

Our ref: Q210843
Your ref: 23/02098/OUT
Email: gregory.blaxland@quod.com
Date: 25 June 2024



Cherwell District Council Planning Services
Bodicote House
Bodicote
Banbury
Oxfordshire
OX15 4AA

For the attention of Andrew Thompson

Dear Andrew

Applicant response to Natural England objection dated 08 March 2024

I write regarding the outline planning application ('OPA') (ref: 23/02098/OUT) submitted on behalf of Oxford University Development ('OUD') for the proposed residential-led mixed use development scheme known as the Begbroke Innovation District ('Proposed Development') on the land known as Begbroke Science Park, Begbroke Hill, Begbroke, OX5 1PF ('the Site').

Specifically, I write in response to the objection made by Natural England ('NE') against the OPA, dated 08 March 2024 and further to OUD's letter to NE dated 11 April 2023. The NE objection concerns the possibility of adverse effects to the integrity of the Oxford Meadows Special Area of Conservation ('SAC') arising from the Proposed Development either alone or in combination with other relevant plans and projects.

This letter provides background to the NE objection and considers the relevant legislative and policy framework that it relates to, that being primarily The Conservation of Habitats and Species Regulations 2017 ('the Habitats Regulations'). Further information is also provided in this letter in addition to what has already been provided to Cherwell District Council ('CDC'), as well as relevant considerations that the Council can, at its own discretion, take into account when carrying out, as competent authority, its appropriate assessment of the implications of the Proposed Development for the SAC (alone and in combination with other relevant plans and projects) pursuant to regulation 63 of the Habitats Regulations .

1 Background

1.1 Regulation 63(1) of the Habitats Regulations requires that a competent authority must make an appropriate assessment of any project or plan that is likely to have significant effects on a European site before giving consent to any such project or plan. The appropriate assessment – commonly referred to as a Habitats Regulations Assessment or 'HRA' - must consider the effects of the project or plan both alone or in combination with other plans or projects. CDC is the competent authority under the Habitats Regulations for the purposes of carrying out the HRA.



- 1.2 Regulation 63(2) of the Habitats Regulations requires the person applying for any such consent (i.e., OUD in the present case) to provide such information as the competent authority may reasonably require to enable it to determine whether an appropriate assessment is required. On 17 January 2024, OUD provided a report entitled “Information to Inform a Habitats Regulations Assessment” (‘IHRA’). This includes information that CDC would need in determining whether an appropriate assessment is required, plus further considerations that CDC could take into account when carrying out their HRA.
- 1.3 After the IHRA was provided, NE lodged their objection on 08 March 2024. OUD provided a written response to that objection on 11th April 2024. Since then, OUD has proactively engaged with NE to seek to resolve the issues raised, which has included two meetings held on 25th April and 6th June 2024 at which you were present plus written correspondence between the parties. At the latter meeting, it was agreed that to address NE’s objection, OUD would provide the following further information:
- How the effects may relate to the SAC achieving its ‘restore’ objective;
 - spatial modelling of air quality effects;
 - the qualifying features that could be affected;
 - whether the ‘restore’ objective can be achieved within the plan period;¹ and
 - how this project level HRA for the Proposed Development relates to previous HRAs carried out by CDC and also by Oxford City Council at the plan level.
- 1.4 The contents of this letter and its associated appendices provide the above further information as well as highlighting additional advice and relevant legal cases that CDC could take into consideration when carrying out its HRA .

2 Temporal effect of the Proposed Development

- 2.1 The IHRA sets out the summary data for NO_x, Ammonia (NH₃), Nitrogen (‘N’) deposition and acidification both for the “Proposed Development Alone” and the “Proposed Development in Combination” scenarios.
- 2.2 This data has been used to calculate whether the Proposed Development would materially affect the ‘restore’ objective for the Oxford Meadows SAC. The results are provided in Tables 1 - 3 below. Ammonia is not presented as the critical thresholds are not exceeded.
- 2.3 The calculation considers the year-on-year average change for the various pollutants. Where the change caused by the Proposed Development equates to less than a year average change,

¹ The restore objective for the Oxford Meadows SAC is: ‘*Maintaining the concentrations and deposition of air pollutants to at or below the site relevant critical thresholds (asper APIS database)*’ (Natural England, 2019).



Natural England advised in the meeting held on 11th June that this can be considered not adverse. The green figures indicate where the change equates to less than 1 year of the average change. PD = Proposed Development and PD IC = Proposed Development in combination with other plans and projects.

Table 1 - NOx

Transect	2019 baseline	2033 baseline	Avg annual change	2033 + PD	Increase above 2033 baseline	2033 + PD IC	Increase above 2033 baseline
A34-1	49.7	29.4	-1.5	29.7	0.28	29.7	0.35
A34-2	56.1	31.2	-1.8	31.5	0.35	31.6	0.43
A34-3	52.8	30.2	-1.6	30.5	0.31	30.6	0.39
A34-4	97.1	43.0	-3.9	43.8	0.79	44.0	0.99
A34-5	141.8	57.0	-6.1	58.1	1.09	58.2	1.26
A34-6	71.5	35.7	-2.6	36.2	0.51	36.3	0.64
A34-7	87.3	40.5	-3.3	41.1	0.61	41.2	0.72
A34-8	93.6	42.4	-3.7	43.1	0.67	43.2	0.79
A34-9	48.4	29.0	-1.4	29.3	0.27	29.4	0.34
A40-10	21.9	16.8	-0.4	16.8	0.07	17.0	0.21
A40-11	35.5	25.8	-0.7	26.0	0.13	26.2	0.38
A40-12	31.4	21.2	-0.7	21.3	0.13	21.6	0.43
A40-13	35.4	25.7	-0.7	25.8	0.13	26.1	0.40

Table 2 - NH3

Transect	2019 baseline	2033 baseline	Avg annual change	2033 + PD	Increase above 2033 baseline	2033 + PD IC	Increase above 2033 baseline
A34-1	2.9	3.1	+0.2	3.1	0.03	3.1	0.03
A34-2	3.1	3.3	+0.2	3.3	0.03	3.3	0.04
A34-3	3.0	3.2	+0.2	3.2	0.03	3.2	0.04
A34-4	4.2	4.6	+0.3	4.6	0.08	4.7	0.10
A34-5	5.4	6.1	+0.4	6.3	0.11	6.3	0.12
A34-6	3.5	3.8	+0.3	3.8	0.05	3.8	0.06
A34-7	4.0	4.3	+0.3	4.4	0.06	4.4	0.07
A34-8	4.1	4.5	+0.3	4.6	0.07	4.6	0.08
A34-9	2.9	3.0	+0.2	3.0	0.03	3.1	0.03
A40-10	2.4	2.5	+0.2	2.5	0.01	2.5	0.02
A40-11	2.6	2.7	+0.2	2.7	0.01	2.8	0.04
A40-12	2.7	2.8	+0.2	2.8	0.01	2.8	0.05
A40-13	2.6	2.7	+0.2	2.8	0.01	2.8	0.04



Table 3 - Nitrogen deposition

Transect	2019 baseline	2033 baseline	Avg annual change	2033 + PD	Increase above 2033 baseline	2033 + PD IC	Increase above 2033 baseline
A34-1	21.0	18.8	-0.2	19.0	0.2	19.0	0.2
A34-2	22.3	19.9	-0.2	20.2	0.2	20.2	0.2
A34-3	21.7	19.3	-0.2	19.5	0.2	19.6	0.2
A34-4	30.5	27.6	-0.2	28.0	0.5	28.1	0.6
A34-5	39.1	36.7	-0.2	37.3	0.6	37.4	0.7
A34-6	25.4	22.9	-0.2	23.2	0.3	23.2	0.4
A34-7	28.6	26.0	-0.2	26.4	0.4	26.4	0.4
A34-8	29.8	27.3	-0.2	27.7	0.4	27.7	0.4
A34-9	20.8	18.5	-0.2	18.7	0.2	18.7	0.2
A40-10	15.8	14.6	-0.1	14.7	0.0	14.8	0.1
A40-11	18.4	16.7	-0.1	16.8	0.1	17.0	0.2
A40-12	17.9	16.6	-0.1	16.7	0.1	16.9	0.3
A40-13	18.5	16.8	-0.1	16.9	0.1	17.1	0.3

2.4 CDC are reminded that the above figures presented in the IHRA are the worst case figures. That is, they represent the values at their highest along each transect, which is closest to the road. It will be seen from the above figures that as a point of fact, the levels of N deposition modelled in 2033 are significantly below the levels that have been modelled by CDC in its own HRA carried out in August 2023. Further background on the spatial modelling is provided in Section 4.

