Library Ref: CD15

Creating a world fit for the future

RICARDO

Addendum to the Air Quality Habitats Regulations Assessment for Havant Borough Local Plan

Report for Havant Borough Council

ED 12768117 | Issue number 2 | Date 22/01/2021

Customer:

Havant Borough Council

Customer reference:

ED12768117

Contact:

Thomas Adams, Gemini Building, Fermi Avenue, Harwell, Didcot, OX11 0QR, UK

T: +44 (0) 1235 753 517

E: Thomas.Adams@ricardo.com

Author:

Thomas Adams, Richard Andrews, Mark Broomfield & Laurence David

Approved by:

Mark Broomfield

Date:

29/01/2021

Ref: ED 12768117

Ricardo is certified to ISO9001, ISO14001, ISO27001 and ISO45001

Executive summary

Ricardo provided an Air Quality Habitats Regulations Assessment (HRA) for the Havant Borough Local Plan (HBLP) in January 2019. The report concluded that potential adverse effects of nitrogen deposition at Solent Maritime SAC could not be ruled out. Potential adverse effects were identified in relation to what, at the time, was suspected to be perennial vegetation of stony banks (PVSB) at the area of the SAC close to the A2030 Eastern Road. PVSB is a vegetated shingle community that is a qualifying feature of the Solent Maritime SAC. However, the survey on which the conclusion of PVSB was based was limited by being done, through necessity, at a sub-optimal time of year for identifying annual species of shingle substrate.

In addition, the report pre-dated Ricardo's awareness of, and access to, surveys and proposals for the North Portsea Island (NPI) Coastal Defence Scheme and a Clean Air Zone (CAZ) in Portsmouth. These are also relevant to the management of potential impacts on the potential PVSB community.

The purpose of this addendum was therefore to advise, whether on the basis of the additional information now available, there will be an adverse effect on the PVSB feature of the Solent Maritime SAC from the HBLP in combination with the Portsmouth City Council (PCC) development plan. And if so, what practicable measures could Havant Borough Council (HBC) incorporate into its Local Plan to prevent adverse effects.

An apparent disparity was identified between two survey reports relating to the interpretation of vegetation communities on seven small areas of coastal habitat on the margins of Langstone Harbour, part of the Solent Maritime SAC. Following a review of the two reports and consultation with Coastal Partners, the Council's Ecologist and Natural England, it was concluded that all areas of vegetated shingle previous assigned as potentially PVSB were in fact Annual Vegetation of Drift Lines (AVDL).

In light of the vegetation community clarification, this report revisited the HRA process to ensure that the site was appropriately assessed. On the basis of available evidence, it was concluded that there are no adverse effects on the SAC site arising from increased nitrogen deposition associated with either the HBLP alone or in-combination, and therefore no further assessment or mitigation is required for nitrogen deposition. These findings supersede the conclusions relating to nitrogen deposition at Solent Maritime SAC made in the original HRA report.

Potential in-combination impacts from the Portsmouth CAZ were investigated through review of the Local Plan Air Quality Modelling Report (AQ3) submitted by PCC as part of the Full Business Case in December 2020.

Based on the assessment of the best available data, it was concluded that the nitrogen load/levels experienced by European sites would either decrease or remain the same under the CAZ then there would be no in-combination effect. On this basis, then there would be no in-combination effect requiring consideration.

Table of Contents

Executive summary iii
Table of Contents iv
Glossary v
1 Introduction 1
2 Clarification of the vegetation community present at Solent Maritime SAC 3
2.1 Review of disparities between two coastal vegetation survey reports 3
2.1.1 Reasons for the disparities 4
2.1.2 Review of the Solent Maritime SAC citation and supporting description of its shingle qualifying feature 6
2.1.3 Conclusion 7
2.2 Consultation with Natural England 7
2.3 Conclusion 8
3 Updated HRA of Solent Maritime SAC 9
3.1 HRA Stage 1: Assessment of air quality impacts against screening thresholds 9
3.2 HRA Stage 2: Appropriate Assessment 10
3.2.1 Nitrogen deposition 10
4 Potential in-combination effects from the Portsmouth CAZ 12
5 Conclusion 12

