moth species, which is concerning given the inclusion of ancient woodland habitats. There are also some clear omissions of sites, including the Blackshots Nature Area Local Wildlife Site (LoWS) which remains entirely unsurveyed due to lack of access. It is also notable that although 31 days of invertebrate survey were undertaken in 2018 and 2019, this was spread across 10 sites which included over 328ha, an average of 3.1 days per site with an average site size of 32.8ha. Natural England's 'Invertebrate Standard Advice for Essex' states that "*three – seven days of field work should be seen as a standard, for an "average" site of between 10 – 50ha*", however, this is the bare minimum per site and the surveys include sites of up to 100ha⁵. The surveys also missed the entire May and September periods which are highlighted in the Standard Advice as being important. The sub-optimal nature of the survey is acknowledged in the invertebrate survey report itself, which states, "*Owing to the late start of the 2018 survey, data was collected over two sampling events. The timings of these coincided with peak emergence times of OMH and grassland habitats and complied with the recommendations within the Essex Standard. However, under optimal conditions at least three survey visits are recommended, beginning earlier in the season.*" With reference to woodland habitats it also states that, "*The initial survey timing was sub-optimal to enable the sampling of key tree associated invertebrate species*".

³ <https://www.buglife.org.uk/our-work/important-invertebrate-areas/>

⁴ <https://infrastructure.planninginspectorate.gov.uk/wp-content/ipc/uploads/projects/TR010032/TR010032-001528-6.3%20Environmental%20Statement%20Appendix%208.3%20-%20Terrestrial%20Invertebrates.pdf>

⁵ <http://www.essexfieldclub.org.uk/resource/invertebrate-standard-advice-for-essex-oct-2014.pdf>

The impacts on ancient woodland invertebrates remains difficult to assess, as surveys were only undertaken on 27th June and 15th August 2018 in Survey Area 1 'Shorne Woods Country Wood, Ashenbank Woods and Brewers Wood', missing the crucial April-May period and lacking targeted survey for specialist deadwood species. This is acknowledged in the survey report which states, "*absence of sampling during the peak activity of arboreal and decaying wood assemblages in April/May, coupled with a lack of dedicated sampling of nightflying moths, which constitute a major component of the overall arboreal assemblage.*" This is despite it including the Site of Special Scientific Interest (SSSI) which should have prompted a greater degree of survey due to the recognised importance of the site.

Despite the limitations of survey, the invertebrate report uses the data from this survey, historic data and site assessments to conclude that of the areas assessed, eight were nationally important, three of regional importance and three of county importance for invertebrates. The survey reports used the Pantheon tool to assess invertebrate assemblages in each survey area, and identified a range of Specific Assemblage Types (SAT) in favourable condition, including rich flower resource, scrub edge, open short sward, bare sand and chalk, scrub-heath and moorland, tall sward and scrub, and arboreal habitats⁶. This demonstrates the extent and variety of habitats throughout the LTC project area. Direct habitat losses, impacts and fragmentation of such an extensive resource of habitat for invertebrates could have an irreversible impact on the nationally important invertebrate assemblages of the Thames Estuary IIA.

Loss or impacts on Local Wildlife Sites including Low Street Pit, Blackshots Nature Area, Mucking Heath, Rainbow Shaw and Canal and Grazing Marsh Higham

The proposed LTC would lead to the complete or partial loss of a number of LoWS in Essex, that support Thurrock's rare and scarce invertebrates, including Low Street Pit, Blackshots Nature Area, Mucking Heath and Rainbow Shaw. The proposals also include a temporary land take and alteration of hydrology at the Canal and Grazing Marsh Higham Local Wildlife Site (LWS) which could severely impact the site's habitats and invertebrate interest. Several other LoWS/LWS with important invertebrate populations are within the order limits and may be negatively affected by the development proposals. LoWS/LWS make a valuable contribution to supporting biodiversity in the Thames Estuary and are an essential part of the ecological networks required to meet the Government's legally binding commitments to end nature declines⁷. Many of these sites are likely to be highlighted in the forthcoming Local Nature Recovery Strategy (LNRS) mapping for Essex, leaving the possibility that the core of Thurrock's habitats and priority areas in the LNRS may be entirely lost and its ambition undeliverable⁸. Buglife would like to support the strong habitat connectivity concerns raised in Essex Wildlife Trust's Relevant Representations of 10th January 2023⁹.

Impacts on the Shorne and Ashenbank Woods Site of Special Scientific Interest and loss of ancient woodland, veteran trees and woodland habitats

The proposals would lead to unacceptable impacts on the Shorne and Ashenbank Woods SSSI and the loss of irreplaceable ancient woodland and veteran tree habitats in Kent. SSSIs are the backbone of the UK's protected sites network, including our best habitats and are essential to protecting wildlife and supporting healthy ecosystems. The habitats affected support important populations of nationally rare and scarce

⁶ <https://pantheon.brc.ac.uk/>

⁷ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/693158/25-year-environment-plan.pdf

⁸ <https://www.gov.uk/government/publications/local-nature-recovery-strategies/local-nature-recovery-strategies>

⁹ <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/lower-thames-crossing/?ipcsection=relreps&relrep=50385>

invertebrates. This was confirmed by the invertebrate survey and assessments submitted with the application, however, the lack of sufficient survey prevents a meaningful assessment of the impacts of the work from being assessed.