3 Qualifying features

3.1 The qualifying features of the Oxford Meadows SAC are set out in paragraphs 3.9-3.11 of the IHRA. In summary, there are two qualifying features: 1) lowland hay meadows; and 2) creeping marshwort. Creeping marshwort is only found in the Port Meadows component of the SAC. The closest point of Port Meadows is significantly more than 200m from a road affected by the Proposed Development and is therefore screened out of further consideration.²

3.2 The Lowland hay meadow critical threshold for N deposition is based on Bobbink et al (2022), which states the following:

Previously, the CLempN (i.e. critical load for nitrogen) for low and medium altitude hay meadows was set at 20-30 kg N ha⁻¹ yr⁻¹ based on expert judgement. Although new findings from a field

² 200m is the standard distance criteria that is used when considering the effects of road traffic emissions, as per NE's Guidance NEA0001: Advising Cas on Road Traffic Emissions and HRAs, V1.4 Final – June 2018. Paragraph 4.10.



experiment and gradient studies have been published since the last review, the data basis is still uncertain. Therefore, the CLempN range for low and medium altitude hay meadows is as expert judgement specified as 10-20 kg N ha⁻¹ yr⁻¹. There is, however, still a need for field addition studies in different countries, especially in regions with low atmospheric deposition.

- 3.3 However, floodplain meadows, such as found at Oxford Meadows, form a subset of Lowland hay meadows which are subject to regular flooding and associated nutrient inputs from silt deposition and they are known to have higher soil nutrient levels than other types of hay meadow. The Floodplain Meadows Handbook (Rothero et al. 2016) notes states that '*Floodplain meadows require soils that have moderate levels of soil nutrients, particularly phosphorous*'.
- 3.4 Therefore, applying the nitrogen critical threshold for lowland hay meadows generally (which are considered to be precautionary (Natural England 2018) is likely to be highly precautionary when it comes to floodplain hay meadows of the type present at Oxford Meadows SAC.

4 Spatial modelling of the air quality effects

- 4.1 Natural England have advised that providing spatial mapping of the data will be of assistance to CDC in carrying out its HRA for the proposed development.
- 4.2 Spatial mapping data has been provided as part of the OPA that was submitted in July 2023, specifically at Appendix 11.11 of the Environmental Statement, Volume 3. These figures have been extracted and adapted to reflect the minimum critical threshold levels that Natural England require to be used.
- 4.3 The figures are reproduced at Appendix 1.
- 4.4 In this regard, CDC are referred to government guidance on the consideration of impacts to the integrity of European sites, which is defined as: "*the coherence of its ecological structure and function, across its whole area, that enables it to sustain the habitat, complex of habitats and/or the levels of populations of the species for which it was designated.*"³
- 4.5 Further examination of the location of the lowland hay meadows qualifying feature within the SAC has been carried out. This allowed the closest points of the SAC feature to the road to be measured and revised, more accurate maximum pollutant values to be determined for each transect. Results for the proposed development in combination with other plans and projects are as set out in Table 4.

³ HM Government. Guidance: Appropriate Assessment. Paragraph: 003 Reference ID: 65-003-20190722. Revision date 22/07/2019.



Table 4 - Spatial assessment pollution levels

Transect	Closest transect point to SAC feature (m from road)	Habitat between SAC and Lowland hay meadows	Max NOx within SAC and % of CT (CT=30)	Max NH3 within SAC and % of CT (CT=3)	Max N dep within SAC (and % of CT (CT=10))
A34-1	51	Woodland to 54m.	25.6 (0.6%)	2.6 (0.6%)	16.3 (1.0%)
A34-2	17	Scrub and road verge to 17m.	31.6 (1.2%)	3.3 (1.4%)	20.2 (2.5%)
A34-3	21	Woodland and scrub to 22m.	30.6 (1.0%)	3.2 (1.3%)	19.6 (2.3%)
A34-4	15	Hardstanding access track to 16m.	34.90(1.8%)	3.6 (1.7%)	21.7 (3.1%)
A34-5	13	Hardstanding access track to 16m.	41.3 (2.4%)	4.4 (2.3%)	26.5 (4.1%)
A34-6	N/A	Transect not in SAC.	N/A	N/A	N/A
A34-7	34	Trees / rough grassland to 35m.	32.4 (1.4%)	3.4 (1.3%)	20.7 (2.4%)
A34-8	12	Rough grassland verge to 12m.	23.8 (0.3%)	2.4 (0.3%)	27.7 (4.5%)
A34-9	71	River and woodland to 77m	25.5 (0.6)	2.6 (0.6%)	16.2 (1.0%)
A40-10	53	Woodland to 55m.	16.2 (0.5%)	2.4 (0.5%)	14.2 (0.9%)
A40-11	23	Woodland to 23m.	24.8 (0.9%)	2.6 (0.9%)	15.9 (1.7%)
A40-12	43	Hedge/trees approx. parallel to transect. Trees to 50m.	18.8 (0.6%)	2.4 (0.6%)	14.6 (1.1%)
A40-13	13	Hedgerow to 13m	26.1 (1.3%)	2.8 (1.5%)	17.1 (2.6%)

4.6 The results table in the IHRA have not been changed as these provide a worst case study of pollution levels. For ease of comparison though, where the results in Table 4 are lower than the corresponding values shown in Tables 5, 7 and 9 of the IHRA, these are highlighted in **bold**. Where they are lower such that they are now at or below the 1% of CT, these are highlighted in **bold green**.

5 Whether the 'restore' objective can be achieved in the plan period

5.1 The IHRA has considered a future baseline of 2033, this being the assessed year of completion of development for the purposes of the Environmental Statement. The emerging Cherwell Local Plan 2040 has been supported by a plan level HRA that was carried out by CDC in August 2023 and which models a future baseline up to 2040.⁴

⁴ Cherwell Local Plan 2040 Habitats Regulations Assessment, August 2023.



- 5.2 The evidence presented in that plan level HRA suggests that critical threshold levels will continue to be exceeded at certain transects even in the 2040 ‘Do Something’ scenario, both alone and in combination with other plans and projects.
- 5.3 The conclusion reached in that strategic plan-level HRA is that “*The Cherwell Local Plan Review will not have an adverse effect on the integrity of any Habitats Sites either alone or in combination with other plans and projects.*”⁵ This conclusion was reached when considering pollution levels that have been modelled as being consistently higher than has been calculated in OUD’s own project level IHRA. Some differences between the HRAs are not necessarily surprising – given that the methodologies for a plan-level and project-level HRA will differ slightly. The important point is that CDC, acting as the competent authority have assessed those higher levels in the plan level HRA and found that they do not equate to an adverse effect on the integrity of the SAC.
- 5.4 This conclusion is the same that has been reached by Oxford City Council, who have also carried out a plan level HRA in support of their draft Local Plan 2040, which is currently undergoing examination.

6 Other considerations

- 6.1 OUD have set out below the following matters that it considers are relevant considerations for CDC when carrying out its HRA under the Habitats Regulations.

Current condition of the Oxford Meadows SAC

- 6.2 The current condition of the component features and management units within the SAC is set out in Table 1 and Table 2 of the IHRA. NE suggested in the meetings with OUD (25th April and 6th June 2024) that this information should not be relied upon which is inconsistent with its advice given on other plans and projects For example, CDC are referred to Natural England’s ‘*Advice On Achieving Nutrient Neutrality For New Development In The Solent Region*’, which at paragraph 2.3 makes reference to the condition of designated sites as part of their consideration of the likelihood of significant effects on those sites.⁶

Wealden v SoS for Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC 351 and Wyatt v FBC [2022] EWCA Civ 983

- 6.3 Wealden related to the approach to the consideration of in-combination effects at the HRA screening stage. In-combination effects have been clearly presented to CDC in the IHRA⁷ for the Proposed Development. The relevance of this case is therefore limited other than to the

⁵ Ibid., paragraph 5.1.