Glossary

Abbreviation	Definition
AQ	Air Quality
AVDL	Annual Vegetation of Drift Lines
CAZ	Clean Air Zone
CL	Critical Load
CORINE	Coordination of Information on the Environment
DM	Do Minimum
HBC	Havant Borough Council
HBIC	Hampshire Biodiversity Information Centre
HBLP	Havant Borough Local Plan
HRA	Habitats Regulations Assessment
LP	Local Plan
NVC	National Vegetation Classification
PCC	Portsmouth City Council
PfSH	Partnership for South Hampshire
PVSB	Perennial Vegetation of Stony Banks
SAC	Special Area of Conservation
SSSI	Site of Special Scientific Interest
TN	Target Note

1 Introduction

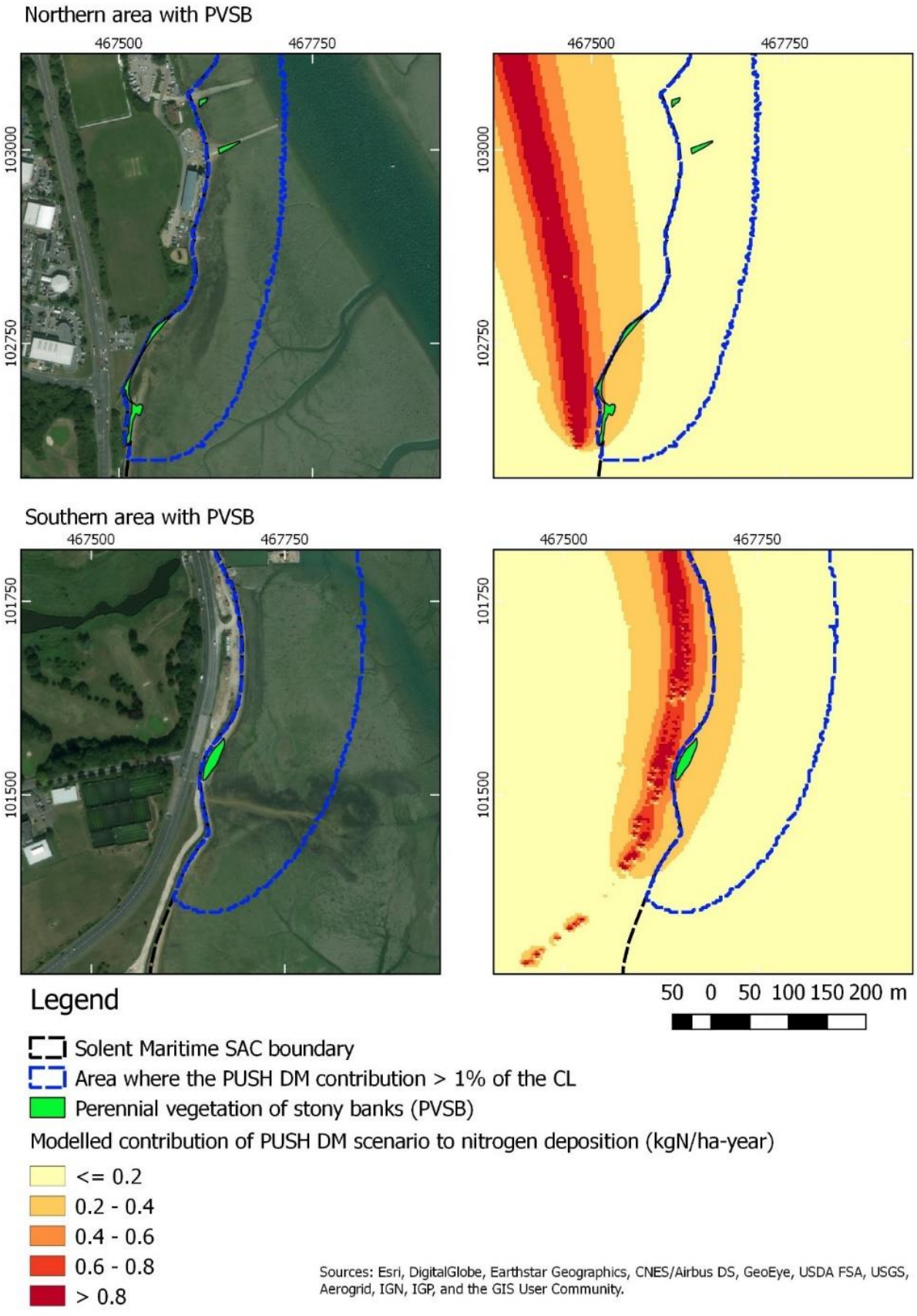
Ricardo provided an Air Quality Habitats Regulations Assessment (HRA) for the Havant Borough Local Plan (HBLP) in January 2019. The report concluded that potential adverse effects of nitrogen deposition at Solent Maritime SAC could not be ruled out. These potential effects could arise mainly from the Portsmouth City Council (PCC) development plan, with a small additive in-combination effect from the HBLP. Potential adverse effects were identified in relation to what, at the time, had potential to be perennial vegetation of stony banks (PVSB) at the area of the SAC close to the A2030 Eastern Road. Due to project time constraints, this was based on a ground-truthing survey carried out at a sub-optimal time of year (early winter, when annual species are not very evident). Figure 1 shows the location of suspected PVSB identified within the modelled area of exceedance at Solent Maritime SAC. PVSB is a vegetated shingle community that is a qualifying feature of the Solent Maritime SAC.

