In Parliament – Session 2021 - 2022

HS2

High Speed Rail (Crewe – Manchester)

Background information and data

Ecology and biodiversity

BID EC-007-00001_Part 2

Ecological baseline data - amphibian and pond and canal surveys - Part 2 of 2

M120

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Department for Transport

High Speed Two (HS2) Limited has been tasked by the Department for Transport (DfT) with managing the delivery of a new national high speed rail network. It is a non-departmental public body wholly owned by the DfT.

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3 Pond and canal survey

3.1 Methodology

3.1.1 Details of the standard methodology used for pond and canal surveys are provided in the Technical Note - Ecology and biodiversity - Ecological Field Survey Methods and Standard (FSMS) included in the Environmental Impact Assessment Scope and Methodology Report (SMR) (see Environmental Statement, Volume 5, Appendix CT-001-00001)[1]. Ponds were scoped in for surveys where they reside within the land required for construction of the Proposed Scheme, or within a 100m buffer of this land.

3.1.2 Survey methodology followed a tiered system from high to low detail, based upon the anticipated value of the resource, the proximity of the resource to the land required, and the potential for impacts. The most detailed survey is the National Pond Survey (NPS), followed by Predictive System for Multimetrics (PSYM) and then by Rapid Assessment (RA) protocols. PSYM and NPS methods collect detailed macro-invertebrate, macrophyte, chemical and physical data, whereas the RA method only includes survey of macro-invertebrates to family level. Of the three methods, the NPS protocol involved the greatest survey effort, comprising three separate visits, detailed site information and macro-invertebrates identified to species level for most groups, while PSYM requires only a single visit and family level macro-invertebrate identification.

3.1.3 Use of the NPS method was limited to ponds with the most diverse and/or notable flora, where it was considered that they could not be adequately assessed using PSYM. Ponds not threatened with loss, and where only minor effects are predicted, were recommended for the RA method.

3.1.4 Ponds were initially identified from review of Ordnance Survey and aerial mapping data through the pond selection process used for amphibian survey. The appropriate level of pond survey was based on information provided by the Habitat Suitability Index data gathered during the amphibian surveys, or detail from Phase 1 habitat survey or scoping surveys and site photographs (see Phase 1 survey in Background Information and Data: BID-EC-002-000).

[1] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement, Environmental Impact Assessment Scope and Methodology Report*, Volume 5, Appendix CT-001-00001. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

3.1.5 No specific desk study records relating to ponds and canals were obtained in support of these surveys. However, the land required for the Proposed Scheme in Hough to Walley's Green area (MA01) overlaps with the land required for the Proposed Scheme in Phase 2a (community area 5, South Cheshire). The HS2 Phase 2a Environmental Statement[2] was reviewed for detail on ponds and canals within the land required for construction of the Proposed Scheme in Phase 2b, or within a 100m buffer.

3.1.6 PSYM outputs were provided by the Freshwater Habitats Trust, formerly Pond Conservation Trust.

3.1.7 A summary of locations at which pond and canal surveys were undertaken within MA01 to MA08 is provided in Table 41 to Table 42, and shown in accompanying Ecology Map Series EC-11. Due to access changing throughout the year, and different surveys requiring access at different times in the year, some RA or PSYM surveys may have been conducted where amphibian surveys were not and vice versa. This may result in some inconsistencies between the relevant sections of this report.

3.1.8 Specific macrophyte (aquatic plant) species recorded have been reviewed against the relevant checklists/rare plant register: The Vascular Plant Red Data List for Great Britain, Species of Principal Importance in England, and the Cheshire VC58 Rare Plant Register to review status from a local perspective.

3.1.9 Map Series EC-11 (Ecology Map Book) shows the locations of the ponds and canals that were subject to field survey. These include a total of 138 ponds and three canals requiring PSYM and 147 ponds requiring RA. None of the surveyed ponds were considered to be of sufficient value or diversity to require survey using NPS methods and were adequately assessed using PSYM. As a result, no NPS results are presented.

Table 41: Summary of completed Rapid Assessment surveys undertaken

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH589878_L16026_PS1_Pond25_110619	Pond25	Pond	11 June 2019	MA01	2m south
Multiple_L4179_PS1_Pond826_131020	Pond826	Pond	14 October 2020	MA01	58m north
CH179051_L4887_PS1_Pond31_1	Pond31	Pond	13 October 2020	MA01	85m east

[2] High Speed Two Ltd (2017), High Speed Rail (West Midlands - Crewe), *Environmental Statement*, *Background Information and Data, Ecology and biodiversity*, Ecological baseline data - amphibian and pond and canal surveys (BID-EC-007-000). Available online at: https://www.gov.uk/government/collections/hs2-phase-2a-environmental-statement.

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
41020					
Multiple_L7796_PS1_Pond32_141020	Pond32	Pond	14 October 2020	MA01	24m south
Multiple_L16277_PS1_Pond917_131020	Pond917	Pond	14 October 2020	MA01	62m north
Multiple_L5490_PS1_Pond33_141020	Pond33	Pond	14 October 2020	MA01	45m south
Multiple_L5490_PS1_Pond36_141020	Pond36	Pond	15 October 2020	MA01	15m east
Multiple_L5490_PS1_Pond38_141020	Pond38	Pond	15 October 2020	MA01	1m south
Multiple_L5318_PS1_Pond3992_151020	Pond3992	Pond	15 October 2020	MA01	17m north-west
Multiple_L5318_PS1_Pond4124_151020	Pond4124	Pond	15 October 2020	MA01	35m north-west
Multiple_L5165_PS1_Pond919_151020	Pond919	Pond	10 November 2020	MA01	77m south-west
Multiple_L5335_PS1_Pond52_151020	Pond52	Pond	14 October 2020	MA01	83m east
CH643381_L5856_PS1_Pond67_101120	Pond67	Pond	13 October 2020	MA02	44m south-west
CH426012_L5892_Pond91 SJ6890364335	Pond91	Pond	20 October 2020	MA02	56m east
CH426012_L5892_PS1_Pond93_050919	Pond93	Pond	5 September 2019	MA02	2m east
U200977_L6099_PS1_Pond97_050919	Pond97	Pond	5 September 2019	MA02	89m south
CH446575_L6259_PS1_Pond100_050919	Pond100	Pond	5 September 2019	MA02	3m east
Multiple_L5292_PS1_Pond910_05	Pond910	Pond	5 September 2019	MA02	8m north

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
0929					
CH512447_L5343_PS1_Pond832_201020	Pond832	Pond	20 October 2020	MA02	16m north
CH512447_L5343_PS1_Pond104_201020	Pond104	Pond	20 October 2020	MA02	45m north
CH512447_L5343_PS1_Pond105_201020	Pond105	Pond	20 October 2020	MA02	1m south
CH614901_L5388_PS1_Pond1519_031120	Pond1519	Pond	3 November 2020	MA02	89m south-west
CH285924_L5811_PS1_Pond142_180918	Pond142	Pond	18 September 2018	MA02	15m west
CH614475_L5372_PS1_Pond145_041120	Pond145	Pond	4 November 2020	MA02	69m south-east
CH614475_L5372_PS1_Pond149_041120	Pond149	Pond	4 November 2020	MA02	6m north-east
CH649829_L5391_PS1_Pond151_041120	Pond151	Pond	4 November 2020	MA02	34m west
CH455213_L6066_PS1_Pond156_041120	Pond156	Pond	4 November 2020	MA02	87m east
CH449387_L6086_PS1_Pond201_190918	Pond201	Pond	19 September 2018	MA02	10m west
Multiple_L5935_PS1_Pond204_261120	Pond204	Pond	26 November 2020	MA02	20m south-east
Multiple_L5498_PS1_Pond210_111120	Pond210	Pond	11 November 2020	MA03	60m south-east
Multiple_L5498_PS1_Pond217_111120	Pond217	Pond	11 November 2020	MA03	76m east
Multiple_L5498_PS1_Pond218_111120	Pond218	Pond	11 November 2020	MA03	26m north-west
Multiple_L5498_PS1_Pond219_11	Pond219	Pond	11 November 2020	MA03	22m east

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
1120					
Multiple_L5498_PS1_Pond220_111120	Pond220	Pond	11 November 2020	MA03	66m south-east
CH568445_L8292_PS1_Pond226_121120	Pond226	Pond	12 November 2020	MA03	23m west
Multiple_L6271_PS1_Pond234_121120	Pond234	Pond	12 November 2020	MA03	28m west
Multiple_L6271_PS1_Pond239_121120	Pond239	Pond	12 November 2020	MA03	22m west
Multiple_L5492_PS1_Pond242_121120	Pond242	Pond	12 November 2020	MA03	90m west
Multiple_L5306_PS1_Pond246_020719	Pond246	Pond	2 July 2019	MA03	66m west
Multiple_L5363_PS1_Pond254_301019	Pond254	Pond	30 October 2019	MA03	11m east
Multiple_L5363_PS1_Pond255_301019	Pond255	Pond	30 October 2019	MA03	84m west
Multiple_L5363_PS1_Pond257_301019	Pond257	Pond	30 October 2019	MA03	1m west
Multiple_L5363_PS1_Pond259_121120	Pond259	Pond	12 November 2020	MA03	76m north
Multiple_L5363_PS1_Pond260_121120	Pond260	Pond	12 November 2020	MA03	64m north
Multiple_L5782_PS1_Pond261_121120	Pond261	Pond	12 November 2020	MA03	83m east
Multiple_L5252_PS1_Pond265_131120	Pond265	Pond	13 November 2020	MA03	25m north-east
Multiple_L5408_PS1_Pond266_131120	Pond266	Pond	13 November 2020	MA03	23m west
CH561651_L5408_Pond268_1906	Pond268	Pond	19 June 2018	MA03	28m east