⁶ Natural England, Advice On Achieving Nutrient Neutrality For New Development In The Solent Region, June 2020. Available here: <https://www.push.gov.uk/wp-content/uploads/2020/06/Natural-England%E2%80%99s-latest-guidance-on-achieving-nutrient-neutrality-for-new-housing-development-June-2020.pdf>

⁷ Wealden v SoS for Local Government, Lewes District Council and South Downs National Park Authority [2017] EWHC 351, paragraph 93.



extent that it highlights that Natural England's advice can be wrong and that it can be a rational decision to reject their advice.⁸

- 6.4 The *Wyatt* Court of Appeal judgment provides further authority on this point, highlighting that advice issued by Natural England “...is not statute. It does not create some additional legal requirement or test. It is an advisory document, which is neither mandatory in effect nor prescriptive of a single correct procedure to be followed. It contains guidance, whose purpose is to assist competent authorities in performing their functions under the habitats legislation. It does not assert that the approach it suggests is the only means of conducting an appropriate assessment.”⁹ Moreover, *Wyatt* confirms, at paragraph 9(4) of the judgment¹⁰, that provided that there are cogent reasons for doing so that the competent authority “may lawfully disagree with, and depart from, such advice” from Natural England.

Other plans and projects

- 6.5 Natural England have suggested in their objection that a number of emerging plans should be taken into consideration as part of the ‘in combination’ assessment. This includes numerous plans that have not gone beyond a Regulation 18 stage of the plan-making process. The wording of Regulation 18(1) of The Town and Country Planning (Local Planning) (England) Regulations 2012 (‘2012 Regulations’) makes clear that documents issued for Regulation 18 consultation are not themselves plans. It reads:

“18.—(1) A local planning authority must—

(a) notify each of the bodies or persons specified in paragraph (2) of the subject of a local plan which the local planning authority propose to prepare, and

(b) invite each of them to make representations to the local planning authority about what a local plan with that subject ought to contain.” (own emphasis)

- 6.6 It is plain from considering the relevant provisions of the 2012 Regulations that a draft emerging plan issued under Regulation 18 is not a plan itself, but an indication of what might eventually appear in such. It is therefore entirely reasonable for the IHRA to have not included such documents in the in-combination assessment set out within the IHRA as they are not plans for the purposes of the Habitats Regulations and are therefore outside the scope of the in-combination requirement under the Habitats Regulations. It is noted that the same approach to scoping our such documents has been taken by Oxford City Council for the purposes of their

⁸ Ibid., paragraph 108.

⁹ *R(Wyatt) v FBC [2022] EWCA Civ 983*. Paragraph 56.

¹⁰ Paragraph 9 of the *Wyatt* Court of Appeal judgment helpfully reviews and summarises the relevant principles applying which derive from the wealth of domestic and European case law on the Habitats Regulations.



appropriate assessment of the draft Oxford City Local Plan 2040 that is currently under examination.

- 6.7 Furthermore, even if (contrary to the above analysis) it is considered that the emerging plans are plans within the scope of the in-combination requirement under the Habitats Regulations, relevant case law has held that the in-combination assessment exercise (whether under the EIA or Habitats regimes) should not cause undue delay to the planning system and the obligation is only to consider cumulative impacts **so far as is reasonably possible** (*R(Together Against Sizewell C Ltd v SSESNZ [2023] EWCA Civ 1517* at paragraph 97). The Court of Appeal further stated in the Sizewell C case that a disproportionate interference with the public interest and the rights and interests of landowners and developers, would be likely to occur if the position were (as is seemingly being advocated by Natural England in the present case) that the impacts of every related plan or project had to be definitively assessed before any of them could be allowed to proceed.
- 6.8 Moreover, in the present case, the emerging documents referenced by Natural England are far too inchoate and, in practice, impossible to assess in relation to the Proposed Development.

JNCC Guidance

- 6.9 OUD have in previous submissions to CDC pointed to guidance provided by the Joint Nature Conservation Committee ('JNCC') regarding consideration of trunk roads in project-level HRAs.¹¹ The crux of the JNCC Guidance is set out in page 20 of the Guidance as follows:

*"When undertaking a project level HRA to consider the effects of an individual development proposal on traffic related emissions on the existing road network, strategic 'trunk roads' should be excluded from the scope of the assessment."*¹²

- 6.10 NE have stated in meetings that have been held since OUD's letter was issued that this JNCC Guidance is not to be relied upon and that (for reasons unclear) it is not relevant to this case despite the fact that the HRA in the present case is a project-level HRA and the A34 is a trunk road. No rationale, justification or authority for why this JNCC Guidance should be disregarded by CDC as competent authority has been provided by NE. As such, NE's advice is directly contrary to the JNCC Guidance, which (among other things) states *"This report is intended for an 'end user' who is involved in the assessment of air pollution impacts on designated sites to inform decision-making."* It continues: *"This report should be used to inform decision-making where a proposal gives rise to the potential for air pollution impacts on designated nature conservation sites."*

¹¹ Paragraph 8 of the note prepared by Town Legal on behalf of OUD, appended to the letter dated 11 April 2024.

¹² CHAPMAN, C. & KITE, B. 2021. Guidance on Decision-Making Thresholds for Air Pollution. JNCC Report No.696 (Main Report), JNCC, Peterborough, ISSN 0963-8091. Page 20.



- 6.11 The JNCC Guidance was commissioned by Defra. The report was peer reviewed by scientific advisors from NE. Indeed, NE are explicitly acknowledged and thanked in the JNCC Guidance for their contribution to participating in workshops during the preparation of the document.
- 6.12 In the absence of any robust and clear reasoning from Natural England as to why it is justified to depart from the JNCC Guidance, OUD consider that it is entirely reasonable for CDC, as competent authority, to take the JNCC Guidance into account when carrying out the HRA for the Proposed Development and to give it due weight in its considerations.
- 6.13 As CDC will be aware, the A34 is a trunk road. Information has been provided on air quality effects arising from road traffic along the A34 by OUD. This is to fulfil its regulation 63(2) duty under the Habitats Regulations. It is then for CDC, in its discretion as competent authority under the Habitats Regulations, to decide, in its judgment, (a) whether or not to take into account the JNCC's guidance and (b) if so, what weight should be attached to it in the HRA.

Traffic rates

- 6.14 NE have highlighted that the Annual Average Daily Trip ('AADT') levels considered in the project level IHRA for the Proposed Development are higher than those considered through the HRA that supported the adoption of the Local Plan Partial Review. While increases in AADTs are modelled as being higher in the IHRA, it is notable that AADTs along the A34 are modelled to be lower in the 2033 future baseline and the 2033 + Development scenario than is the case for the 2019 baseline. Table 5 below summarises these figures.

Table 5 – AADT figures

Road	2019 baseline	2033 future baseline	2033 Development +	2033 Development + In combination
A40	22370	22931	23700	25111
A34	89064	85992	88856	89425

Other HRAs carried out by competent authorities

- 6.15 CDC are referred to [guidance issued by Defra on the preparation of HRAs](#). In particular this guidance makes it clear that a competent authority can use an HRA previously carried out by another competent authority in certain circumstances. CDC have, of course, recently carried out their own plan level HRA in August 2023 and concluded that there would be no adverse effects to the integrity of the Oxford Meadows SAC. The Proposed Development was considered by CDC in reaching that conclusion. The same is true of Oxford City Council and the HRA they have carried out in support of their Local Plan 2040.

Summary

This letter provides: (a) further information requested by NE and (b) sets out matters that OUD consider are relevant for CDC as competent authority under the Habitats Regulations when carrying out its HRA pursuant to Regulation 63.



Should any further information be required by CDC for this, we would be happy to discuss this.