In addition, the report pre-dated surveys and proposals for the North Portsea Island (NPI) Coastal Defence Scheme and to introduce a Clean Air Zone (CAZ) in Portsmouth. These are also relevant to the management of potential impacts on the potential PVSB community.

The purpose of this addendum is therefore to advise, whether on the basis of the additional information available, there will be an adverse effect on the PVSB feature of the Solent Maritime SAC from the HBLP in combination with the PCC development plan. And if so, what practicable measures could Havant Borough Council (HBC) incorporate into its Local Plan to prevent adverse effects.

The study approach is detailed in the following sections.

Figure 1: Location of suspected PVSB identified through site surveys (left) and modelled contribution of PfSH DM scenario to nitrogen deposition (right) at Solent Maritime SAC



2 Clarification of the vegetation community present at Solent Maritime SAC

Ground-truthing site surveys were undertaken at Solent Maritime SAC by Flag Ecology on behalf of Ricardo in December 2018 as part of the original HRA.[1] An apparent disparity was identified between two reports relating to the interpretation of vegetation communities on seven small areas of coastal habitat on the margins of Langstone Harbour, part of the Solent Maritime SAC. We therefore sought to clarify the type of habitat present on site in consultation with Coastal Partners[2], the Council's Ecologist and Natural England. This was important because the critical loads (CL) for different coastal vegetation community types may vary, and it may therefore be necessary to revisit the HRA process to ensure that the site is appropriately screened.

The documents in question were:

- A Phase 2 National Vegetation Classification (NVC) survey of intertidal species and habitats by SJM Ecology,[3] intended to inform a coastal defence project.
- The previously mentioned ground-truthing survey of habitat maps procured by Ricardo from Hampshire Biodiversity Information Centre (HBIC) for an AQ HRA for the HBLP. This was undertaken by Flag Ecology.[4]

As part of this study, Ricardo commissioned Flag Ecology to provide a review of disparities between the two coastal vegetation survey reports.[5] The findings are summarised in Section 2.1.

2.1 Review of disparities between two coastal vegetation survey reports

The disparity between the two reports related to the interpretation of vegetation communities on seven small areas of coastal shingle habitat on the margins of Langstone Harbour, part of the Solent Maritime SAC. The shingle deposits were extremely small in relation to the extent of the Harbour and the SAC as a whole and consisted of:

- Small areas of accreted shingle behind man-made structures such as slip ways
- Fringing shingle beaches, between terrestrial features (in this case a sea wall) and the upper saltmarsh
- A small shingle spit that formed part of a mosaic of habitats with rough grassland on drier soils, saltmarsh and a brackish lagoon

The disparity between the reports was that the SJM report mapped the vegetation as saltmarsh communities using the NVC, primarily SM24 drift line saltmarsh, but also SM14 mid-lower saltmarsh. In contrast, the Flag Ecology report classified the habitat as vegetated shingle using the Corine (Co-ordination of Information on the Environment) project, the vegetation classification that informed the Habitats Directive and the selection of SACs. Notably, the HBIC data also records vegetated shingle in these locations. The variance between the two surveys is set out in Table 1.

