

APPENDIX 8.1 AIR QUALITY: Detailed Ecological Sites Screening

Screening Step 1

In this step, the maximum PC within each designated ecological site is compared with the most stringent Critical Level or Critical Load present anywhere in UK. Results of this step are presented in Table 1.49 and show that following designated ecological sites experience PCs >1% (PC > 10% of CL for short term impacts, PC > 100% of CL for non-statutory sites), and are therefore taken forward into Step 2 screening:

- Banhaw, Spring and Blackthorns Woods SSSI for nutrient nitrogen and acid deposition;
 - Alder Wood and Meadow SSSI for acid deposition;
 - River Ise and Meadows SSSI for acid deposition;
 - Collyweston Great Wood and Easton Hornstocks SSSI for acid deposition;
 - Eye Brook Reservoir SSSI for acid deposition;
 - Wadenhoe Marsh and Achurch Meadow SSSI for acid deposition;
 - Glapthorn Cow Pasture SSSI for nutrient nitrogen and acid deposition;
 - Geddington Chase SSSI for acid deposition;
 - Bulwick Meadows SSSI for nutrient nitrogen and acid deposition;
 - King's Cliffe Banks SSSI for acid deposition;
 - North Luffenham Quarry SSSI for acid deposition;
 - Pipewell Woods SSSI for acid deposition;
 - Short Wood SSSI for nutrient nitrogen and acid deposition;
 - Seaton Meadows SSSI for nutrient nitrogen and acid deposition;
 - Wakerley Spinney SSSI for nutrient nitrogen and acid deposition;
 - Luffenham Heath Golf Course SSSI for acid deposition;
 - Weldon Park SSSI for nutrient nitrogen and acid deposition; and
 - Sudborough Green Lodge Meadows SSSI for acid deposition.
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Table 8.1 Results of Screening Step 1

Habitat Name	Ambient (% of CL)				Deposition (% of CL)		Proceed to Step 2?
	NO _x annual average	NO _x 24 hour average	SO ₂ annual average	NH ₃ annual average	Nutrient Nitrogen	Acid	
	PC	PC	PC	PC			
Brookfield Plantation LWS	1.2%	11%	0.91%	0.91%	4.8%	8.9%	NO
Brookfield Plantation Cutting LWS	0.54%	5.4%	0.41%	0.41%	2.2%	4.0%	NO
Corby Old Quarry Gullet LWS	3.5%	8.5%	2.6%	2.6%	14%	26%	NO
Corby Old Quarry Ponds LWS	3.6%	11%	2.7%	2.7%	14%	27%	NO
Corby Tunnel Quarries LWS	0.54%	5.4%	0.41%	0.41%	2.2%	4.0%	NO
Potential Wildlife Site PLWS	0.094%	2.8%	0.071%	0.071%	0.37%	0.69%	NO
Aldwincle Marsh SSSI	0.13%	0.83%	0.095%	0.095%	0.50%	0.93%	NO
Banhaw, Spring and Blackthorns Woods SSSI	0.37%	1.9%	0.28%	0.28%	1.5%	2.7%	YES
Alder Wood and Meadow SSSI	0.19%	1.1%	0.14%	0.14%	0.75%	1.4%	YES
River Ise and Meadows SSSI	0.23%	1.4%	0.17%	0.17%	0.91%	1.7%	YES
Cranford St John SSSI	0.081%	0.67%	0.061%	0.061%	0.32%	0.60%	NO
Collyweston Great Wood and Easton Hornstocks SSSI	0.16%	0.77%	0.12%	0.12%	0.65%	1.2%	YES
Eye Brook Reservoir SSSI	0.15%	1.6%	0.11%	0.11%	0.59%	1.1%	YES
Eye Brook Valley Woods SSSI	0.11%	1.3%	0.081%	0.081%	0.43%	0.80%	NO
Wadenhoe Marsh and Achurch Meadow SSSI	0.16%	0.91%	0.12%	0.12%	0.64%	1.2%	YES
Glaphorn Cow Pasture SSSI	0.33%	1.4%	0.25%	0.25%	1.3%	2.4%	YES
Geddington Chase SSSI	0.22%	1.7%	0.17%	0.17%	0.88%	1.6%	YES
Bulwick Meadows SSSI	0.49%	2.0%	0.37%	0.37%	2.0%	3.6%	YES
King's Cliffe Banks SSSI	0.22%	1.0%	0.17%	0.17%	0.87%	1.6%	YES
North Luffenham Quarry SSSI	0.18%	0.84%	0.13%	0.13%	0.69%	1.3%	YES
Pipewell Woods SSSI	0.21%	1.6%	0.16%	0.16%	0.83%	1.5%	YES