Yours sincerely

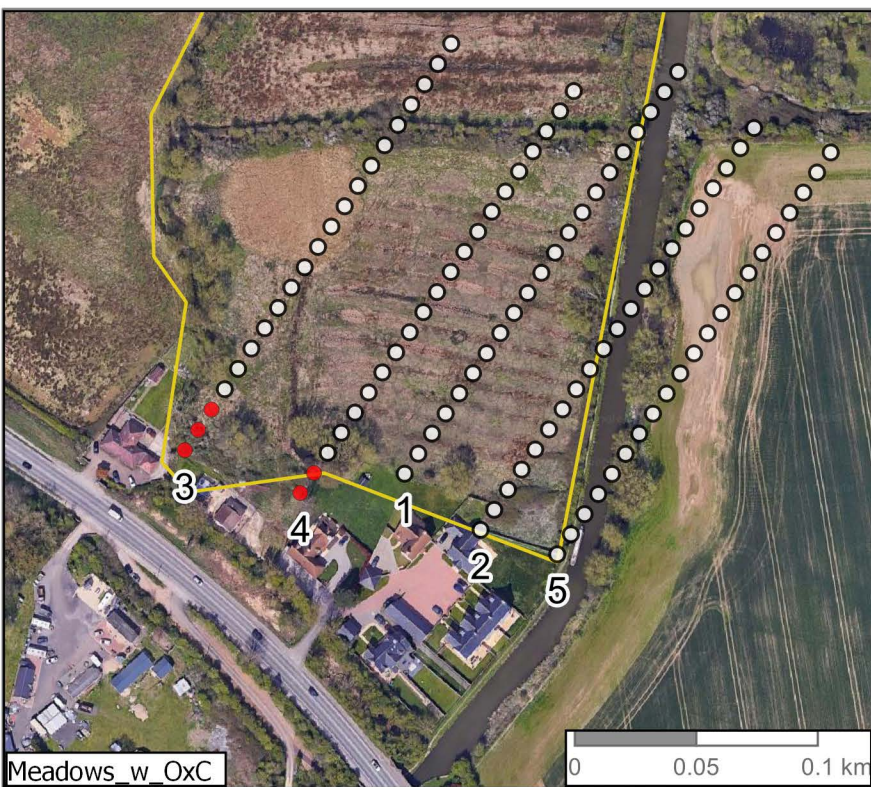
Gregory Blaxland
Associate

enc. Appendix 1 – Spatial air quality effects figures

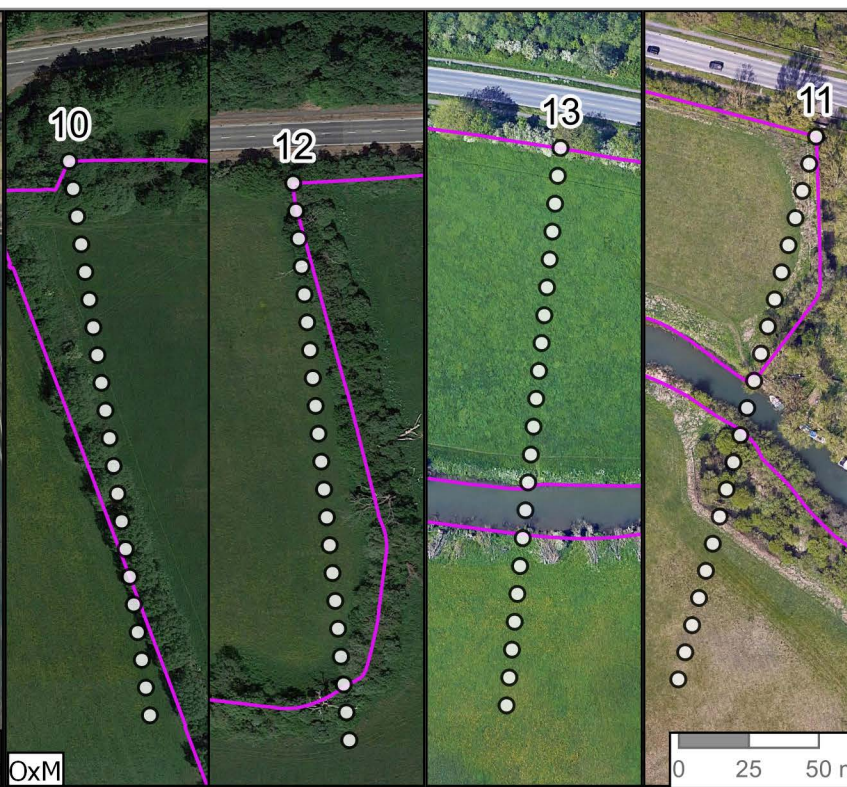
cc. Tom Clarke (OUD)
Paul Arnett (Town Legal)
Dr Tom Flynn (BSG Ecology)
Matthew Sharpe (Quod)



Appendix 1 – Spatial air quality effects figures



Meadows_w OxC



OxM

Legend

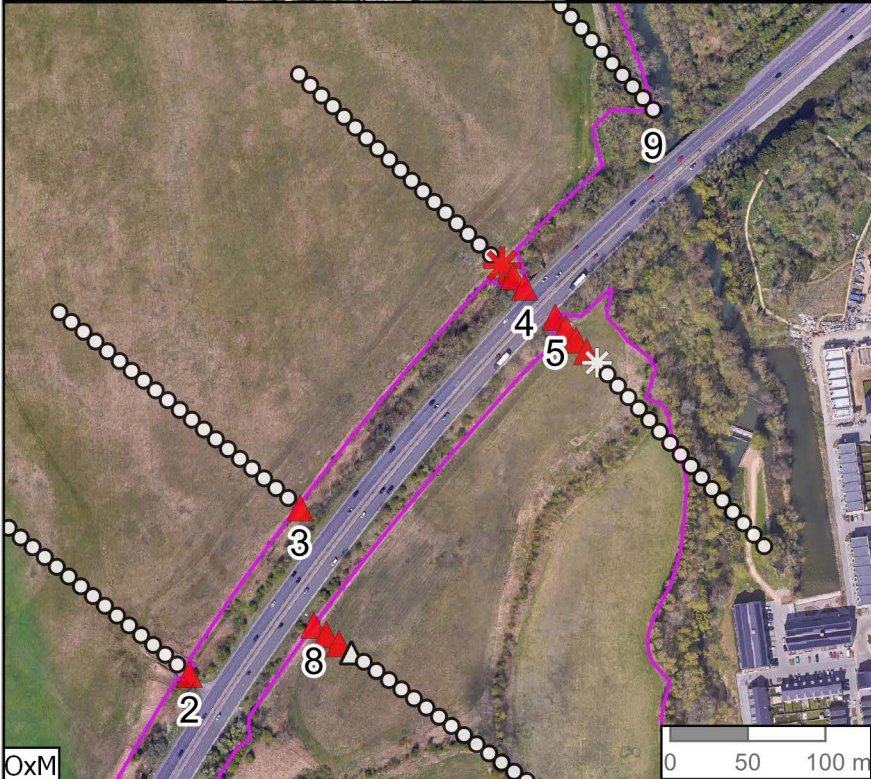
Critical level: 30 ug/m3 annual mean

Ecological transect modelled NOx concentration (in isolation)

- Process contribution less than 1% of critical load/level:
- DN and DS below critical load/level
 - ⊗ DN below critical load/level DS above critical load/level
 - △ DN and DS above critical load/level
- Process contribution greater than 1% of critical load/level:
- DN and DS below critical load/level
 - ✳ DN below critical load/level DS above critical load/level
 - ▲ DN and DS above critical load/level