[1] Air Quality Habitats Regulations Assessment for Havant Borough Council, Ricardo Energy & Environment, 21/01/2019
[2] Coastal Partners is a partnership between four councils (Havant, Portsmouth, Gosport & Fareham) who manage 162 km of Hampshire's coastline, https://coastalpartners.org.uk
[3] Eastern Road Portsmouth Botanical Survey, SJM Ecology, 08/10/2018
[4] Ground-truthing of habitats at Chichester and Langstone Harbour SPA, Flag Ecology, 09/01/2019
[5] Review of disparities between two coastal vegetation survey reports relevant to the Havant Council Local Plan Air Quality HRA, Flag Ecology, 08/12/2020

Table 1: Comparison of observations in SJM Ecology and Flag Ecology surveys

Location	OS Reference	SJM Ecology	Flag Ecology
1	SU67585 03145 South-east facing coast.	Target Note (TN) 12. Narrow band of SM24 saltmarsh with sea couch, sea purslane and grass leaved orache	P28 Area inaccessible in survey, sign stated area was private. Viewed through fence appeared to be sandy shingle
2	SU67593 03063. East facing coast	TN 13. Bare Shingle accreted by concrete slipway, covered in fucoid algae. Rock samphire was present	Small accretion of shingle against concrete slipway. One specimen of sea beet, and sea couch along edge of sea wall. Extensive cover of Fucoid algae
3	SU67617 02991	TN 14. Bare Shingle accreted by concrete slipway, covered in fucoid algae	P29 Very small accretion of shingle by slipway. Vegetated, species not confirmed, possible sea couch
4	SO67595 02663	TN 16. Bare Shingle accreted by concrete slipway, covered in fucoid algae with sea couch grass, sea purslane, and grass-leaved orache	Bare inter-tidal shingle. Not classed as vegetated
5	SU67518 02680 Opposite junction Airport Service Road	Complex of habitats at TN 21 including a shingle spit and brackish water body. Habitats described were a shingle spit with spear leaved orache, grass-leaved orache and sea beet. Described as transitional between SM 24 and SM 14. Narrower bands of shingle against sea wall visible in photograph 4	P30. This was a shingle spit fronting a strip of rough grassland. Vegetation included sea beet and dead annual species. Described as a mix of AVDL and PVSB. Algae on beach to east, lower down the shingle ridge. Shingle exposure extended to north adjacent to sea wall in narrow strip
6	SU67578 01283 Opposite junction Tangier Road	TN 39. Shingle ridge in front of SM24 Sea couch-grass saltmarsh at high tide line with abundant grass-leaved orache, spear-leaved orache, and sea beet, with occasional sea couch. Photograph 7	P31 A clear accretion of shingle above the high tide line. Vegetation included sea beet and dead annual species. AVDL and PVSB not distinguished
7	SU 67577 01272	TN 45 on shingle with dominant grass-leaved orache, abundant sea-beet, occasional sea couch and one or two annual sea blite and sea mayweed	Bare intertidal shingle

2.1.1 Reasons for the disparities

The SJM Ecology report apparently did not follow the definition given in the Site of Special Scientific Interest (SSSI) selection guidelines[6] for Saltmarsh Vegetation as halophytic (salt-loving) plants colonising fine-grained sediment (mud and sand) (Rees, Angus, Creer, Lewis and Mills, 2019). The SSSI selection guidelines for Vegetated Shingle, in the same document, describes Coastal Shingle as

[6] Available from: https://jncc.gov.uk/our-work/guidelines-for-selection-of-sssis/

occurring on sediment with particle sizes ranging from 2 to 200 mm, material that is too large to be moved by wind, needing wave and storm processes to form beaches. The plant communities at locations 2 – 7 were growing on shingle, therefore the description of the vegetation as a form of vegetated shingle (e.g. PVSB or AVDL) is valid.

Two possible other explanations are:

1. That SJM Ecology did not map the site in fine detail, and as the individual shingle areas were small, they were included within adjacent saltmarsh habitat.
2. The NVC methodology used by SJM Ecology does not give a full description of the range of shingle vegetation communities within the Annual Vegetation of Drift Lines (AVDL) category. In the Solent area, the AVDL community is dominated by grass-leaved orache, a distinct drift line community that is not described in the NVC methodology.