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
18					
Multiple_L5902_PS1_Pond270_311019	Pond270	Pond	30 October 2019	MA03	23m north
CH171520_L5891_PS1_Pond276_301019	Pond276	Pond	30 October 2019	MA03	56m north-west
CH614145_L5942_PS1_Pond837_040729	Pond837	Pond	4 July 2019	MA03	52m north
Multiple_L5321_PS1_Pond970_131120	Pond970	Pond	13 November 2020	MA03	16m south-west
Multiple_L5408_PS1_Pond280_131120	Pond280	Pond	13 November 2020	MA03	96m north-west
Multiple_L5321_PS1_Pond969_131120	Pond969	Pond	13 November 2020	MA03	17m south
Multiple_L5486_PS1_Pond284_161120	Pond284	Pond	16 November 2020	MA03	42m east
Multiple_L5486_PS1_Pond285_161120	Pond285	Pond	16 November 2020	MA03	13m east
Multiple_L5408_PS1_Pond286_131120	Pond286	Pond	13 November 2020	MA03	10m west
CH145654_L5762_PS1_Pond292_311019	Pond292	Pond	31 October 2019	MA03	29m south
CH258462_L5350_PS1_Pond321_011019	Pond321	Pond	1 October 2019	MA03	45m west
CH258462_L5350_PS1_Pond322_011019	Pond322	Pond	1 October 2019	MA03	8m east
CH517829_L5350_PS1_Pond323_011019	Pond323	Pond	1 October 2019	MA03	16m east
CH517829_L6291_PS2_Pond328_040719	Pond328	Pond	4 July 2019	MA03	40m east
CH517829_L6301_PS1_Pond864_	Pond864	Pond	1 October 2019	MA03	46m south

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
011019					
U206247_L5466_PS1_Pond381_241120	Pond381	Pond	24 November 2020	MA03	9m east
U200981_L6103_PS1_Pond384_241120	Pond384	Pond	24 November 2020	MA03	37m west
CH614513_L9023_PS1_Pond385_241120	Pond385	Pond	24 November 2020	MA03	69m east
Multiple_L5396_PS1_Pond1798_241120	Pond1798	Pond	24 November 2020	MA03	22m west
Multiple_L5396_PS1_Pond1797_241120	Pond1797	Pond	24 November 2020	MA03	8m west
Multiple_L5262_PS1_Pond391_241120	Pond391	Pond	24 November 2020	MA03	6m south-east
CH441843_L4797_PS1_Pond394_120718	Pond394	Pond	12 July 2018	MA03	1m west
Multiple_L5365_PS1_Pond399_251120	Pond399	Pond	25 November 2020	MA03	3m west
CH177427_L5250_PS2_Pond438_170719	Pond438	Pond	17 July 2019	MA03	2m west
U201059_L6248_PS1_Pond1482_081019	Pond1482	Pond	8 October 2019	MA03	66m south
Multiple_L5389_PS1_Pond1180_251120	Pond1180	Pond	25 November 2020	MA03	83m north
Multiple_L5389_PS1_Pond1179_251120	Pond1179	Pond	25 November 2020	MA03	99m north
Multiple_L5389_PS1_Pond1346_251120	Pond1346	Pond	25 November 2020	MA03	5m north
CH328686_L6950_PS1_Pond1181_081019	Pond1181	Pond	8 October 2019	MA03	91m south
CH499369_L5248_PS1_Pond1208	Pond1208	Pond	25 November 2020	MA03	47m south-east

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
_251120					
CH499369_L5248_PS1_Pond496_251120	Pond496	Pond	25 November 2020	MA03	84m south-east
CH396059_L7064_PS1_Pond1348_081019	Pond1348	Pond	8 October 2019	MA03	53m north
CH409597_L6036_PS1_Pond510_171719	Pond510	Pond	17 July 2018	MA03	8m west
CH272833_L5181_PS1_Pond512_091019	Pond512	Pond	9 October 2019	MA03	70m south
CH158997_L6060_PS1_Pond901_261120	Pond901	Pond	26 November 2020	MA03	27m west
CH351483_L5849_PS1_Pond547_270918	Pond547	Pond	27 September 2018	MA04	16m east
Multiple_L5970_PS1_Pond553_011020	Pond553	Pond	1 October 2020	MA04	5m north
Multiple_L5831_PS1_Pond565_250719	Pond565	Pond	25 July 2019	MA04	1m west
Multiple_L6038_PS1_Pond609_161019	Pond609	Pond	16 October 2019	MA04	3m west
Multiple_L10058_PS1_Pond1610_161019	Pond1610	Pond	16 October 2019	MA04	92m east
Multiple_L6095_PS1_Pond614_300719	Pond614	Pond	30 July 2019	MA04	18m south-east
Multiple_L6060_PS1_Pond539_011020	Pond539	Pond	1 October 2020	MA04	68m west
Multiple_L7070_PS1_Pond1260_171019	Pond1260	Pond	17 October 2019	MA05	92m south
U207207_L4856_PS1_Pond895_290920	Pond895	Pond	29 September 2020	MA05	97m west
CH510589_L5485_PS1_Pond638_	Pond638	Pond	3 October 2018	MA05	16m south

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
031018					
U2009895_L6110_PS1_Pond680_171019	Pond680	Pond	17 October 2019	MA05	2m south
CH609697_L5845_PS1_Pond681_230920	Pond681	Pond	23 September 2020	MA05	8m north
CH96746_L5938_PS1_Pond682_230920	Pond682	Pond	23 September 2020	MA05	31m east
Multiple_L5357_PS1_Pond695_100919	Pond695	Pond	10 September 2019	MA05	6m east
Multiple_L5357__PS1_Pond696_310719	Pond696	Pond	22 September 2020	MA05	12m west
Multiple_L5357_PS1_Pond697_310719	Pond697	Pond	31 July 2019	MA05	54m north-west
CH380494_L5230_PS1_Pond699_101019	Pond699	Pond	10 October 2019	MA05	61m north-west
CH380494_L5230_PS1_Pond707_100919	Pond707	Pond	10 September 2019	MA05	9m west
CH526376_L5770_PS1_Pond711_100919	Pond711	Pond	10 September 2019	MA05	46m west
CH382722_L5132_PS1_Pond712_220920	Pond712	Pond	22 September 2020	MA05	34m west
Multiple_L5398_PS1_Pond716_110919	Pond716	Pond	11 September 2019	MA05	20m north-west
Multiple_L5398_PS1_Pond717_240718	Pond717	Pond	24 July 2018	MA05	40m north-west
CH422183_L4993_PS1_Pond724_220920	Pond724	Pond	22 September 2020	MA05	5m south
Multiple_L4843_PS1_Pond726_220920	Pond726	Pond	22 September 2020	MA05	45m north
Multiple_L5331_PS1_Pond728_17	Pond728	Pond	17 September 2020	MA05	69m west

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
0920					
Multiple_L5331_PS1_Pond729_170920	Pond729	Pond	17 September 2020	MA05	98m south
Multiple_L5398_PS1_Pond731_240718	Pond731	Pond	24 July 2018	MA05	2m south
MAN171798_L5909_PS1_Pond737_160920	Pond737	Pond	16 September 2020	MA05	93m west
GM886606_L5890_PS1_Pond889_110919	Pond889	Pond	11 September 2019	MA05	32m south
GM785913_L5199_PS1_Pond762_010818	Pond762	Pond	1 August 2018	MA05	24m west
GM194689_L5121_PS1_Pond768_120919	Pond768	Pond	12 September 2019	MA05	10m north
GM705836_L5109_PS1_Pond769_160920	Pond769	Pond	16 September 2020	MA05	45m east
Multiple_L5121_PS1_Pond770_170920	Pond770	Pond	17 September 2020	MA05	22m south
GM705836_L5109_PS1_Pond771_160920	Pond771	Pond	16 September 2020	MA05	42m south
Multiple_L5256_PS1_Pond775_150920	Pond775	Pond	15 September 2020	MA05	2m south
Multiple_L21164_PS1_Pond886_011018	Pond886	Pond	2 October 2018	MA05	2m west
MAN44131_L5134_PS1_Pond777_150920	Pond777	Pond	15 September 2020	MA05	2m south
MAN44131_L5134_PS1_Pond778_120919	Pond778	Pond	12 September 2019	MA05	1m east
GM587528_L5868_PS1_Pond799_201020	Pond799	Pond	20 October 2020	MA05	66m east
Multiple_L5050_PS1_Pond888_20	Pond888	Pond	20 October 2020	MA05	1m north