Ecological sites

- Meadows West of Oxford Canal LWS
- Oxford Meadows SAC/SSSI



OxM



OxM

NOx concentration in isolation



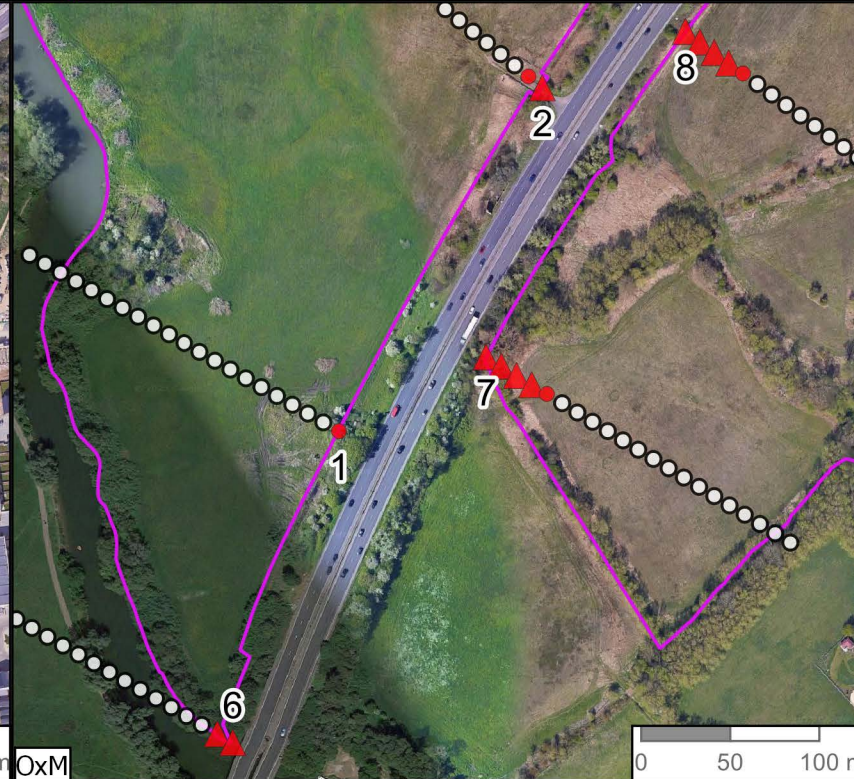
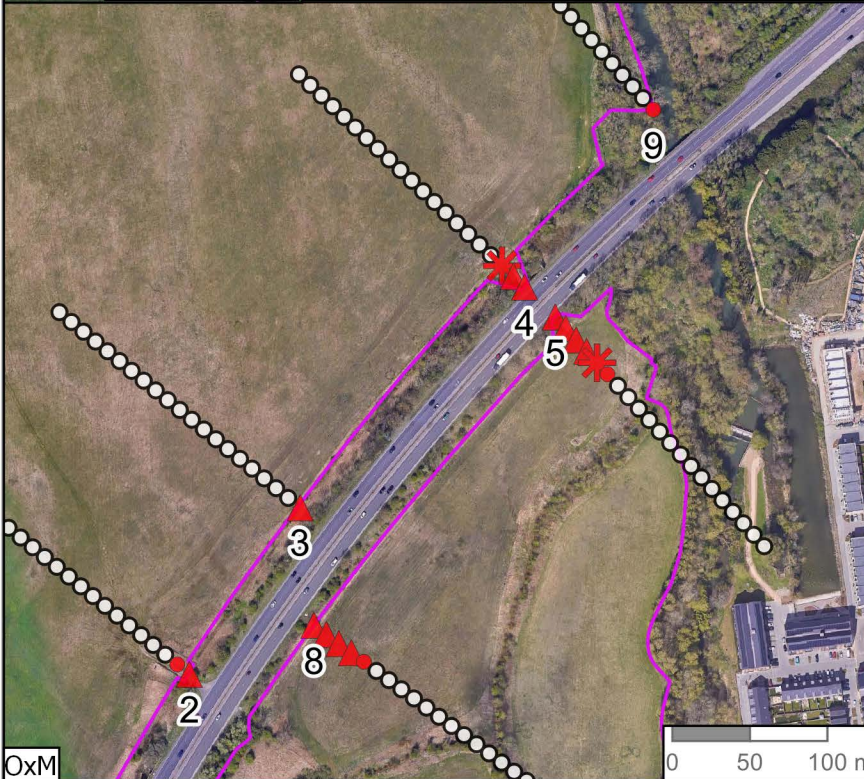
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Legend

Critical level: 30 ug/m3 annual mean

Ecological transect modelled NOx Concentration (in combination)

- Process contribution less than 1% of critical load/level
- DN and DS below critical load/level
- DN below critical load/level DS below critical load/level
- △ DN and DS above critical load/level
- Process contribution greater than 1% of critical load/level
- DN and DS below critical load/level
- DN below critical load/level DS below critical load/level
- ▲ DN and DS above critical load/level

Ecological sites

- ▭ Meadows west of Oxford Canal LWS
- ▭ Oxford Meadows SAC

NOx concentration in combination



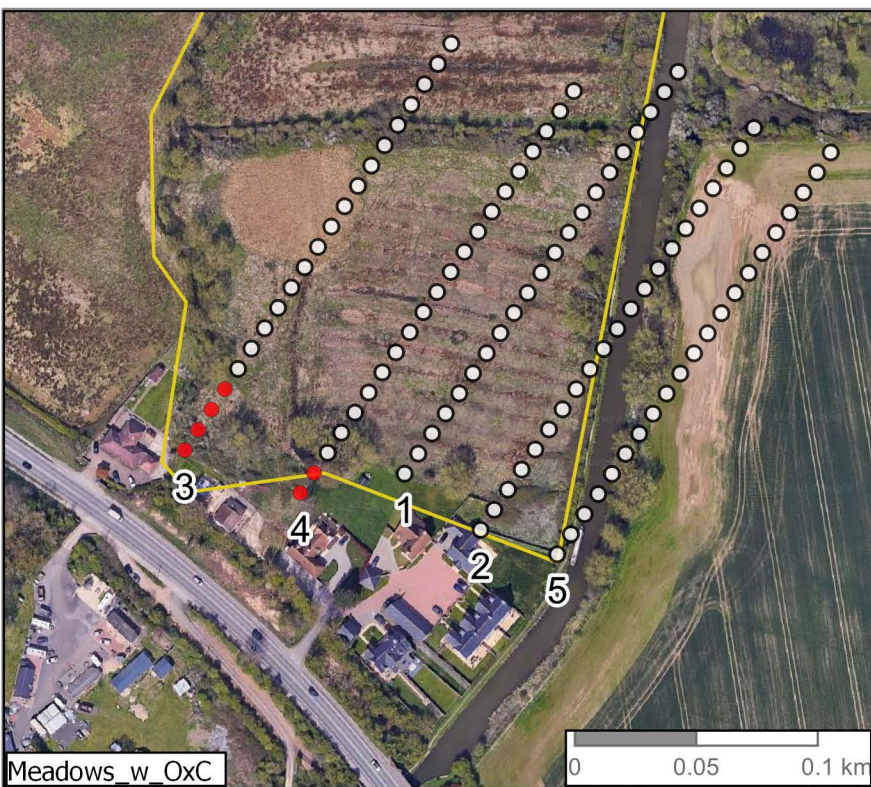
Date: 06 2023

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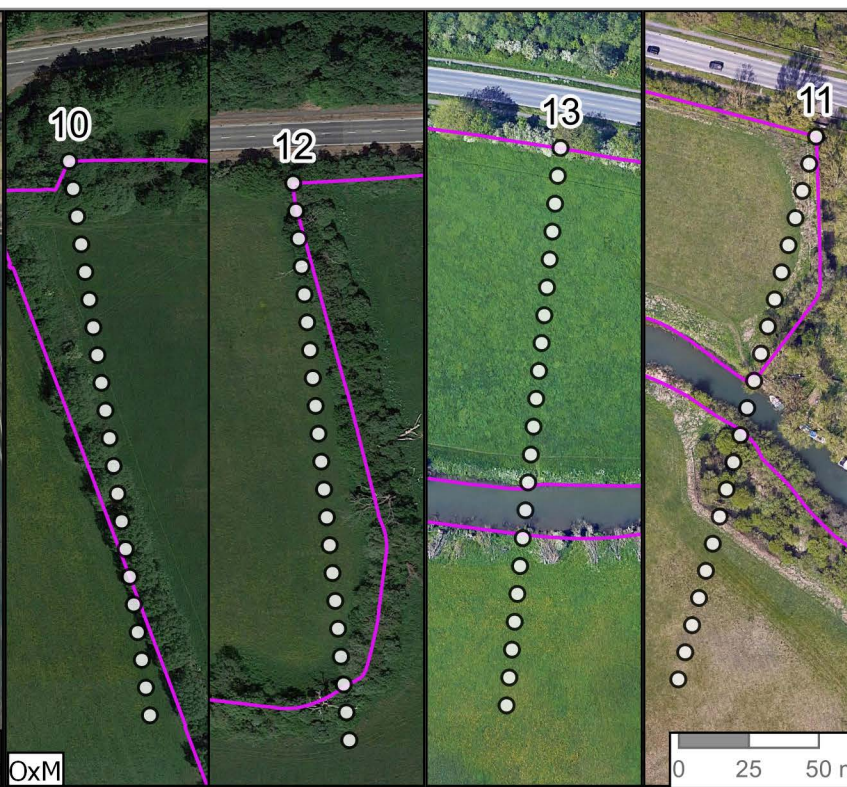
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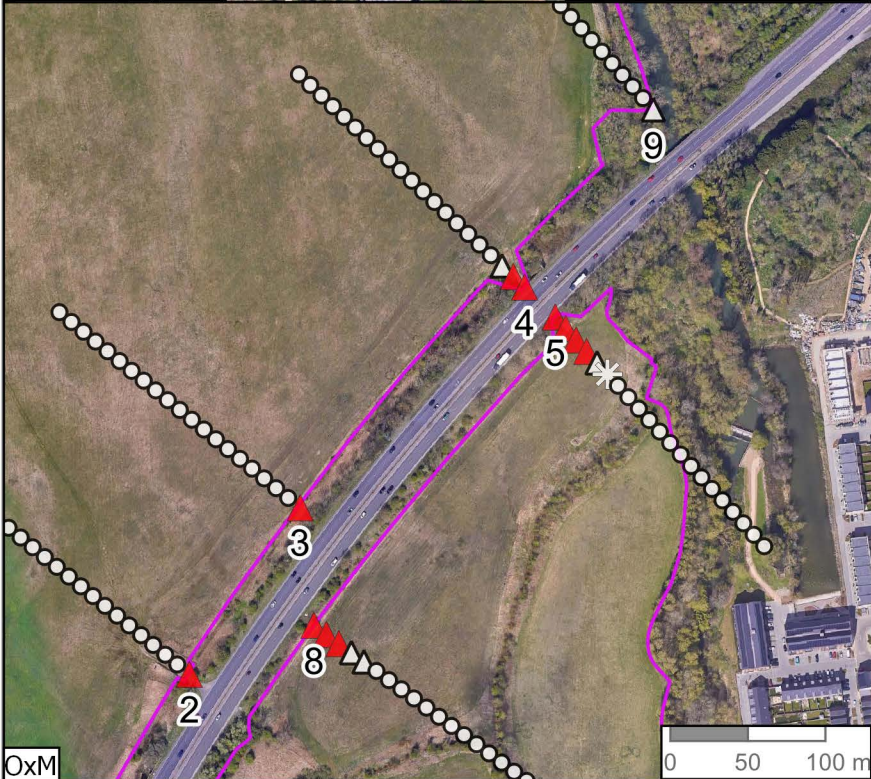
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Meadows_w OxC