Given the low height of the shingle deposits, and their limited extent, the substrate will be regularly disturbed by wave action at locations 2 – 6. It is likely, therefore, that the vegetation would be AVDL using the Corine vegetation classification. The alternative would be PVSB, a community that occurs on more stable shingle, mostly, or entirely beyond wave action. Flag Ecology were unable to be definitive on this subject in their visit, in late December 2018, as the annual vegetation had died back leaving sparse fragments of dead stem, and living perennial species such as sea beet, which grows in both the AVDL and PVSB communities. The SJM Ecology report, which showed luxuriant growth of annual vegetation observed in August 2018 was not made available to Ricardo and Flag Ecology at that time. AVDL plant communities are not well described in Corine, or the NVC, and there can be considerable variation between different sites that is not represented in the classifications.

Doody and Randle[7] (2003) attribute this to variable fine interstitial material.

- Some examples are composed of pure shingle, for instance where high wave action disperses fine material, leaving only shingle. This can be seen on parts of the frontage of Lydd Ranges, at Dungeness for instance. Characteristic species include Babington's orache, sea kale and shrubby sea-blite.
- Where there is a higher sand content, on beaches with lower wave energy, as found at Littlestone, Kent, where pure shingle grades into sand-dune habitat. Characteristic species include frosted orache, sea sandwort and European sea rocket.
- Beaches with a high content of organic matter, more common in the north-west of Britain: Characteristic species include orache species, sea mayweed.
- Shingle with a high silt and clay content. Characteristic species include sea beet, sea milkwort, annual sea-blite and sea purslane and other saltmarsh species.

The species recorded at locations 2 – 7 (Table 2) in the SJM Ecology report were as expected for sites with clay or silt as interstitial material in the flint. Grass-leaved orache was particularly abundant-dominant. This species is a distinctive dominant component of the AVDL shingle strandline communities and transitions towards saltmarsh habitats (SM14) in the Solent (Murdock, Hill, Cox and Randall, 2010)[8], growing with annual sea blite, Ray's knotgrass, sea mayweed, sea beet, and yellow-horned poppy. Strandline communities dominated by grass-leaved orache are an example of a plant community that is not described in the NVC. Although small in area this is a rare shingle habitat.

[7] Available from: http://publications.naturalengland.org.uk/file/77011
[8] Available from: http://publications.naturalengland.org.uk/file/83001

Table 2: Species recorded at each location in the SJM Ecology report

Location in SJM report	1	2	3	4	5	6	7	Number of records
Spear-leaved orache					x	x		2
Grass-leaved orache	x			x	x	x	x	5
Sea purslane	x			x				2
Sea Mayweed							x	1
Sea Beet		x			x	x	x	4
Rock samphire		x						1
Annual sea blite		x					x	2
Sea Couch	x		?	x		x	x	4

2.1.2 Review of the Solent Maritime SAC citation and supporting description of its shingle qualifying feature

The Solent Maritime SAC is designated for ten Annexe 1 habitats as qualifying features of the SAC. These include PVSB and AVDL. The 2015 Standard Data Form for the SAC states that, for AVDL:

- The data quality is poor.
- The representivity of the habitat is Significant.
- The habitat occupies less than 2% of the site. The area of habitat for AVDL and PVSB is listed as 112.43 ha for both habitats. This figure is likely to be a combined total for all shingle vegetation as the two communities often form intricate mosaics. The approximate area of habitat in locations 2-7 is < 0.08 ha
- The habitat is in a Good state of conservation. The global significance of the habitat is significant.

2.1.3 Conclusion

Table 3: Assignment of habitat type by Flag Ecology following review

Location	Assignment following review
1	Flag Ecology described this as sandy shingle, from distance. Using the SJM report it does not meet the definition of AVDL or PVSB. Likely to be saltmarsh.
2	Flag Ecology described this as vegetated shingle. A view of SJM's photograph 2 taken in August 2018 confirms that this is AVDL, although a small area of habitat.
3	Flag Ecology described this as vegetated shingle. The SJM habitat description in August 2018 confirms that this is AVDL, although a small area of habitat.
4	Flag Ecology did not see any vegetation on this site and did not list it as vegetated shingle. Photograph 1 in the SJM report confirms that this is a small area of AVDL.
5	This is AVDL habitat on a shingle spit between stands of SM24 and SM14 vegetation. The habitat extends from the spit to a very narrow strip running along the edge of the sea wall.
6	This is AVDL. SJM's photograph 7 taken in August 2018 shows the extent of the AVDL vegetation in summer (sea beet being the only species noted in December 2018).
7	Flag Ecology did not see shingle vegetation here in late December 2018. However, from the habitat description recorded by SJM in August 2018, this appears to have supported AVDL rather than a saltmarsh community.