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
1020					
GM707354_L5233_PS1_Pond802_061020	Pond802	Pond	6 October 2020	MA05	65m east
GM707354_L5233_PS1_Pond804_061020	Pond804	Pond	6 October 2020	MA05	48m east
GM707354_L5233_PS1_Pond805_061020	Pond805	Pond	6 October 2020	MA05	2m east
GM707354_L5233_PS1_Pond809_601020	Pond809	Pond	6 October 2020	MA05	2m west
Multiple_L6100_PS1_Pond813_221020	Pond813	Pond	22 October 2020	MA05	18m east
Multiple_L5332_PS1_Pond822_221020	Pond822	Pond	22 October 2020	MA05	49m south-east
Multiple_L5332_PS1_Pond881_221020	Pond881	Pond	22 October 2020	MA05	12m north
Multiple_L5908_PS1_Pond825_260919	Pond825	Pond	26 September 2019	MA05	27m east
CH480792_L5149_PS1_Pond425_211020	Pond425	Pond	21 October 2020	MA06	25m west
CH480792_L5149_PS1_Pond1801_211020	Pond1801	Pond	21 October 2020	MA06	61m south
CH561505_L5425_PS1_Pond431_081020	Pond431	Pond	8 October 2020	MA06	68m west
CH561505_L5425_PS1_Pond434_081020	Pond434	Pond	8 October 2020	MA06	92m south
CH561505_L5425_PS1_Pond457_101019	Pond457	Pond	10 October 2019	MA06	59m east
Multiple_L5040_PS1_Pond459_221019	Pond459	Pond	22 October 2019	MA06	6m north
Multiple_L6097_PS1_Pond460_23	Pond460	Pond	23 October 2019	MA06	71m west

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
1019					
Multiple_L6097_PS1_Pond462_231019	Pond462	Pond	23 October 2019	MA06	90m west
Multiple_L6097_PS1_Pond463_231019	Pond463	Pond	23 October 2019	MA06	87m west
Multiple_L6097_PS1_Pond473_211020	Pond473	Pond	21 October 2020	MA06	86m west
Multiple_L6082_PS1_Pond872_151019	Pond872	Pond	15 October 2019	MA06	24m west
Multiple_L6082_PS1_Pond493_151019	Pond493	Pond	15 October 2019	MA06	32m west
Multiple_L6082_PS1_Pond502_151019	Pond502	Pond	15 October 2019	MA06	18m south
CH363792_L5852_PS1_Pond509_071020	Pond509	Pond	7 October 2020	MA06	47m south
CH325341_L5032_PS1_Pond511_071020	Pond511	Pond	7 October 2020	MA06	78m west
Multiple_L5157_PS1_Pond545_151019	Pond545	Pond	15 October 2019	MA07	81m east

Table 42: Summary of completed PSYM surveys undertaken

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH88142_L16182_PS2_PS2_Pond24	Pond24	Pond	11 June 2019	MA01	Within
CH88142_L16182_PS2_Pond27_110619	Pond27	Pond	11 June 2019	MA01	Within
Multiple_L16143_PS2_Pond902_110619	Pond902	Pond	11 June 2019	MA01	Within
Multiple_L16143_PS2_Pond903_110619	Pond903	Pond	11 June 2019	MA01	Within

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH615624_L16133_PS2_Pond905_110619	Pond905	Pond	11 June 2019	MA01	Within
CH615624_L16133_PS2_Pond28_130618	Pond28	Pond	13 June 2018	MA01	Within
CH230277_L5895_PS2_Pond29_310718	Pond29	Pond	31 July 2018	MA01	Within
CH597265_L5956_PS2_Pond34_120619	Pond34	Pond	12 June 2019	MA01	Within
Multiple_L5490_PS2_Pond35_220720	Pond35	Pond	22 July 2020	MA01	Within
Multiple_L5142_PS2_Pond1546_220720	Pond1546	Pond	22 July 2020	MA01	Adjacent, south-west
Multiple_L5490_PS2_Pond39_220720	Pond39	Pond	22 July 2020	MA01	Within
Multiple_L5318_PS2_Pond40_220720	Pond40	Pond	22 July 2020	MA01	Within
Multiple_L5318_PS2_Pond42_220720	Pond42	Pond	22 July 2020	MA01	Within
Multiple_L5490_PS2_Pond43_220720	Pond43	Pond	22 July 2020	MA01	Within
Multiple_L5228_PS2_PS2_Pond44_180918	Pond44	Pond	18 September 2018	MA01	Within
Multiple_L5379_PS2_Pond51_130619	Pond51	Pond	13 June 2019	MA01	Within
Multiple_L5379_PS2_Pond54_130619	Pond54	Pond	13 June 2019	MA01	Within
Multiple_L5165_PS2_PS2_Pond918_041919	Pond918	Pond	4 September 2019	MA01	Within
Multiple_L5339_PS2_Pond60_140618	Pond60	Pond	14 June 2018	MA01	Within
Multiple_L5339_PS2_Pond62_230720	Pond62	Pond	23 July 2020	MA01	Within
Multiple_L5339_PS2_Pond63_140618	Pond63	Pond	14 June 2018	MA01	Within
Multiple_L5409_PS2_Pond66_130619	Pond66	Pond	13 June 2019	MA02	Within
CH628338_L15879_PS2_Pond904_230720	Pond904	Pond	23 July 2020	MA02	Within
CH556853_L5320_PS2_Pond73_120618	Pond73	Pond	12 June 2018	MA02	Within
CH452896_L5416_PS2_PS2_Pond76_130618	Pond76	Pond	13 June 2018	MA02	Within

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH452896_L5416_PS2_Pond84_130618	Pond84	Pond	13 June 2018	MA02	Within
CH452896_L5416_PS2_Pond85_130618	Pond85	Pond	13 June 2018	MA02	Within
Multiple_L5394_PS2_Pond87_230720	Pond87	Pond	23 July 2020	MA02	Within
CH574826_L5257_PS2_Pond1608_230720	Pond1608	Pond	23 July 2020	MA02	Adjacent, north-west
Multiple_L6089_PS2_Pond98_130618	Pond98	Pond	13 June 2018	MA02	Within
Multiple_L5292_PS2_Pond830_130619	Pond830	Pond	13 June 2019	MA02	Within
Multiple_L5292_PS2_Pond102_130619	Pond102	Pond	13 June 2019	MA02	Within
Multiple_L5021_PS2_Pond127_120618	Pond127	Pond	12 June 2018	MA02	Within
Multiple_L5021_PS2_PS2_Pond130_120618	Pond130	Pond	12 June 2018	MA02	Within
Multiple_L5171_PS2_Pond133_270720	Pond133	Pond	27 July 2020	MA02	Within
CH614475_L5372_PS2_Pond140_140618	Pond140	Pond	14 June 2018	MA02	Within
Multiple_L5238_PS2_Pond141_140618	Pond141	Pond	14 June 2018	MA02	Within
CH614475_L5372_PS2_PS2_Pond143_140618	Pond143	Pond	14 June 2018	MA02	Within
Multiple_L5152_PS2_PS2_Pond146_200618	Pond146	Pond	20 June 2018	MA02	Within
Multiple_L5391_PS2_Pond155_190618	Pond155	Pond	19 June 2018	MA02	Within
Multiple_L6083_PS2_Pond159_250619	Pond159	Pond	25 June 2019	MA02	Within
CH505004_L6247_PS2_Pond168_270720	Pond168	Pond	27 July 2020	MA02	Within
Multiple_L4863_PS2_Pond171_190618	Pond171	Pond	19 June 2018	MA02	Within
CH505004_L5424_PS2_PS2_Pond173_190618	Pond173	Pond	19 June 2018	MA02	Within
CH557156_L5489_PS2_Pond1471_270619	Pond1471	Pond	27 June 2019	MA02	Within
CH557156_L5489_PS2_Pond192_270619	Pond192	Pond	27 June 2019	MA02	Within

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH557156_L6270_PS2_Pond197_270619	Pond197	Pond	27 June 2019	MA02	Within
CH557156_L6270_PS2_Pond199_270619	Pond199	Pond	27 June 2019	MA02	Within
CH557156_L6270_PS2_Pond200_270619	Pond200	Pond	27 June 2019	MA02	Within
CH580519_L4715_PS2_Canal12_110718	Canal 12	Canal	11 July 2018	MA02	Within
Multiple_L4946_PS2_Canal10_110718	Canal 10	Canal	11 July 2018	MA02	Within
CH566710_L4935_PS2_Canal15_110718	Canal 15	Canal	11 July 2018	MA02	Within
CH568445_L5498_PS2_Pond208_200618	Pond208	Pond	20 June 2018	MA03	Within
CH568445_L5498_PS2_Pond209_200618	Pond209	Pond	20 June 2018	MA03	Within
CH568445_L5498_PS2_Pond222_210618	Pond222	Pond	21 June 2018	MA03	Within
CH568445_L5498_PS2_Pond224_210618	Pond224	Pond	21 June 2018	MA03	Within
CH568445_L5498_PS2_Pond225_210618	Pond225	Pond	21 June 2018	MA03	Within
CH568445_L5498_PS2_Pond227_210618	Pond227	Pond	21 June 2018	MA03	Within
Multiple_L6271_PS2_Pond240_280720	Pond240	Pond	28 July 2020	MA03	Within
Multiple_L5306_PS2_Pond244_280720	Pond244	Pond	28 July 2020	MA03	Within
Multiple_L5363_PS2_PS2_Pond262_020719	Pond262	Pond	2 July 2019	MA03	Within
CH561651_L5408_PS2_Pond274_190618	Pond274	Pond	19 June 2018	MA03	Within
Multiple_L10068_PS2_PS2_Pond310_140818	Pond310	Pond	14 August 2018	MA03	Within
CH258462_L5350_PS2_PS2_Pond880_040719	Pond880	Pond	4 July 2019	MA03	Within
CH517829_L6291_PS2_PS2_Pond336_010818	Pond336	Pond	1 August 2018	MA03	Within
CH517829_L6301_PS2_Pond1780_300720	Pond1780	Pond	30 July 2020	MA03	Within
CH517829_L6301_PS2_Pond1198_300720	Pond1198	Pond	30 July 2020	MA03	Within