OxM



OxM



OxM

Legend

Critical level: 3 ug/m3 annual mean

Ecological transect modelled NH3 concentration (in isolation)

- Process contribution less than 1% of critical load/level:
- DN and DS below critical load/level
 - ⊗ DN below critical load/level DS above critical load/level
 - △ DN and DS above critical load/level
- Process contribution greater than 1% of critical load/level:
- DN and DS below critical load/level
 - * DN below critical load/level DS above critical load/level
 - ▲ DN and DS above critical load/level

Ecological sites

- ▭ Meadows West of Oxford Canal LWS
- ▭ Oxford Meadows SAC/SSSI

NH3 concentration in isolation



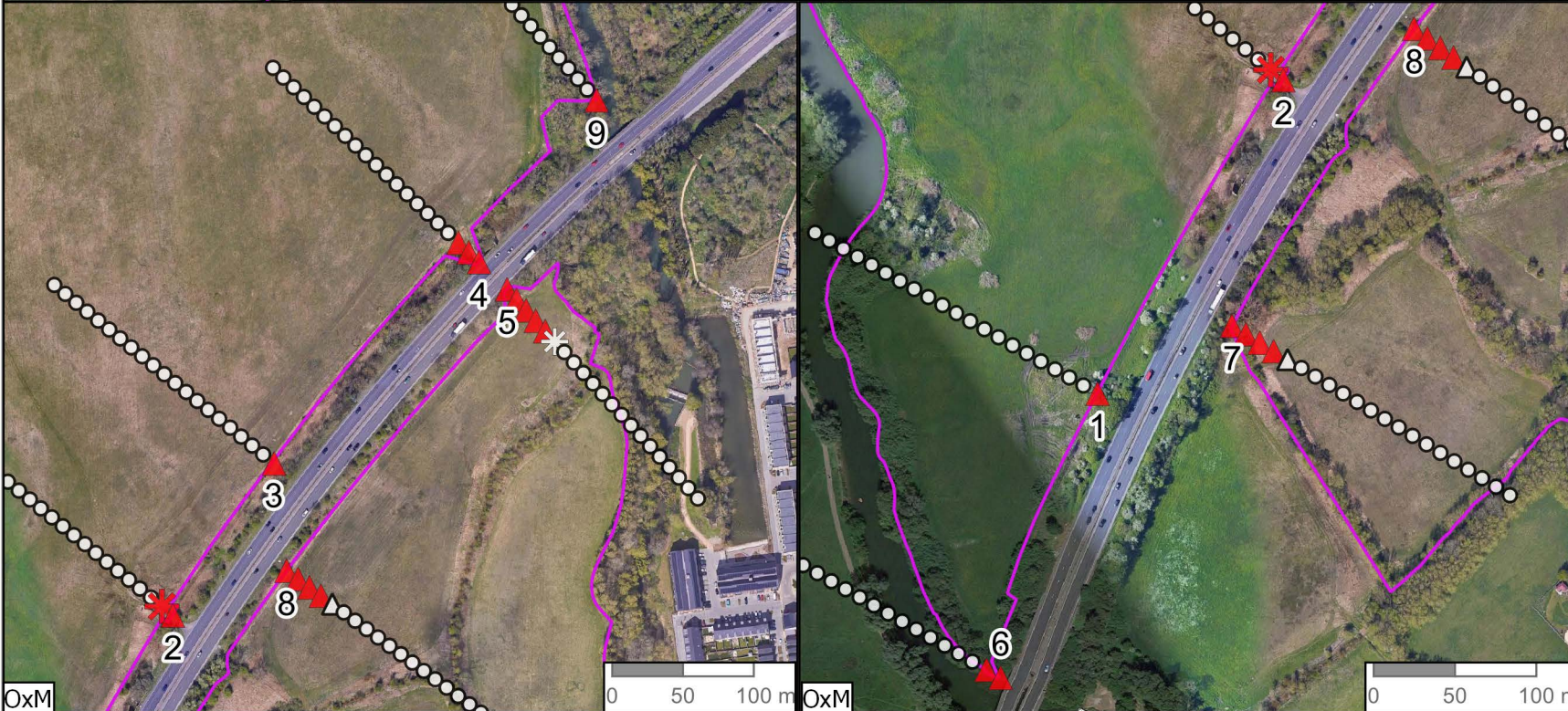
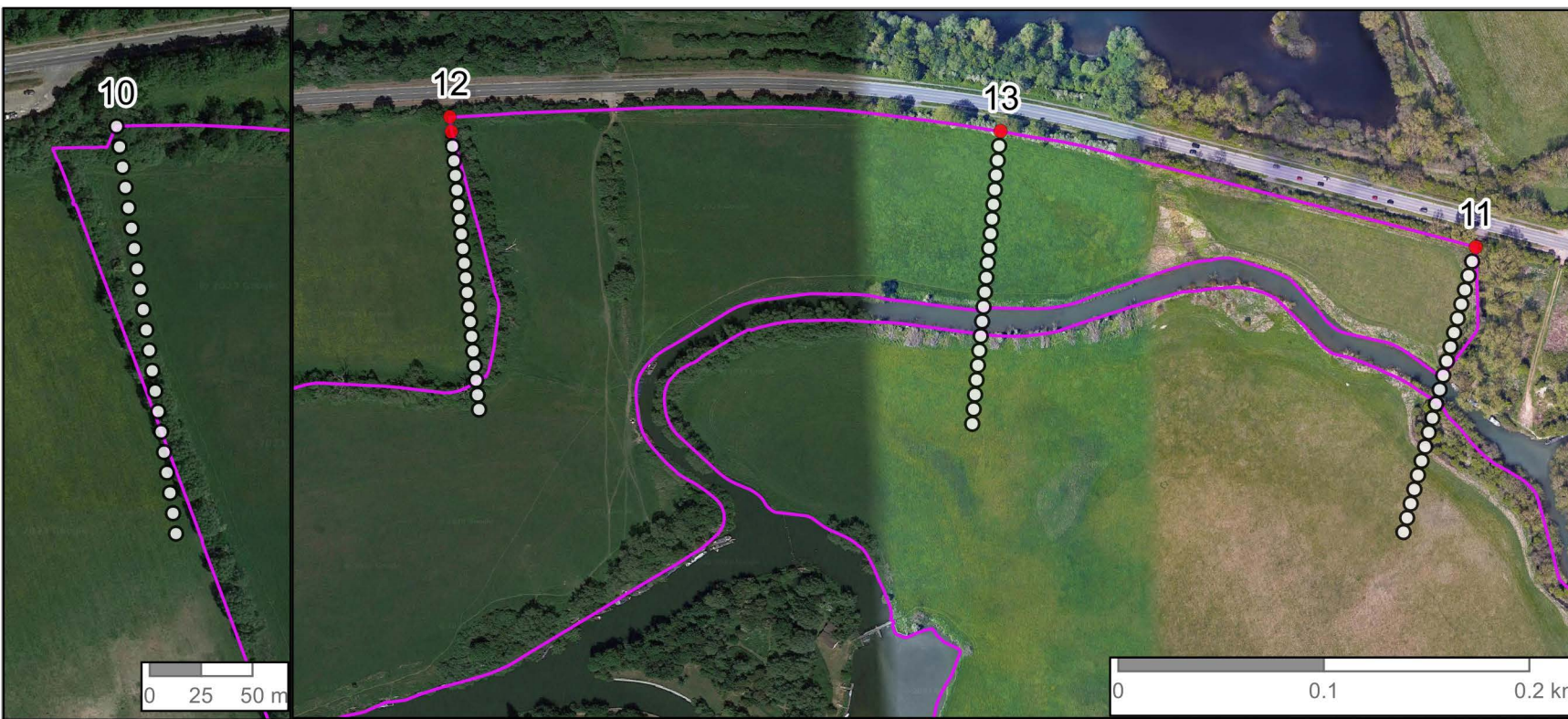
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Legend