2.2 Consultation with Natural England

Natural England were consulted throughout the duration of the project through email correspondence and a teleconference on 15/01/2021. Their involvement was important to confirm the proposed methodology, provide clarification of type of habitat present at the Solent Maritime SAC and to discuss the study findings and confirmation of conclusions and proposed actions.

Following the Flag Ecology review (summarised in Section 2.1), Natural England sought confirmation of the following point:

Were there any areas surveyed by Flag Ecology or that can be interpreted from the SJM Ecology report, that have a realistic chance of developing into PVSB in the foreseeable future (especially at Locations 2, 3 and 4)?

Flag Ecology provided a response[9] summarised as follows:

- There was not enough shingle at Langstone Harbour to deliver the sort of stable shingle habitat for nutrient-sensitive PVSB: it was all low-lying, close to the sea and prone to inundation by high tides, so Flag Ecology believes nutrient-risk is low.
- Specifically, at locations 2 – 4 the shingle was of very small extent, accreted in a zone between a slipway and wall and the intertidal habitat. The low height of the shingle made inundation at high tide likely, and as a result the plant communities were AVDL.
- None of the areas had classic examples of pioneer PVSB. What perennial vegetation was present tended to consist of saltmarsh species that can cope with nutrient-rich conditions.

Table 4 shows the confirmed final assignment of habitat types at specified locations within Solent Maritime SAC.

[9] Review of disparities between two coastal vegetation survey reports relevant to the Havant Council Local Plan Air Quality HRA - Supplementary question, Flag Ecology, 13/01/2021

Table 4: Final assignment of habitat types at specified locations

Location	Final assignment	Explanation
1	Saltmarsh	Location does not meet the definition of AVDL or PVSB
2 – 4	AVDL	At locations 2 – 4 the shingle was of limited extent, accreted in a zone between a slipway and wall and the intertidal habitat. The narrow width and low height of the shingle made inundation by very high tides likely, and as a result the plant communities recorded by SJM Ecology were AVDL.
5	AVDL	At location 5, a relatively small and narrow shingle spit, the shingle ridge appeared higher than in the other areas, but even so, the SJM Ecology survey recorded AVDL species and saltmarsh species, not conventional early successional PVSB.
6 & 7	AVDL	Locations 6 and 7 were again very narrow, sandwiched between the intertidal zone and concrete walls and although the shingle was slightly higher than locations 2 – 4 it was still likely to be subject to occasional inundation and the shingle would be regarded as AVDL rather PVSB.

2.3 Conclusion

Following a review of the two reports and consultation with Coastal Partners, the Council's Ecologist and Natural England, we conclude that all areas of vegetated shingle previously assigned on a precautionary basis as PVSB should be classified as Annual Vegetation of Drift Lines (AVDL). In light of this reclarification, it is necessary to revisit the HRA process to ensure that the site was appropriately assessed. This is set out in Section 3.

3 Updated HRA of Solent Maritime SAC

The following sections provide an updated HRA assessment for Solent Maritime SAC and Section 3.9 of the original HRA,[10] following the reclarification of the type of habitats present, as described in Section 2.

3.1 HRA Stage 1: Assessment of air quality impacts against screening thresholds

The HRA concluded that on the basis of the available evidence, including dispersion modelling results, background concentrations or deposition rates, and the characteristics of the habitat, adverse effects from acid deposition, airborne NOx and airborne NH_3 on Solent Maritime SAC should be discounted. These conclusions are still valid and therefore this section focusses on the potential adverse impacts from nitrogen deposition.

Table 5 summarises all of the critical loads for nutrient nitrogen deposition (kgN/ha-year) applicable to Solent Maritime SAC.