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH517829_L6291_PS2_Pond343_010818	Pond343	Pond	1 August 2018	MA03	Within
CH517829_L6301_PS2_Pond1781_300720	Pond1781	Pond	30 July 2020	MA03	Within
CH517829_L6291_PS2_Pond345_010818	Pond345	Pond	1 August 2018	MA03	Within
CH517829_L6290_PS2_Pond348_040719	Pond348	Pond	4 July 2019	MA03	Within
CH517829_L6290_PS2_Pond350_040719	Pond350	Pond	4 July 2019	MA03	Within
CH517829_L6291_PS2_Pond879_010818	Pond879	Pond	1 August 2018	MA03	Within
CH517829_L6291_PS2_PS2_Pond877_020818	Pond877	Pond	2 August 2018	MA03	Within
CH517829_L6291_PS2_Pond361_020818	Pond361	Pond	2 August 2018	MA03	Within
Multiple_L6291_PS2_PS2_Pond359_160719	Pond359	Pond	16 July 2019	MA03	Within
Multiple_L6291_PS2_Pond368_160719	Pond368	Pond	16 July 2019	MA03	Within
CH517829_L6291_PS2_Pond372_100718	Pond372	Pond	10 July 2018	MA03	Within
CH547023_L5138_PS2_Pond378_160719	Pond378	Pond	16 July 2019	MA03	Within
CH547023_L5138_PS2_Pond380_160719	Pond380	Pond	16 July 2019	MA03	Within
CH547023_L5138_PS2_Pond382_160719	Pond382	Pond	16 July 2019	MA03	Within
Multiple_L21140_PS2_Pond386_120718	Pond386	Pond	12 July 2018	MA03	Within
CH474608_L5269_PS2_Pond392_120718	Pond392	Pond	12 July 2018	MA03	Within
Multiple_L5269_PS2_Pond406_120718	Pond406	Pond	12 July 2018	MA03	Within
CH474608_L5468_PS2_PS2_Pond411_170719	Pond411	Pond	17 July 2019	MA03	Within
CH177427_L5250_PS2_Pond436_170719	Pond436	Pond	17 July 2019	MA03	Within
CH177427_L5250_PS2_PS2_Pond437_310718	Pond437	Pond	31 July 2018	MA03	Within
CH177427_L5250_PS2_Pond440_040820	Pond440	Pond	4 August 2020	MA03	Adjacent, south

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L5788_PS2_Pond467_040820	Pond467	Pond	4 August 2020	MA03	Within
CH411235_L5912_PS2_Pond483_170718	Pond483	Pond	17 July 2018	MA03	Within
U203280_L5054_PS2_PS2_Pond499_170718	Pond499	Pond	17 July 2018	MA03	Within
Multiple_L5203_PS2_Pond505_210820	Pond505	Pond	21 August 2020	MA03	Within
Multiple_L5203_PS2_Pond508_210720	Pond508	Pond	21 July 2020	MA03	Within
Multiple_L5203_PS2_Pond1225_210720	Pond1225	Pond	21 July 2020	MA03	Within
Multiple_L5299_PS2_PS2_Pond531_170718	Pond531	Pond	17 July 2018	MA03	Within
Multiple_L5299_PS2_Pond533_210820	Pond533	Pond	21 August 2020	MA03	Within
MAN119953_L5966_PS2_Pond557_250719	Pond557	Pond	25 July 2019	MA04	Within
Multiple_L5473_PS2_Pond559_250719	Pond559	Pond	25 July 2019	MA04	Within
Multiple_L5178_PS2_Pond573_250719	Pond573	Pond	25 July 2019	MA04	Within
GM932657_L5178_PS2_Pond578_250719	Pond578	Pond	25 July 2019	MA04	Within
Multiple_L5473_PS2_Pond577_180818	Pond577	Pond	18 August 2018	MA04	Within
GM932657_L5178_PS2_PS2_Pond580_240719	Pond580	Pond	24 July 2019	MA04	Within
Multiple_L5934_PS2_Pond622_060820	Pond622	Pond	25 August 2020	MA04	Within
Multiple_L4513_PS2_PS2_Pond623_300719	Pond623	Pond	30 July 2019	MA05	Within
Multiple_L4513_PS2_PS2_Pond624_300719	Pond624	Pond	30 July 2019	MA05	Within
CH103951_L5080_PS2_PS2_Pond636_190718	Pond636	Pond	19 July 2018	MA05	Within
CH510589_L5485_PS2_Pond640_190718	Pond640	Pond	19 July 2018	MA05	Within
CH510589_L5095_PS2_Pond642_190718	Pond642	Pond	19 July 2018	MA05	Within
Multiple_L21169_PS2_Pond660_250820	Pond660	Pond	25 August 2020	MA05	Within

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L21169_PS2_Pond662_250820	Pond662	Pond	25 August 2020	MA05	Within
Multiple_L21169_PS2_Pond665_250820	Pond665	Pond	25 August 2020	MA05	Within
Multiple_L21169_PS2_Pond673_250820	Pond673	Pond	25 August 2020	MA05	Within
Multiple_L5938_PS2_Pond689_060820	Pond689	Pond	6 August 2020	MA05	Within
Multiple_L21191_PS2_PS2_Pond1614_310719	Pond1614	Pond	31 July 2019	MA05	Within
CH380494_L5230_PS2_Pond700_010819	Pond700	Pond	1 August 2019	MA05	Within
CH380494_L5230_PS2_Pond702_010819	Pond702	Pond	1 August 2019	MA05	Within
Multiple_L4997_PS2_Pond720_010819	Pond720	Pond	1 August 2019	MA05	Within
Multiple_L5398_PS2_PS2_Pond725_240718	Pond725	Pond	24 July 2018	MA05	Within
Multiple_L5398_PS2_PS2_Pond730_110919	Pond730	Pond	11 September 2019	MA05	Within
GM785913_L5199_PS2_PS2_Pond761_010818	Pond761	Pond	1 August 2018	MA05	Within
Multiple_L4943_PS2_Pond765_050820	Pond765	Pond	5 August 2020	MA05	Within
Multiple_L5134_PS2_Pond1615_050820	Pond1615	Pond	5 August 2020	MA05	Within
Multiple_L5134_PS2_Pond779_050820	Pond779	Pond	5 August 2020	MA05	Within
MAN44131_L5134_PS2_Pond781_130819	Pond781	Pond	13 August 2019	MA05	Within
GM917075_L5298_PS2_Pond794_260820	Pond794	Pond	26 August 2020	MA05	Within
GM917075_L5298_PS2_Pond796_260820	Pond796	Pond	26 August 2020	MA05	Within
GM917075_L5298_PS2_Pond797_260820	Pond797	Pond	26 August 2020	MA05	Within
Multiple_L6100_PS2_PS2_Pond812_150818	Pond812	Pond	15 August 2018	MA05	Within
Multiple_L6100_PS2_Pond814_060820	Pond814	Pond	6 August 2020	MA05	Within
Multiple_L5332_PS2_Pond819_060820	Pond819	Pond	6 August 2020	MA05	Within

Ecology survey code	Survey site name	Feature type and survey type	Survey date(s)	CA	Approximate distance from the land required for the construction of the Proposed Scheme (m) and orientation
CH594233_L5342_PS2_PS2_Pond433_230719	Pond433	Pond	23 July 2019	MA06	Within
GM742096_L5884_PS2_PS2_Pond992_170718	Pond992	Pond	17 July 2018	MA06	Within
GM742096_L5884_PS2_Pond993_170718	Pond993	Pond	17 July 2018	MA06	Within
Multiple_L5884_PS2_Pond1786_210720	Pond1786	Pond	21 July 2020	MA06	Within
CH561486_L5494_PS2_PS2_Pond482_101019	Pond482	Pond	10 October 2019	MA06	Within
Multiple_L5045_PS2_Pond485_240719	Pond485	Pond	24 July 2019	MA06	Within
CH561486_L5494_PS2_Pond495_230719	Pond495	Pond	23 July 2019	MA06	Within
CH561486_L5494_PS2_PS2_Pond500_230719	Pond500	Pond	23 July 2019	MA06	Within
GM506853_L43411_PS2_Pond528_240820	Pond528	Pond	24 August 2020	MA06	Within
GM506853_L43411_PS2_Pond529_240820	Pond529	Pond	24 August 2020	MA06	Within
GM79805_L5213_PS2_PS2_Pond530_240719	Pond530	Pond	24 July 2019	MA06	Within

3.2 Deviations, constraints and limitations

3.2.1 Screening for the pond habitat methodologies described above was dependent on access availability and detail provided within Phase 1 habitat survey and/or amphibian survey, from Habitat Suitability Index assessment.