Critical level: 3 ug/m³ as annual mean

Ecological transect modelled NH₃ concentration (in isolation)

- Process contribution less than 1% of critical load/level
 - DN and DS below critical load/level
 - DN below critical load/level DS above critical load/level
 - △ DN and DS above critical load/level
- Process contribution greater than 1% of critical load/level
 - DN and DS below critical load/level
 - DN below critical load/level DS above critical load/level
 - ▲ DN and DS above critical load/level

Ecological sites

- ▭ Meadows West of Oxford Canal LWS
- ▭ Oxford Meadows SAC

NH₃ concentration in combination



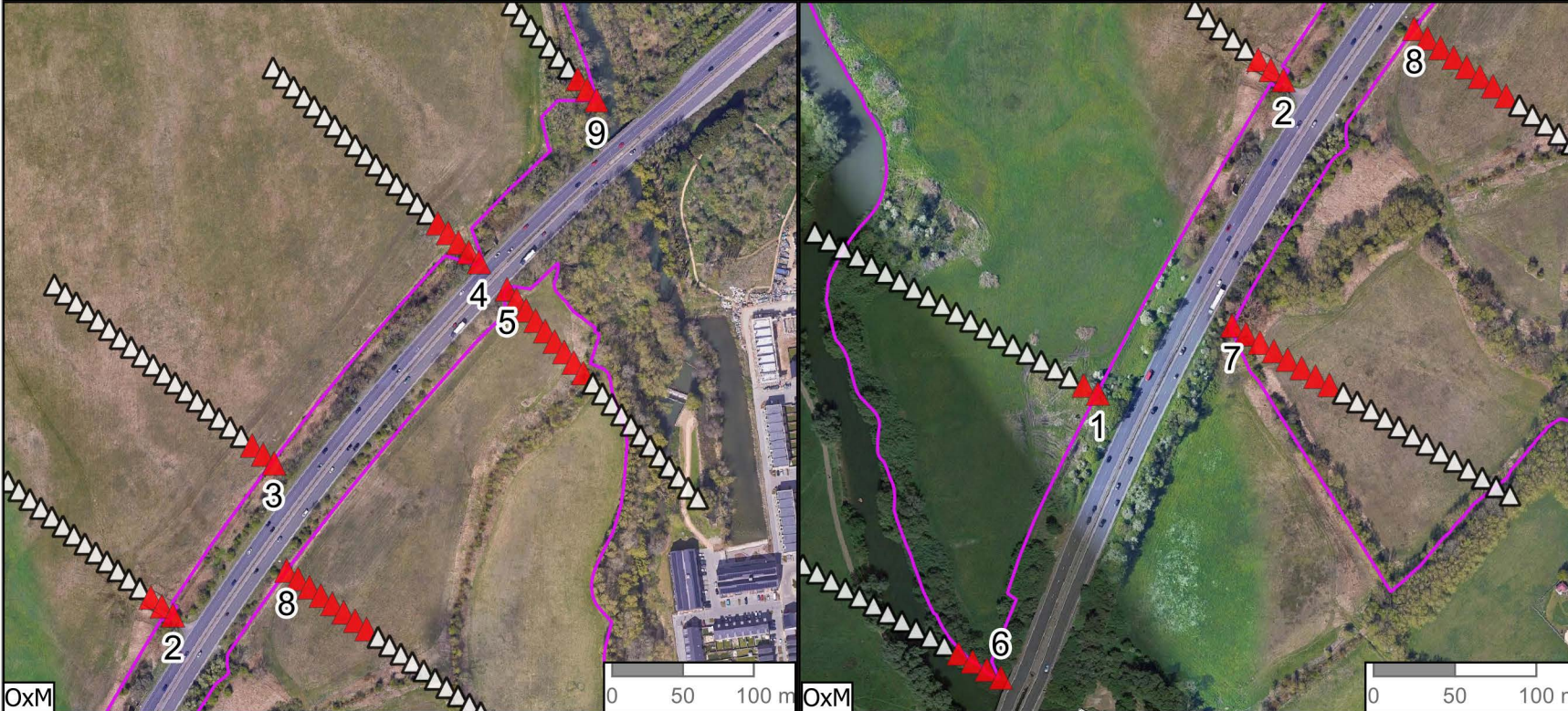
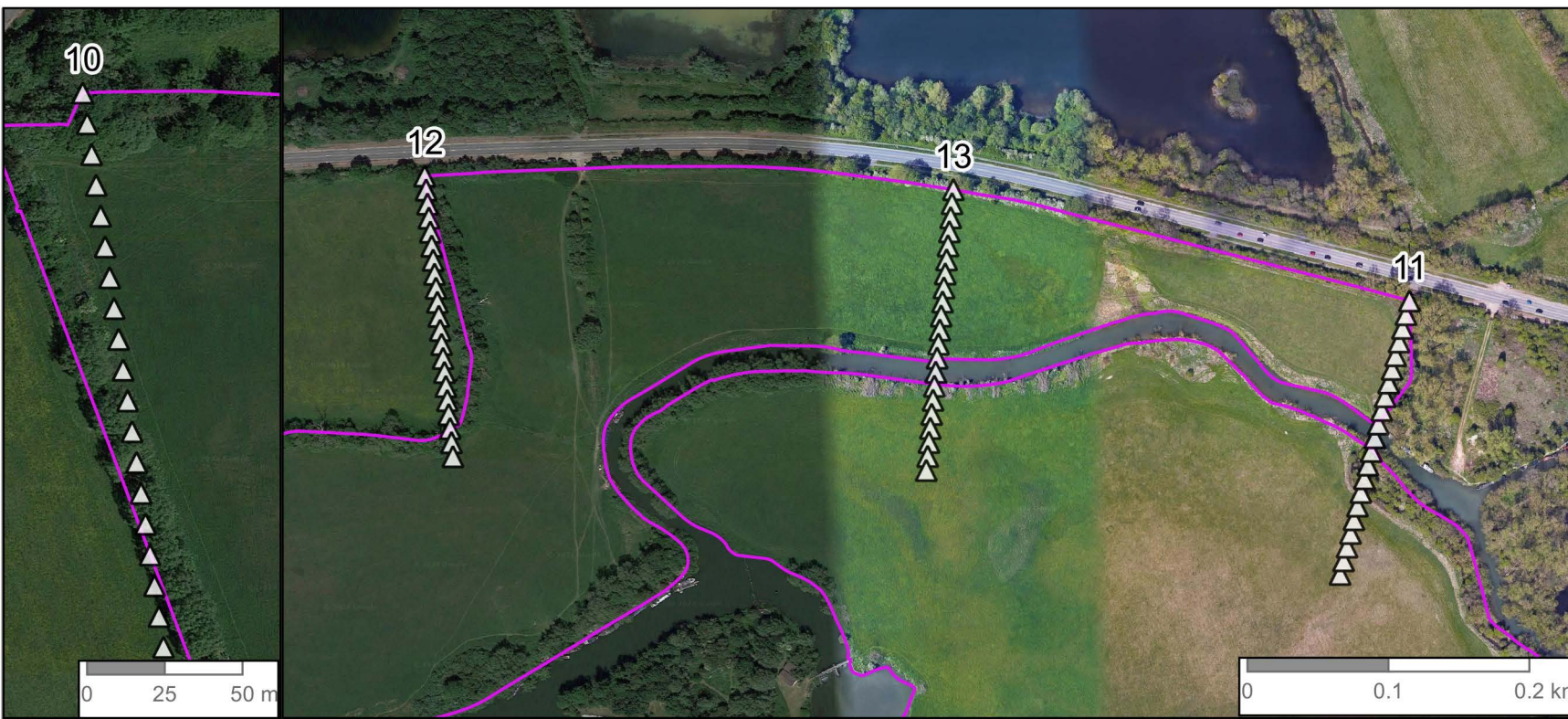
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Legend