Habitat Name	Ambient (% of CL)				Deposition (% of CL)		Proceed to Step 2?
	NO _x annual average	NO _x 24 hour average	SO ₂ annual average	NH ₃ annual average	Nutrient Nitrogen	Acid	
	PC	PC	PC	PC			
Wing Water Treatment Works SSSI	0.13%	0.61%	0.094%	0.094%	0.50%	0.92%	NO
Short Wood SSSI	0.28%	0.88%	0.21%	0.21%	1.1%	2.0%	YES
Stoke & Bowd Lane Woods SSSI	0.12%	1.2%	0.091%	0.091%	0.48%	0.89%	NO
Seaton Meadows SSSI	0.32%	1.3%	0.24%	0.24%	1.3%	2.3%	YES
Twywell Gullet SSSI	0.091%	1.1%	0.068%	0.068%	0.36%	0.67%	NO
Wakerley Spinney SSSI	0.26%	1.6%	0.19%	0.19%	1.0%	1.9%	YES
Luffenham Heath Golf Course SSSI	0.21%	1.4%	0.16%	0.16%	0.83%	1.5%	YES
Weldon Park SSSI	0.78%	2.9%	0.58%	0.58%	3.09%	5.7%	YES
Allextion Wood SSSI	0.086%	0.89%	0.065%	0.065%	0.34%	0.63%	NO
Sudborough Green Lodge Meadows SSSI	0.20%	1.3%	0.15%	0.15%	0.79%	1.5%	YES
Upper Nene Valley Gravel Pits SSSI	0.14%	1.1%	0.10%	0.10%	0.54%	0.999%	NO
Southfield Farm Marsh SSSI	0.098%	0.8%	0.073%	0.073%	0.39%	0.72%	NO
Rutland Water SSSI	0.13%	0.66%	0.099%	0.099%	0.52%	0.97%	NO
Upper Nene Valley Gravel Pits SPA & Ramsar	0.14%	1.1%	0.10%	0.10%	0.54%	0.999%	NO
Rutland Water SPA & Ramsar	0.13%	0.66%	0.099%	0.099%	0.52%	0.97%	NO

Note 1: no features presented on APIS

Screening Step 2

For those sites screened in after Step 1, the maximum PC within each designated ecological site is compared with the Critical Level or Critical Load and baseline for the most sensitive feature present within the ecological site.

Table 1.48 shows that only Weldon Park SSSI experiences PCs >1% and PECs > 70% (PC>100% of CL for non-statutory sites) and this only for acid deposition, and is therefore taken forward to Step 3 screening.

Table 8.2 Results of Screening Step 2

Habitat Name	Deposition (% of CL)				Proceed to Step 3?
	Nutrient Nitrogen		Acid		
	PC	PEC	PC	PEC	
Banhaw, Spring and Blackthorns Woods SSSI	0.29%	196%	0.67%	125%	No
Alder Wood and Meadow SSSI			0.14%	43%	No
River Ise and Meadows SSSI			0.57%	231%	No
Collyweston Great Wood and Easton Hornstocks SSSI			0.30%	125%	No
Eye Brook Reservoir SSSI			Note 1	Note 1	No
Wadenhoe Marsh and Achurch Meadow SSSI			0.31%	131%	No
Glaphorn Cow Pasture SSSI	0.26%	203%	0.61%	132%	No
Geddington Chase SSSI			0.087%	30%	No
Bulwick Meadows SSSI	0.23%	122%	0.19%	34%	No
King's Cliffe Banks SSSI			0.076%	30%	No
North Luffenham Quarry SSSI			0.061%	31%	No
Pipewell Woods SSSI			0.37%	132%	No
Short Wood SSSI	0.22%	191%	0.53%	130%	No
Seaton Meadows SSSI	0.11%	93%	0.23%	65%	No
Wakerley Spinney SSSI	0.20%	183%	0.46%	118%	No
Luffenham Heath Golf Course SSSI			0.083%	35%	No
Weldon Park SSSI	0.62%	213%	1.4%	137%	Yes
Sudborough Green Lodge Meadows SSSI			0.076%	33%	No

Note 1: Not sensitive to acid deposition

Screening Step 3

In this step, the maximum contribution of the project within each designated ecological site (remaining after screening step 2) is compared with the feature specific Critical Level or Critical Load and baseline levels present within the ecological site. Results of this step are presented in Table 1.49 and show that the only feature in Weldon Park SSSI is broad-leaved, mixed and yew woodland (more specifically Unmanaged Broadleaved/Coniferous Woodland). The maximum PC for acid deposition predicted in Weldon Park is 1.4% of the low range CL, with a PEC of 137% of the low range CL. It is therefore taken forward to Step 4 screening.

Table 8.3 Results of Screening Step 3

Habitat name	Feature	CL (keq ha ⁻¹ yr ⁻¹)			Baseline (keq ha ⁻¹ yr ⁻¹)		PC (keq ha ⁻¹ yr ⁻¹)		PCtotal	PECTotal
		LOW Range (Min ...)			S	N	Total S	Total N	as % of	as % of
		CLmaxS	CLminN	CLmaxN					CL total	CL total
Weldon Park SSSI	Broad-leaved, mixed and yew woodland	1.665	0.214	1.879	0.27	2.28	0.0198	0.00660	1.41%	137%

Screening Step 4

In this step, the contribution of the project at each receptor within the designated ecological site is compared with the feature specific Critical Level or Critical Load and baseline levels present within the ecological site. Results of this step show that the PC for acid deposition predicted throughout Weldon Park exceeds 1% of the low range CL, with the PEC at each receptor point exceeding 100% of the low range CL. Further consideration of the potential for Likely Significant Effect is therefore discussed in the ecological assessment.