Buglife supports the position outlined in the Woodland Trust's Relevant Representations dated 24th February 2023 regarding the extent of impacts on irreplaceable ancient woodland and veteran trees¹⁰. These complex habitats support some of the UK's most threatened invertebrates and the loss of habitat can lead to an irreversible loss of habitat continuity for vulnerable species¹¹. Many of these species are associated with very specific habitat niches that have now been lost across much of the landscape and can take many decades to develop.

Cumulative impact of developments in Thames Estuary and fragmentation of habitats in Essex

The Thames Estuary has suffered from a series of large-scale developments in recent decades, with numerous extensive and important wildlife sites lost to development¹². This includes the brownfields and OMHPDL that support much of the nationally important invertebrate interest in the Thames Estuary¹³. Buglife has previously highlighted the extent of losses of these habitats in its 'State of Brownfields in the Thames Gateway' report in 2013¹⁴. The report revealed that over half of the wildlife-rich brownfield sites in the Thames Gateway that had been identified by Buglife between 2005 and 2008 had been either destroyed or had an outstanding planning permission in this short period of time. Since this time, development has continued at pace.

In recent years the Tilbury 2 NSIP application has been granted permission and the London Resort NSIP affecting the Swanscombe Peninsula SSSI is expected to be re-submitted in 2023 following a withdrawal of the previous application in 2022. This is in addition to the many locally determined planning applications that have seen the progress loss of sites that support regionally and nationally important invertebrate populations. The continued loss of wildlife-rich sites in the Thames Estuary threatens the long-term future of the estuary's nationally important invertebrate populations. It is essential that the impacts of the LTC are considered cumulatively alongside other ongoing developments and pipeline proposals to properly understand the potential impacts on invertebrate populations. This should involve following clear advice from Natural England, who have been undertaking an assessment of potential SSSIs in the Thames Estuary for invertebrates as part of their designations programme, listed as 'Thames Estuary Invertebrates, Essex and Kent'¹⁵.

Buglife supports the habitat assessment and Biodiversity Net Gain (BNG) scrutiny outlined in the Relevant Representations by Essex Wildlife Trust and Kent Wildlife Trust¹⁶¹⁷. There remains difficulty in assessing the true impacts of the application due to missing information and it fails to meet key minimum targets. In

¹⁰ <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/lower-thames-crossing/?ipcsection=relreps&relrep=51210>

¹¹ https://cdn.buglife.org.uk/2023/04/AOTF_FINAL_LOWRES_cmyk.pdf

¹² <https://www.buglife.org.uk/resources/habitat-hub/brownfield-hub/brownfields-sites-under-threat/>

¹³ <https://cdn.buglife.org.uk/2020/01/Introduction-to-brownfields.pdf>

¹⁴ https://cdn.buglife.org.uk/2019/08/The-State-of-Brownfields-in-the-Thames-Gateway_0_0.pdf

¹⁵ <https://www.gov.uk/government/publications/natural-england-designations-programme-for-areas-sites-and-trails/natural-englands-designations-programme>

¹⁶ <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/lower-thames-crossing/?ipcsection=relreps&relrep=51121>

¹⁷ <https://infrastructure.planninginspectorate.gov.uk/projects/south-east/lower-thames-crossing/?ipcsection=relreps&relrep=50385>

addition, it should also forfeit any claims of BNG due to the loss of irreplaceable and SSSI habitats- the Chartered Institute of Ecology and Environmental Management (CIEEM)'s 'Biodiversity Net Gain: Good practice principles for development' document clearly states throughout, including in the Executive Summary, that "*BNG does not apply to statutory designated sites or irreplaceable habitats. This guide advises that impacts on statutory designated sites or irreplaceable habitats are avoided where possible*"¹⁸. The use of any BNG to support claims that biodiversity will not be impacted or will benefit a result of the proposals should clearly not be acceptable to the examiners.

Indirect impacts of increased nitrogen deposition on low nutrient habitats

There also remain significant concerns about how the increase in road use in the area could affect wildlife through increased nitrogen deposition. This could lead to vegetational changes on vulnerable low nutrient habitats as a result of soil enrichment and lead to loss of early successional features, reduce floral diversity and impact on bare ground habitats upon which many rare and scarce invertebrates^{19,20}. Nitrogen deposition could also reduce the long-term predicted biodiversity opportunities provided by the low nutrient substrate habitats detailed in the project's mitigation and compensation schemes, further exacerbating the biodiversity losses of the LTC proposals.

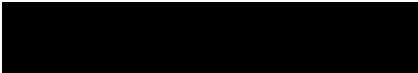
Summary

The proposals threaten sites supporting nationally important invertebrate populations in the Thames Estuary IIA and the long-term viability of populations in the region through further habitat loss and fragmentation. The proposals undermine the Government's commitment to protect 30% of the UK's land for nature by 30% and its commitment to Nature Recovery Networks and the 25 Year Environment Plan's commitment to "*effectively linking existing protected sites and landscapes*". The SSSI network and protection of habitats of principle importance including Local Wildlife Sites must underpin the government's approach to halting biodiversity declines.

Buglife reserves the right to add to/amend its position should new information be made available by the applicant or other Interested Parties.

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

Yours sincerely


Jamie Robins
Programmes Manager

¹⁸ <https://cieem.net/wp-content/uploads/2019/02/C776a-Biodiversity-net-gain.-Good-practice-principles-for-development.-A-practical-guide-web.pdf>

¹⁹ <https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-2435.13063>

²⁰ <https://www.ceh.ac.uk/news-and-media/blogs/we-need-to-talk-about-nitrogen>