Min critical load: 10 kg/ha/yr
 Max critical load: 20 kg/ha/yr

Ecological transect modelled nitrogen deposition (in isolation)

- Process contribution less than 1% of min critical load/level
- DN and DS below min critical load/level
- ⊗ DN below critical load/level DS below min critical load/level
- △ DN and DS above min critical load/level
- Process contribution greater than 1% of min critical load/level
- ⊗ DN below critical load/level DS below min critical load/level
- ▲ DN and DS above min critical load/level

Ecological sites

- Oxford Meadows SAC

Nitrogen deposition in isolation - minimum critical load

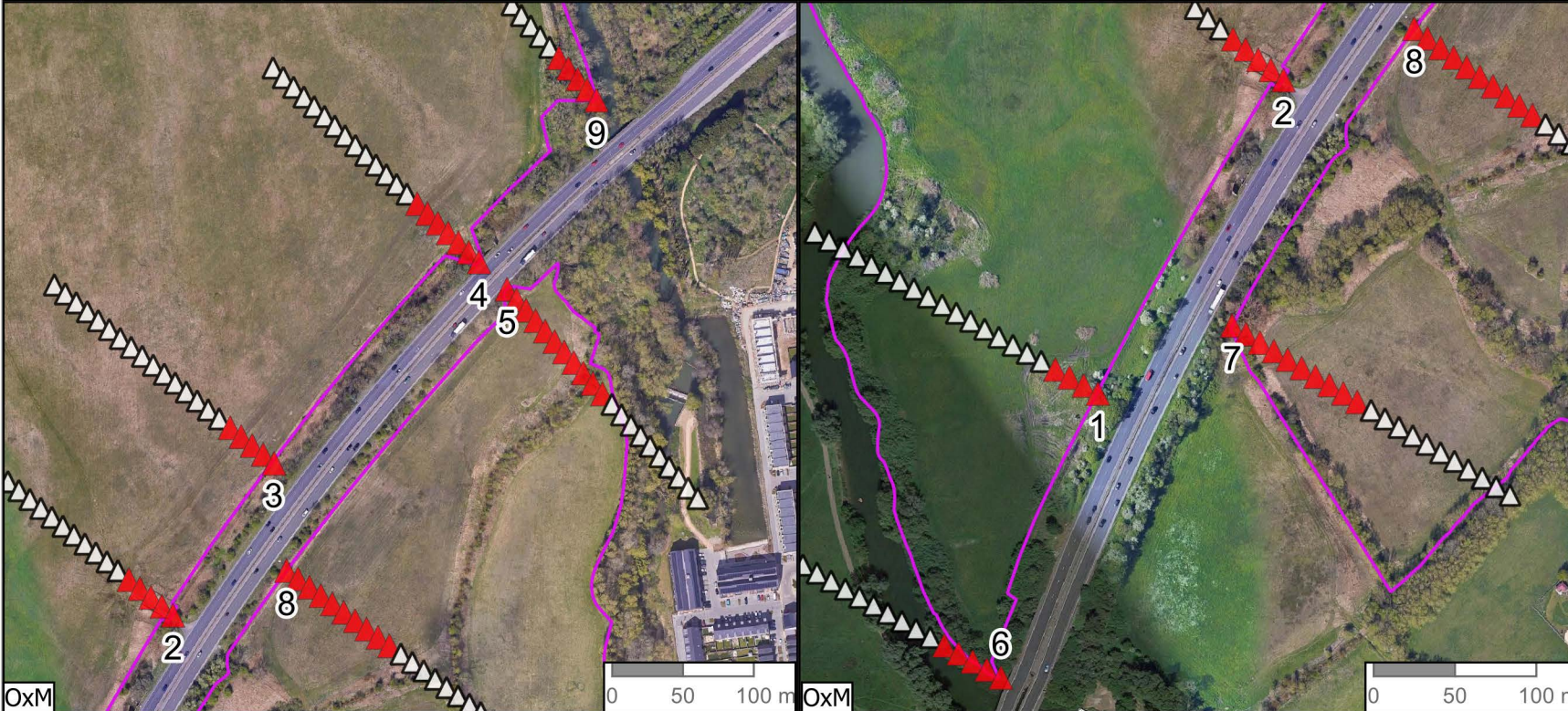
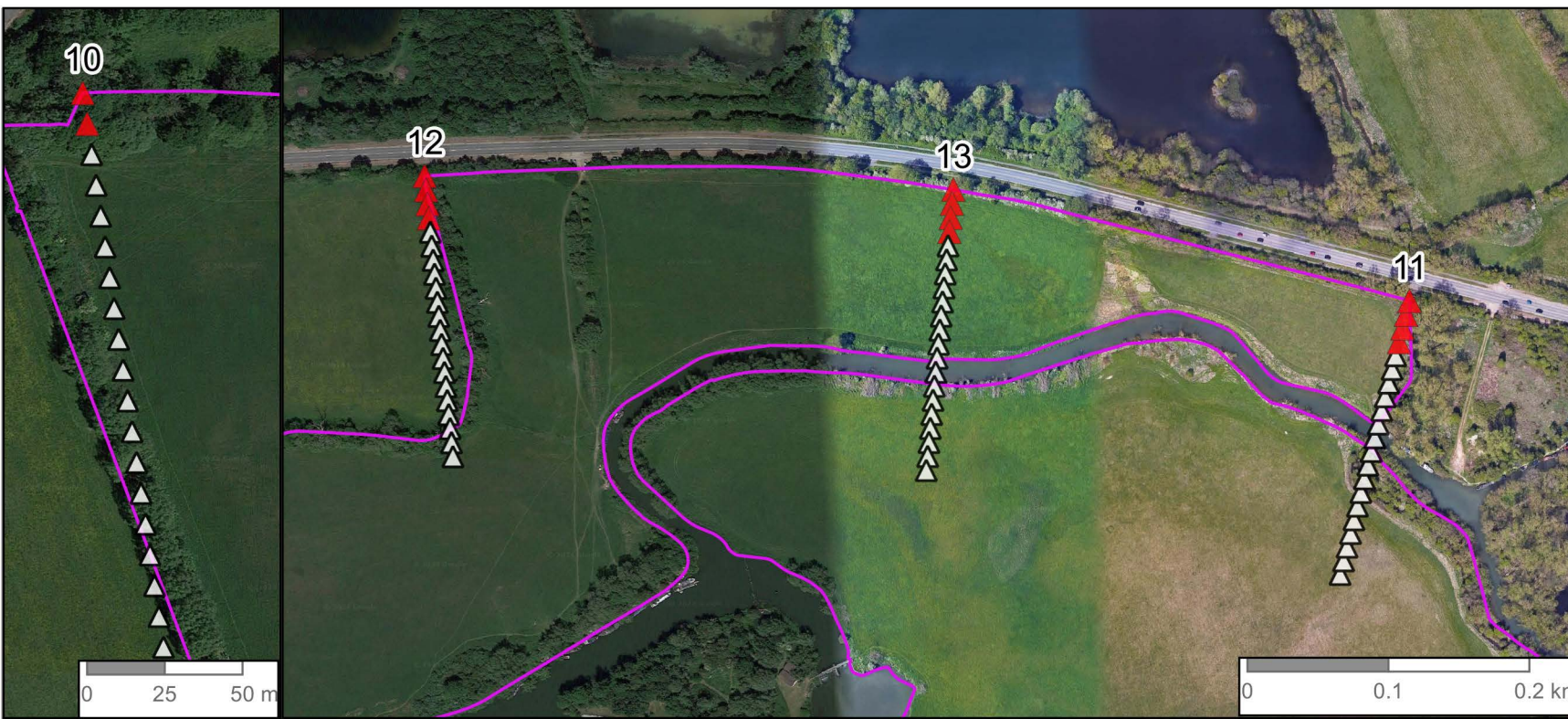


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Legend

Min critical load: 10 kg/ha/yr
 Max critical load: 20 kg/ha/yr

Ecological transect modelled nitrogen deposition (in combination)

- Process contribution less than 1% of min critical load/level
- ⊗ DN below critical load/level DS below min critical load/level
- △ DN and DS above min critical load/level
- Process contribution greater than 1% of min critical load/level
- * DN below critical load/level DS below min critical load/level
- ▲ DN and DS above min critical load/level

Ecological sites

- Oxford Meadows SAC

Nitrogen deposition in combination - minimum critical load



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