3.2.2 Deviations from the methodology occurred as a result of seasonal constraints. For example, the number or timing of seasonal visits for the ponds surveyed using the PYSM method was dependent upon the time at which access became available for survey, and the receipt of initial survey data from either Phase 1 habitat survey or amphibian survey that identified the need for this detailed method.

3.2.3 Seven canal PSYM surveys were identified: the Trent and Mersey Canal at two crossing locations, the Shropshire Union Canal, the Manchester Ship Canal, the Bridgewater Canal, the Leeds and Liverpool Canal and Ashton Canal. Lack of access to the Manchester Ship Canal, the Bridgewater Canal, the Leeds and Liverpool Canal and Ashton Canal restricted survey at these locations. All canal PSYM survey sites are within the land required for the construction of the Proposed Scheme. No canal habitats have currently been identified as requiring RA or NPS.

3.2.4 Ponds and canals occurring within the land required for the construction of the Proposed Scheme in the interface area of MA01 and HS2 Phase 2a South Cheshire community area are reported within the HS2 Phase 2a Environmental Statement and Additional Provisions and Supplementary Environmental Statements[3] (and associated assessments).

3.2.5 Table 43 below identifies those ponds where the requirement for survey was identified but not undertaken.

Table 43: Summary of locations where requirement for pond and canal survey was identified but no access available for survey

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Pond4002 SJ6735451642	Pond4002 3m^2, shaded pond near motorway	RA	MA01	12m south
Pond4016 SJ6734851642	Pond4016 21m^2, open pond on field boundary	RA	MA01	5m east
Pond4123 SJ6752151693	Pond4123 63m^2, open garden pond	RA	MA01	49m east
Pond3684 SJ7068452613	Pond3684 686m^2, shaded pond near motorway	RA	MA01	49m south
Pond3685 SJ7078052644	Pond3685 384m^2, shaded pond near motorway	RA	MA01	19m south
Pond3633 SJ7253853059	Pond3633 725m^2, shaded pond near motorway	RA	MA01	54m east
Pond3634 SJ7228353292	Pond3634 5305m^2, open pond near motorway	RA	MA01	17m west
Pond14 SJ7170853668	Pond14 405m^2, shaded pond in woodland and scrub	RA	MA01	26m west
Pond15 SJ7175853684	Pond15 164m^2, shaded pond in woodland and scrub	RA	MA01	30m west
Pond4120 SJ7166253920	Pond4120 480m^2, partially shaded pond in an industrial estate	RA	MA01	37m north
Pond4109 SJ7181954237	Pond4109 44m^2, shaded pond in an industrial	RA	MA01	81m east

[3] High Speed Two Ltd (2022), High Speed Rail (Crewe – Manchester), *Environmental Statement*. Available online at: https://www.gov.uk/government/collections/hs2-phase-2b-crewe-manchester-environmental-statement.

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	estate			
Pond4094 SJ6766055487	Pond4094 371m^2, open pond in residential area	RA	MA01	76m east
Pond4102 SJ6758256451	Pond4102 69m^2, drainage culvert under railway	PSYM	MA01	Adjacent, south
Pond4044 SJ6753656553	Pond4044 1497m^2, open fishing pond	RA	MA01	44m west
Pond3920 SJ6831856723	Pond3920 46m^2, open pond in an industrial estate	RA	MA01	32m west
Pond3758 SJ7144057123	Pond3758 113m^2, shaded garden pond	RA	MA01	24m west
Pond3759 SJ7137557150	Pond3759 525m^2, open pond on edge of residential area	PSYM	MA01	Adjacent, east
Pond3757 SJ7147457178	Pond3757 102m^2, shaded garden pond	RA	MA01	83m north
Pond3760 SJ7124857366	Pond3760 69m^2, open pond in grazed field	RA	MA01	99m south
CH246162_L15903_Pond18 SJ7024757498	Pond18 132m^2, shaded pond in copse	PSYM	MA01	Within
Multiple_L15994_Pond22 SJ7022757826	Pond22 93m^2, open pond in grazed field	RA	MA01	36m east
Multiple_L15994_Pond23 SJ7028157841	Pond23 30m^2, shaded pond on hedgerow between grazed field	RA	MA01	46m south
CH81069_L15765_Pond914 SJ7035758038	Pond914 78m^2, open pond in scrub	RA	MA01	1m east
CH81069_L15765_Pond1625 SJ7038458048	Pond1625 19m^2, shaded pond in yard	RA	MA01	28m east
Multiple_L8620_Pond1524 SJ6914658553	Pond154 168m^2, open pond near canal, borders railway line and arable fields	RA	MA01	90m west
Pond1520 SJ6922858677	Pond1520 23m^2, shaded garden pond next to road	RA	MA01	8m west
CH429910_L5864_Pond30 SJ6928558715	Pond30 59m^2, open pond in arable field	RA	MA01	51m west
Multiple_L5046_Pond909 SJ6940158740	Pond909 78m^2, shaded pond on field	RA	MA01	55m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	boundary			
Multiple_L7796_Pond912 SJ6926259054	Pond912 78m^2, open fishing pond	RA	MA01	95m west
Multiple_L7796_Pond37 SJ6918859179	Pond37 167m^2, open pond near industrial estate	RA	MA01	98m south
CH597265_L8247_Pond1104 SJ7033759181	Pond1104 46m^2, shaded pond on field boundary	RA	MA01	83m west
Multiple_L4769_Pond908 SJ6980459400	Pond908 78m^2, open pond on field boundary	RA	MA01	81m east
Multiple_L4769_Pond907 SJ6967859410	Pond907 78m^2, possible dry pond on hedgerow between two arable fields	PSYM	MA01	Within
U202129_L16948_Pond1117 SJ6890059473	Pond1117 284m^2, open pond in arable field	RA	MA01	73m south
U202129_L16948_Pond1116 SJ6895759539	Pond1116 22 m^2, pond on field boundary	PSYM	MA01	Adjacent, west
Multiple_L4769_Pond906 SJ6972259545	Pond906 78m^2, possible dry pond on hedgerow between two arable fields	RA	MA01	40m east
Multiple_L5142_Pond1545 SJ6863859659	Pond1545 94m^2, shaded pond on field boundary	PSYM	MA01	Adjacent, north-west
Pond3884 SJ6817059822	Pond3884 313m^2, open pond in grazed field	RA	MA01	88m west
Multiple_L5228_Pond45 SJ6914860114	Pond45 602m^2, shaded pond in woodland	RA	MA01	25m north
Multiple_L5228_Pond46 SJ6914860148	Pond46 464m^2, shaded pond in woodland	RA	MA01	15m west
Multiple_L3649_Pond47 SJ6962260155	Pond47 333m^2, partially shaded pond in copse	RA	MA01	33m west
Multiple_L3649_Pond48 SJ6962560189	Pond48 373m^2, shaded pond on field boundary	RA	MA01	56m west
Multiple_L3649_Pond50 SJ6953760334	Pond50 567m^2, partially shaded pond in an industrial site	RA	MA01	21m east
Multiple_L3649_Pond4015 SJ6949360835	Pond4015 59m^2, open pond on field boundary	PSYM	MA01	Adjacent, north