Table 5: Minimum Critical Load and Critical Level (CL) values and associated sensitive features for Solent Maritime SAC

Sensitive feature	Minimum nutrient nitrogen deposition CLs (kgN/ha-year)
Perennial vegetation of stony banks	8
Shifting dunes along the shoreline with *Ammophila arenaria* ("white dunes")	10
Estuaries	20
Coastal lagoons	20
Salicornia and other annuals colonizing mud and sand	20
Spartina swards (*Spartinion maritimae*)	20
Atlantic salt meadows (*Glauco-Puccinellietalia maritimae*)	20
Sandbanks which are slightly covered by sea water all the time	Not sensitive
Mudflats and sandflats not covered by seawater at low tide	No data
Annual vegetation of drift lines	Not sensitive
Vertigo moulinsiana - Desmoulin`s whorl snail	No data

[10] Air Quality Habitats Regulations Assessment for Havant Borough Council, Ricardo Energy & Environment, 21/01/2019

Consideration of in-combination effects

The Solent Maritime designated site is contained within the Partnership for South Hampshire (PfSH) study area. The dispersion modelling results of the Havant Do Minimum (DM) scenario account for air quality impacts associated with road traffic emissions from the Havant Local Plan in isolation. The dispersion modelling results of the PfSH DM scenario account for in-combination air quality impacts associated with road traffic emissions from the anticipated development in East Hampshire (part), Eastleigh, Fareham, Gosport, Havant, Isle of Wight, New Forest, Portsmouth, Southampton, Test Valley (part), and Winchester (part) up to 2034. As previously discussed, the original HRA pre-dated proposals to introduce a CAZ in Portsmouth. The potential for in-combination impacts from the Portsmouth CAZ is therefore assessed in Section 4 of this report.

Screening results

Table 6 and Table 7 compare the maximum modelled contribution of the Havant DM Scenario and PfSH DM Scenario, respectively, to the lowest applicable CL listed in Table 5. Within the Havant HRA study area, this designated site is mainly characterized by marine habitats with short vegetation and the grassland deposition rates are applicable.

Values highlighted in yellow exceed the 1% screening threshold. This screening exercise represents a precautionary approach, as it assumes that the most sensitive qualifying features (with the lowest CLs) are present in the areas with the highest modelled contribution (typically adjacent to the busiest road).

Nitrogen deposition levels exceeded the 1% screening threshold for both the Havant DM Scenario and the PfSH DM Scenario. On the basis of available evidence and agreed thresholds, likely significant effects from air quality impacts cannot be ruled-out, either for the Havant Local Plan in isolation or in-combination with anticipated development from neighbouring local authorities (the PfSH DM Scenario). Therefore, a Stage 2 Appropriate Assessment has been undertaken in the following section.

Table 6: Screening results based on dispersion modelling of Havant DM Scenario:

Pollutant	Deposition type*	Minimum CL	Maximum modelled contribution	% of CL
Nutrient nitrogen deposition (kgN/ha-year)	Grassland	8	0.197	2.5%

*This designated site is mainly characterized by marine habitats with short vegetation and the grassland deposition rates are applicable.

Table 7: Screening results based on dispersion modelling of PUSH DM Scenario:

Pollutant	Deposition type	Minimum CL	Maximum modelled contribution	% of CL
Nutrient nitrogen deposition (kgN/ha-year)	Grassland	8	3.6	45%

3.2 HRA Stage 2: Appropriate Assessment

3.2.1 Nitrogen deposition

Figure 2 illustrates the areas where the modelled contributions from the PUSH DM and Havant DM scenarios are predicted to exceed 0.08 kgN/ha/yr (1% of the lowest CL).

Summary of critical loads:

The lowest Critical Loads listed on APIS are listed for potential impacts to the following qualifying features of the Solent Maritime SAC:

- 8 to 15 kgN/ha/yr for Perennial vegetation of stony banks (PVSB)
- 10 to 20 kgN/ha/yr for Shifting dunes along the shoreline with *Ammophila arenaria* (“white dunes”)

A higher CL of 20 to 30 applies for the qualifying features of the other designations (SPA/Ramsar) such as birds and their associated habitats, for example Dark-bellied brent goose.