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L3649_Pond4014 SJ6950560860	Pond4014 41m^2, open pond on field boundary	RA	MA01	34m west
Multiple_L3649_Pond4000 SJ6951660872	Pond4000 28m^2, open pond on field boundary	RA	MA01	48m east
Multiple_L4986_Pond58 SJ6910961171	Pond58 452m^2, open pond in arable field	RA	MA01	12m east
Multiple_L5245_Pond59 SJ6889061247	Pond59 547m^2, partially shaded pond in grazed field next to railway line	PSYM	MA01	Within
Multiple_L5245_Pond64 SJ6857261584	Pond64 360m^2, open pond in arable field	RA	MA01	67m south
Multiple_L5245_Pond65 SJ6862361743	Pond65 854m^2, open pond in centre of grazed field	RA	MA01	24m west
CH453851_L5487_Pond68 SJ6910462283	Pond68 266m^2, open pond in arable field	RA	MA02	80m east
CH453851_L5487_Pond70 SJ6889962297	Pond70 401m^2, open pond in large arable field	RA	MA02	8m east
CH453851_L5487_Pond69 SJ6892262300	Pond69 128m^2, open pond in large arable field	RA	MA02	33m east
Multiple_L5366_Pond71 SJ6822262331	Pond71 205m^2, open pond in arable field adjacent to farm	RA	MA02	94m east
Multiple_L5366_Pond72 SJ6835862392	Pond72 183m^2, open pond adjacent to farm yard	RA	MA02	73m south
CH466826_L5769_Pond74 SJ6907162586	Pond74 76m^2, open garden pond	RA	MA02	51m east
CH254101_L5706_Pond1794 SJ6903362615	Pond1794 7m^2, garden pond	RA	MA02	7m east
CH556853_L5320_Pond75 SJ6893762633	Pond75 243m^2, partially shaded and fenced pond in centre of grazed field	PSYM	MA02	Within
Multiple_L5366_Pond77 SJ6828362905	Pond77 218m^2, open pond in grazed field	PSYM	MA02	Within
Multiple_L15832_Pond923 SJ6908762947	Pond923 78m^2, shaded pond in garden	RA	MA02	14m east
CH516790_L5022_Pond78 SJ6891662989	Pond78 308m^2, open pond in grazed field	PSYM	MA02	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH452896_L5416_Pond 79 SJ6886063026	Pond79 597m^2, open pond in grazed field	PSYM	MA02	Within
CH452896_L5416_Pond 80 SJ6873863081	Pond80 860m^2, open pond in grazed field	PSYM	MA02	Within
Multiple_L5354_Pond8 1 SJ6909663291	Pond81 246m^2, shaded pond in arable field	RA	MA02	92m east
CH452896_L5334_Pond 1006 SJ6788863303	Pond1006 1106m^2, fenced pond adjacent to farm yard and track	RA	MA02	19m east
CH452896_L5416_Pond 83 SJ6877863332	Pond83 383m^2, open pond in grazed field	PSYM	MA02	Within
CH452896_L5334_Pond 827 SJ6806463512	Pond827 899m^2, fenced and partially shaded pond	RA	MA02	14m west
CH568808_L5404_Pond 86 SJ6896263670	Pond86 446m^2, shaded pond on boundary of arable field and road	RA	MA02	13m east
Multiple_L5340_Pond1 061 SJ6786963717	Pond1061 276m^2, pond in arable field	PSYM	MA02	Within
Multiple_L5340_Pond8 28 SJ6794663774	Pond828 592m^2, open pond in grazed field	PSYM	MA02	Within
CH487718_L5394_Pond 89 SJ6871964164	Pond89 1020m^2, shaded pond in small area of woodland	PSYM	MA02	Within
CH487718_L5394_Pond 90 SJ6873064188	Pond90 150m^2, shaded pond in small area of woodland	PSYM	MA02	Within
CH574826_L5257_Pond 1609 SJ6795364304	Pond1609 814m^2, uniform pond in arable field next to railway line	RA	MA02	40m west
Pond1787 SJ6878264750	Pond1787 110m^2, open garden pond	RA	MA02	9m south
Multiple_L8253_Pond9 5 SJ6819864785	Pond95 215m^2, open garden pond	RA	MA02	7m north
Multiple_L8253_Pond9 6 SJ6820964796	73m^2, shaded pond on boundary of field	RA	MA02	26m north
CH405623_L15878_Pon d922 SJ6805364980	Pond922 78m^2, shaded pond next to canal	RA	MA02	29m west
CH446575_L6259_Pond 4113 SJ6863664982	Pond4113 1022m^2, open pond in grazed field	PSYM	MA02	Within
Multiple_L5333_Pond8	Pond846	PSYM	MA02	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
46 SJ6811464982	223m^2, shaded pond next to canal			
Multiple_L5333_Pond101 SJ6814364985	Pond101 369m^2, shaded pond in grazed field next to canal	PSYM	MA02	Within
Multiple_L5333_Pond99 SJ6815764991	Pond99 152m^2, shaded pond next to canal	PSYM	MA02	Within
CH449513_L5886_Pond103 SJ6875565178	Pond103 164m^2, shaded pond on field boundary	RA	MA02	48m east
Multiple_L5284_Pond921 SJ6894965432	Pond921 78m^2, shaded garden pond	RA	MA02	79m east
CH203954_L5382_Pond106 SJ6867665743	Pond106 1383m^2, uniform pond in farm yard, possible slurry pit	RA	MA02	1m west
CH203954_L5382_Pond107 SJ6850465916	Pond107 1278m^2, open pond on field boundary of grazed field	PSYM	MA02	Within
CH5202_L5381_Pond108 SJ6882865974	Pond108 342m^2, shaded pond in strip of scattered trees along field boundary	RA	MA02	3m west
CH203954_L5382_Pond911 SJ6854066007	Pond911 78m^2, open pond in centre of grazed field	PSYM	MA02	Within
CH5202_L5381_Pond109 SJ6890866221	Pond109 82m^2, shaded pond on field boundary	RA	MA02	16m south
Multiple_L5373_Pond1053 SJ6914066289	Pond1053 420m^2, open, garden pond	RA	MA02	77m east
CH534861_L5355_Pond112 SJ6819866673	Pond112 414m^2, artificial pond in farm yard	RA	MA02	67m west
Pond113 SJ6818366717	Pond113 962m^2, artificial pond in farm yard	RA	MA02	82m west
CH612701_L5243_Pond853 SJ6923566842	Pond853 126m^2, open pond in farmyard	RA	MA02	81m north
Multiple_L5456_Pond1019 SJ6765567056	Pond1019 49m^2, heavily shaded pond in strip of woodland between grazed field	RA	MA02	6m east
Multiple_L5456_Pond1014 SJ6766467066	Pond1014 150m^2, heavily shaded pond in strip of woodland between grazed field	RA	MA02	1m west
Multiple_L5456_Pond1009 SJ6765067069	Pond1009 86m^2, heavily shaded pond in strip	RA	MA02	6m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	of woodland between grazed field			
Multiple_L5456_Pond1016 SJ6764867081	Pond1016 108m^2, heavily shaded pond in strip of woodland between grazed field	RA	MA02	3m west
Multiple_L5405_Pond114 SJ6826867405	Pond114 580m^2, open pond in grazed field	RA	MA02	26m south
Multiple_L5405_Pond115 SJ6877267636	Pond115 329m^2, shaded pond on field boundary	RA	MA02	65m south
Multiple_L5405_Pond116 SJ6875067663	Pond116 236m^2, shaded pond on field boundary	RA	MA02	38m south
Multiple_L5474_Pond1788 SJ6811767869	Pond1788 19m^2, shaded pond in woodland	RA	MA02	84m west
Multiple_L5405_Pond118 SJ6854867871	Pond118 985m^2, fenced pond in arable field	RA	MA02	15m north
Multiple_L22111_Pond120 SJ6801068097	Pond120 792m^2, partially shaded pond in woodland	RA	MA02	33m south
Multiple_L22105_Pond121 SJ6789968242	Pond121 437m^2, shaded pond in woodland	RA	MA02	40m west
Multiple_L5531_Pond1538 SJ6744068316	Pond1538 2995m^2, pond in country estate	RA	MA02	22m south
Multiple_L5429_Pond1021 SJ6766568513	Pond1021 613m^2, artificial pond in farm, possibly slurry pit	RA	MA02	37m west
Multiple_L5021_Pond124 SJ6869968996	Pond124 512m^2, open pond in arable field	RA	MA02	83m east
Multiple_L5021_Pond125 SJ6841769027	Pond125 107m^2, open pond in grazed field	PSYM	MA02	Within
Multiple_L5021_Pond126 SJ6841469045	Pond126 200m^2, shaded pond in island of woodland in grazed field	PSYM	MA02	Within
Pond1715_L11184_SJ7317069437	Pond1715 546m^2	RA	MA02	95m west
Pond1694_L11208_SJ7256969472	Pond1694 63m^2	RA	MA02	23m south
Pond1691 SJ7284069477	Pond1691 922m^2, partially shaded pond in woodland	RA	MA02	23m south
Multiple_L5021_Pond8	Pond836	RA	MA02	75m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
36 SJ6848969697	173m^2, partially shaded pond in grazed field			
Pond1698_L11208_SJ7249069855	Pond1698 521m^2, partially shaded pond in grazed field	RA	MA02	7m south
Pond1727_L11132_SJ7316970013	Pond1727 510m^2, partially shaded pond in woodland	RA	MA02	89m west
Pond1726_L11132_SJ7317870030	Pond1726 141m^2, partially shaded pond in woodland	RA	MA02	92m west
Multiple_L5206_Pond137 SJ6856570050	Pond137 3252m^2, open pond in grazed field	RA	MA02	18m south
Multiple_L3699,L5208,L6543,L17952_Pond139 SJ6874070329	Pond139 1971m^2, partially shaded pond adjacent to railway line and track in the corner of arable field	RA	MA02	12m south
CH614475_L44091_Pond150 SJ6798570812	Pond150 574m^2, shaded garden pond	RA	MA02	3m west
Multiple_L5391_Pond152 SJ6861670983	Pond152 285m^2, shaded pond on hedgerow boundary of two fields	RA	MA02	80m east
Pond153 SJ6886070992	Pond153 1404m^2, open pond in grazed field	RA	MA02	25m south
CH610789_L17923,L17957,L44090,L5372_Pond154 SJ6808471042	Pond154 31278m^2, open pond next to canal	RA	MA02	16m west
Multiple_L5344_Pond936 SJ6841271534	Pond936 256m^2, open pond in grassland	RA	MA02	15m west
Multiple_L5411_Pond160 SJ6906971549	Pond160 158m^2, shaded pond on field boundary	RA	MA02	44m west
Multiple_L5411_Pond1088 SJ6908771552	Pond1088 129m^2, shaded pond on field boundary	RA	MA02	26m west
Multiple_L5411_Pond1087 SJ6910471553	Pond1087 205m^2, shaded pond on field boundary	RA	MA02	9m west
CH505004_L5424_Pond937 SJ6941271572	Pond937 368m^2, open pond in arable field	RA	MA02	77m east
CH575521_L17914_Pond1069 SJ6818471603	Pond1069 111m^2, Canal barge dock	RA	MA02	100m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH575521_L17914_Pond1068 SJ6823671645	Pond1068 131m^2, Canal barge dock	RA	MA02	28m west
Multiple_L6340_Pond162 SJ6883471647	Pond162 237m^2, shaded pond on field boundary	RA	MA02	75m west
CH575521_L17914_Pond1067 SJ6818071679	Pond1067 16379m^2, Canal barge dock	RA	MA02	25m west
Multiple_L5411,L45542, L47503_Pond1811 SJ7004371728	Pond1811 219m^2, shaded pond on arable field boundary with road	PSYM	MA02	Adjacent, west
CH575521_L17914_Pond945 SJ6820571732	Pond945 Small, open pond next to canal	RA	MA02	73m west
CH575521_L17914_Pond1070 SJ6824771782	Pond1070 72m^2, Canal barge dock	RA	MA02	27m west
CH575521_L17914_Pond1064 SJ6822371783	Pond1064 65m^2, Canal barge dock	RA	MA02	54m west
CH505004_L6247_Pond944 SJ6893171852	Pond944 139m^2, open pond in grassland	RA	MA02	22m east
Pond1810 SJ7024271886	Pond1810 605m^2, shaded pond in grazed field	RA	MA02	56m south
CH505004_L6247_Pond164 SJ6899671908	Pond164 188m^2, shaded pond on field boundary	RA	MA02	19m west
CH505004_L6247_Pond165 SJ6898471919	Pond165 252m^2, shaded pond on field boundary	RA	MA02	24m west
Multiple_L5153_Pond166 SJ6870671933	Pond166 118m^2, open pond in possible wetland next to industrial site	PSYM	MA02	Within
Multiple_L5153_Pond167 SJ6868971955	Pond167 104m^2, open pond in possible wetland next to industrial site	PSYM	MA02	Within
Multiple_L5153_Pond4496 SJ6872571966	Pond4496 559m^2, open pond in pasture field	PSYM	MA02	Within
CH403450_L5271_Pond169 SJ6835872026	Pond169 4333m^2, open pond near industrial estate	RA	MA02	98m north
CH505004_L5424_Pond170 SJ6921472163	Pond170 646m^2, partially shaded pond on field boundary	RA	MA02	12m south
CH505004_L5424_Pond858 SJ6945272277	Pond858 129m^2, partially shaded pond in	RA	MA02	64m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	arable field adjacent to road			
Multiple_L4863_Pond172 SJ6883872443	Pond172 710m^2, uniform pond next to farm yard, possible slurry pit	PSYM	MA02	Within
Multiple_L5351_Pond174 SJ6891972701	Pond174 132m^2, partially shaded pond on field boundary	PSYM	MA02	Within
Multiple_L5351_Pond175 SJ6902372856	Pond175 748m^2, open pond in centre of arable field	PSYM	MA02	Within
Multiple_L5390,L45530_Pond3365 SJ7052573007	Pond3365 285m^2, shaded pond on road and field boundary	PSYM	MA02	Adjacent, south-east
Multiple_L5427_Pond176 SJ6938773008	Pond176 165m^2, shaded pond on field boundary	PSYM	MA02	Within
Multiple_L5422,L47524_Pond3496 SJ7027773048	Pond3496 97m^2, shaded pond on field and road boundary	PSYM	MA02	Adjacent, west
Multiple_L5422_Pond3388 SJ7011673080	Pond3388 304m^2, open pond in grazed field	RA	MA02	4m south
Multiple_L5427_Pond3151 SJ6978773085	Pond3151 666m^2, partially shaded pond on field boundary	RA	MA02	36m south
Pond3498 SJ7027473089	Pond3498 91m^2, shaded pond on field boundary	RA	MA02	20m north
Multiple_L5351_Pond177 SJ6909373116	Pond177 263m^2, uniform and open pond in centre of arable field	PSYM	MA02	Within
Pond3382 SJ7017473116	Pond3382 177m^2, shaded garden pond	RA	MA02	16m north
Pond3389 SJ7053373139	Pond3389 328m^2, shaded pond in grazed field	RA	MA02	99m north
CH191603_L5878_Pond3383 SJ7011873208	Pond3383 209m^2, shaded pond on field boundary	RA	MA02	92m north
Multiple_L5427,L17611,L17712,L17718,L17719,L17756,L45526,L45527_Pond1095 SJ6972973301	Pond1095 612m^2, shaded garden pond	PSYM	MA02	Adjacent, south-east
Multiple_L4854_Pond1	Pond178	PSYM	MA02	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
78 SJ6913173391	200m^2, partially shaded pond in scattered trees between layby and road			
Multiple_L5387,L17832_Pond179 SJ6908873399	Pond179 360m^2, partially shaded pond in scattered trees between layby and road	PSYM	MA02	Within
Pond180 SJ6944073727	Pond180 69m^2, shaded garden pond	RA	MA02	10m east
Multiple_L5387_Pond3982 SJ6923673827	Pond3982 583m^2, shaded pond on field boundary	PSYM	MA02	Within
Multiple_L5495_Pond182 SJ6952773940	Pond182 426m^2, shaded pond on arable field boundary	PSYM	MA02	Within
CH506146_L6351_Pond181 SJ6928373948	Pond181 318m^2, shaded pond on arable field boundary	PSYM	MA02	Within
Pond3393 SJ7028074071	Pond3393 150m^2, shaded pond in grazed field	PSYM	MA02	Within
Pond1531 SJ7026074148	Pond1531 292m^2, shaded pond in grazed field	PSYM	MA02	Within
Multiple_L47237,L6352_Pond1100 SJ6977674296	Pond1100 478m^2, open and very uniform pond in farm yard, possible slurry pit	RA	MA02	15m east
Multiple_L5387_Pond183 SJ6903074318	Pond183 210m^2, shaded pond in grazed field	RA	MA02	6m east
CH506146_L6349_Pond184 SJ7006374396	Pond184 279m^2, open pond in arable field	RA	MA02	15m west
CH506146_L6349,L8926_Pond1532 SJ7034974405	Pond1532 181m^2, shaded pond on field boundary	PSYM	MA02	Within
CH506146_L6349_Pond185 SJ7020574501	Pond185 715m^2 pond on field boundary	PSYM	MA02	Within
Multiple_L5910,L6218_Pond927 SJ7041274519	Pond927 387m^2, open pond on edge of woodland	RA	MA02	14m east
CH506146_L6349_Pond186 SJ7004774545	Pond186 32m^2, pond on field boundary	RA	MA02	61m west
CH506146_L5091_Pond187 SJ6925574579	Pond187 3781m^2, waterbody in water works	RA	MA02	40m north
CH506146_L5091_Pond	Pond188	RA	MA02	90m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
188 SJ6935174589	4631m^2, waterbody in water works			
CH506146_L6349_Pond 189 SJ7018074647	Pond189 65m^2, uniform pond on field boundary with area of woodland	PSYM	MA02	Within
CH557156_L5489_Pond 190 SJ7004474812	Pond190 216m^2, shaded pond on boundary of arable fields	PSYM	MA02	Within
CH557156_L5489_Pond 191 SJ6999574830	Pond191 589m^2, shaded pond on boundary of arable fields	PSYM	MA02	Within
CH557156_L5489_Pond 193 SJ7000074875	Pond193 235m^2, shaded pond on boundary of arable fields	PSYM	MA02	Within
CH642162_L6070_Pond 948 SJ7057574908	Pond948 607m^2, partially shaded pond in woodland	RA	MA02	71m east
CH642162_L6070_Pond 1121 SJ7050874921	Pond1121 239m^2, shaded pond in woodland	RA	MA02	35m east
CH557156_L5489_Pond 194 SJ7024574988	Pond194 378m^2, open pond in centre of arable field	PSYM	MA02	Within
CH557156_L49018_Pon d195 SJ7004075021	Pond195 273m^2, shaded pond on boundary of arable fields	PSYM	MA02	Within
CH557156_L6270,L490 18_Pond198 SJ7031575123	Pond198 735m^2, shaded pond on boundary of arable fields	PSYM	MA02	Within
Multiple_L6086_Pond1 369 SJ6984475246	Pond1369 275m^2, open and uniform pond on boundary of arable fields in between two roads	RA	MA02	33m south
CH266073_L5818_Pond 202 SJ7049075374	Pond202 810m^2, shaded pond near residential area	RA	MA02	76m north