Figure 2 Overview of screening results for nitrogen deposition at Solent Maritime SAC, assuming grassland deposition rates

Further analysis:

For those areas predicted to exceed the 1% screening threshold (with a CL of 8), APIS indicates that the current background nitrogen deposition ranges from 12.37 to 14.15 kgN/ha/yr. The model results in Table 7 predict that the highest contribution from the PUSH DM scenario is 3.6 kgN/ha/yr. The worst-case total predicted deposition rate, assuming a background deposition rate of 14.15 kgN/ha/yr and a PUSH DM contribution of 3.6 kgN/ha/yr, is 17.75 kgN/ha/yr. This is below 20 kgN/ha/yr, and based on this analysis, we can conclude that there will not be an adverse effect on areas of the designated site where a CL of 20 is applicable. Additionally, site survey work carried out in December 2018 did not identify any sand dunes within the areas predicted to exceed the screening thresholds. As such, the remaining assessment for nitrogen deposition in Solent Maritime is focused on potential impacts to vegetated shingle habitat (i.e. PVSB and AVDL).

Based on the new evidence presented in Section 2 of this report, it can be concluded that the areas of vegetated shingle present in the areas predicted to exceed should be identified as AVDL. According to APIS (Table 5), AVDL is not sensitive to nitrogen deposition and therefore adverse effects from this pollutant type can be confidently ruled out.

On the basis of available evidence, it can therefore be concluded that there are no adverse effects on Solent Maritime SAC site arising from increased nitrogen deposition associated with either the HBLP either alone or in combination, and therefore no mitigation is required.

4 Potential in-combination effects from the Portsmouth CAZ

As previously discussed, the original HRA report pre-dated proposals to introduce a Clean Air Zone (CAZ) in Portsmouth. This section investigates potential in-combination impacts from the Portsmouth CAZ through review of the Local Plan Air Quality Modelling Report (AQ3)[11] submitted by Portsmouth City Council (PCC) as part of the Full Business Case in December 2020.

The report provided by PCC contained a comparison of NO_2 concentrations at receptors with modelled (or near) exceedances in the 2022 Baseline and the refined CAZ B scenarios at the Full Business Case stage.

Modelled NO_2 concentrations were reported for the major road links going in and out of Portsmouth and included a location on the A2030 Eastern Road Water Bridge.

The modelled NO_2 concentrations reported for all of the CAZ B scenarios in Table 6-3 and Table 6-6 of that report were either lower than or equal to the Future Baseline concentrations reported in Table 6-3 at all of the specified receptors. For reference, the concentration at the A2030 receptor is 0.4 µg/m^3 lower for the 'JAQU-approved Alternative Package Small Area CAZ B + Parking + Signals' scenario than the Baseline. It is therefore concluded that the CAZ appears to have no negative effect in terms of increasing vehicle emissions, and it therefore cannot act in combination with effects from Havant.

Therefore, based on the assessment of the best available data, it can be concluded that the nitrogen load/levels experienced at European sites in the Havant model domain would either decrease or remain constant under the CAZ. On that basis, there would be no in-combination effect to screen.

5 Conclusion

The main conclusions of this report can be summarised as follows:

- An apparent disparity was identified between two reports relating to the interpretation of vegetation communities on seven small areas of coastal habitat on the margins of Langstone Harbour, part of the Solent Maritime SAC.
- Following a review of the two reports and consultation with Coastal Partners, the Council's Ecologist and Natural England, it was concluded that all areas of vegetated shingle previously tentatively assigned by Ricardo as PVSB were in fact AVDL.
- In light of the habitat type clarification, this report revisited the HRA process to ensure that the site was appropriately assessed.
- On the basis of available evidence, it was concluded that there are no adverse effects on the SAC (or any other European site) arising from increased nitrogen deposition associated with either the HBLP alone or in combination, and therefore no mitigation is required for nitrogen deposition.
- Potential in-combination impacts from the Portsmouth CAZ were investigated through review of the Local Plan Air Quality Modelling Report (AQ3) submitted by PCC as part of the Full Business Case in December 2020.
- Based on the assessment of the best available data, it was concluded that the nitrogen load/levels experienced by European sites would either decrease or remain the same under the CAZ such that there would be no in-combination effect to assess.

.

[11] Local Plan Air Quality Modelling Report (AQ3), Portsmouth City Council, December 2020

T: +44 (0) 1235 753000

E: enquiry@ricardo.com

W: ee.ricardo.com