CH557156_L5325_Pond 203 SJ7003375556	Pond203 108m^2, partially shaded pond on arable field boundary	RA	MA02	14m west
Multiple_L5278_Pond2 07 SJ7078075989	Pond207 316m^2, open pond in arable field	RA	MA02	16m south
CH568445_L5498_Pond 211 SJ7052176321	Pond211 517m^2, shaded pond on field boundary	PSYM	MA03	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH568445_L5498_Pond212 SJ7038076404	Pond212 736m^2, shaded pond on field boundary	PSYM	MA03	Adjacent, north-west
CH568445_L5498_Pond216 SJ7057576509	Pond216 1137m^2, partially shaded pond in arable field	PSYM	MA03	Adjacent, east
Multiple_L8292_Pond231 SJ7064676993	Pond231 486m^2, shaded pond on boundary of arable field	PSYM	MA03	Within
Multiple_L8292,L5498_Pond233 SJ7056877041	Pond233 477m^2, shaded pond on boundary of arable field	PSYM	MA03	Within
Multiple_L8292,L5498_Pond236 SJ7059077063	Pond236 257m^2, shaded pond on boundary of arable field	PSYM	MA03	Within
Multiple_L5492_Pond237 SJ7088077144	Pond237 300m^2, shaded pond on field boundary	RA	MA03	87m east
Multiple_L5306_Pond241 SJ7050777292	Pond241 248m^2, shaded pond on boundary of arable field	RA	MA03	63m west
Pond1328 SJ7135677713	Pond1328 576m^2, shaded pond in woodland	RA	MA03	95m east
Multiple_L5363_Pond253 SJ7087877774	Pond253 395m^2, shaded pond in grazed field	RA	MA03	21m east
CH488019_L5881_Pond264 SJ7045978258	Pond264 199m^2, shaded garden pond	RA	MA03	1m west
CH488019_L5252,L5881_Pond267 SJ7035478326	Pond267 61m^2, shaded pond in arable field	PSYM	MA03	Within
Pond3523 SJ6878478376	Pond3523 686m^2, shaded pond on field boundary	RA	MA03	17m south
CH561651_L4704,L5899_Pond273 SJ7067678444	Pond273 126m^2, shaded pond in grazed field	PSYM	MA03	Within
CH614145_L5942_Pond975 SJ7018378510	Pond975 275m^2, open pond in arable field	RA	MA03	15m north
Pond3559 SJ6850978521	Pond3559 418m^2, open garden pond	RA	MA03	76m west
Multiple_L5321,L44478_Pond1149	Pond1149 1225m^2, partially shaded pond on	RA	MA03	50m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
SJ6987078651	field boundary			
Multiple_L5321_Pond971 SJ6976878733	Pond971 257m^2, shaded pond on field boundary	RA	MA03	25m south
Pond3602 SJ6915278764	Pond3602 164m^2, open pond in arable field	RA	MA03	86m west
CH561651_L5486_Pond281 SJ7073078777	Pond281 413m^2, shaded and fenced pond in centre of arable field	PSYM	MA03	Within
CH561651_L5486_Pond282 SJ7072278805	Pond282 226m^2, shaded and fenced pond in centre of arable field	PSYM	MA03	Within
CH561651_L5486_Pond283 SJ7073978813	Pond283 91m^2, shaded and fenced pond in centre of arable field	PSYM	MA03	Within
CH641530_L5496_Pond287 SJ7054779016	Pond287 174m^2, shaded pond in golf course	RA	MA03	67m west
CH145654_L5762,L6053,L6411_Pond288 SJ7088979029	Pond288 138m^2, shaded, garden pond	PSYM	MA03	Adjacent, south-east
CH641530_L5496_Pond290 SJ7069579068	Pond290 792m^2, partially shaded pond in golf course	RA	MA03	21m east
CH641530_L5496_Pond289 SJ7054779069	Pond289 72m^2, open pond in golf course	RA	MA03	87m west
CH641530_L5496_Pond291 SJ7058579075	Pond291 557m^2, shaded pond in golf course	RA	MA03	32m west
CH421059_L17921_Pond1321 SJ7007679110	Pond1321 116m^2, open pond in arable field	RA	MA03	27m east
CH421059_L17921,L46107_Pond1155 SJ6998779130	Pond1155 70m^2, shaded pond on field boundary	PSYM	MA03	Within
Pond2698 SJ6946779159	Pond2698 339m^2, shaded pond on field boundary	RA	MA03	47m north
Pond2658 SJ6943379169	Pond2658 228m^2, shaded pond on field boundary	RA	MA03	85m north
Pond2666 SJ6964279188	Pond2666 121m^2, shaded pond in arable field	RA	MA03	63m north
CH641530_L5496_Pond293 SJ7049579209	Pond293 275m^2, shaded pond in golf course	RA	MA03	89m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH535705_L4908,L5824_Pond294 SJ7097379211	Pond294 546m^2, shaded pond on field boundary	RA	MA03	45m east
CH641530_L5496_Pond295 SJ7049079242	Pond295 387m^2, shaded pond in golf course	RA	MA03	68m west
Pond2669 SJ6928779292	Pond2669 484m^2, partially shaded pond in arable field	RA	MA03	98m north
CH547590_L5945_Pond963 SJ7007479325	Pond963 162m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L10068_Pond1478 SJ7100679339	Pond1478 351m^2, shaded pond on field boundary	RA	MA03	43m east
Multiple_L10068_Pond297 SJ7099979355	Pond297 367m^2, shaded pond on field boundary	RA	MA03	39m east
CH547590_L5945_Pond964 SJ7006179373	Pond964 255m^2, shaded pond on field boundary	RA	MA03	27m west
CH641530_L5496_Pond298 SJ7072079434	Pond298 710m^2, partially shaded pond in golf course	RA	MA03	29m south
CH641530_L5496_Pond299 SJ7038279450	Pond299 272m^2, shaded pond in golf course	RA	MA03	59m west
CH641530_L5496_Pond300 SJ7038779474	Pond300 171m^2, shaded pond in golf course	RA	MA03	47m west
CH641530_L5496_Pond301 SJ7035579536	Pond301 218m^2, shaded pond in golf course	RA	MA03	18m south
Multiple_L8345_Pond302 SJ7080179556	Pond302 618m^2, partially shaded pond next to farm yard	RA	MA03	9m west
CH641530_L5496_Pond303 SJ7033979567	Pond303 214m^2, shaded pond in golf course	RA	MA03	5m west
CH178187_L6032_Pond306 SJ7113179575	Pond306 822m^2, partially shaded pond in arable field	RA	MA03	71m north
CH178187_L6032_Pond304 SJ7111979590	Pond304 269m^2, shaded pond in arable field	RA	MA03	80m east
Multiple_L10068_Pond305 SJ7091079591	Pond305 273m^2, partially shaded pond on arable field boundary	PSYM	MA03	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L10068_Pond 307 SJ7099379641	Pond307 373m^2, shaded pond on arable field boundary	PSYM	MA03	Within
CH641530_L5496_Pond 308 SJ7035679709	Pond308 655m^2, shaded pond in golf course	PSYM	MA03	Within
Pond1191 SJ7160879761	Pond1191 528m^2, drainage pond for motorway	RA	MA03	30m north
Pond1192 SJ7158879775	Pond1192 512m^2, drainage pond for motorway	RA	MA03	35m north
CH641530_L5496_Pond 309 SJ7061779807	Pond309 663m^2, shaded pond in golf course	RA	MA03	36m west
CH641530_L5496_Pond 1320 SJ7032079856	Pond1320 381m^2, partially shaded pond in golf course	RA	MA03	36m west
CH641530_L5496_Pond 313 SJ7042380030	Pond313 83m^2, shaded pond in golf course	PSYM	MA03	Within
U201948_L5249,L5496, L17950_Pond315 SJ7041780053	Pond315 251m^2, shaded pond on field boundary	RA	MA03	5m west
CH641530_L10011_Pon d316 SJ7058080072	Pond316 276m^2, shaded pond on field boundary	PSYM	MA03	Within
CH275897_L5249_Pond 1555 SJ7032980080	Pond1555 222m^2, open pond in grazed field	RA	MA03	97m west
CH641530_L5118,L100 11_Pond317 SJ7059880083	Pond317 301m^2, shaded pond on field boundary	PSYM	MA03	Within
CH275897_L5118,L524 9,L10011_Pond318 SJ7057680093	Pond318 347m^2, shaded pond on field boundary	PSYM	MA03	Within
CH131342_L5118,L100 11_Pond319 SJ7063980124	Pond319 946m^2, shaded pond on field boundary	RA	MA03	16m north
CH258462_L5350_Pond 320 SJ7082980143	Pond320 394m^2, partially shaded pond on arable field boundary	RA	MA03	67m west
Pond4542 SJ7111380226	Pond4542 341m^2	PSYM	MA03	Within
Pond4543 SJ7117380353	Pond4543 24m^2	PSYM	MA03	Within
Pond4535 SJ7119280362	Pond4535	PSYM	MA03	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	27m^2			
CH434587_L5232_Pond 325 SJ7080980395	Pond325 1148m^2, open garden pond	RA	MA03	4m east
Pond4505 SJ7125680478	Pond4505 68m^2	PSYM	MA03	Within
CH517829_L6291_Pond 327 SJ7090280629	Pond327 186m^2, partially shaded pond in centre of grazed field	PSYM	MA03	Within
CH517829_L6291_Pond 1756 SJ7135080642	Pond1756 51m^2, shaded pond on field boundary	RA	MA03	39m east
CH517829_L6291_Pond 331 SJ7116980675	Pond331 517m^2, partially shaded pond in centre of grazed field	PSYM	MA03	Within
CH517829_L6301_Pond 330 SJ7136980677	Pond330 318m^2, open pond on field boundary	RA	MA03	54m east
CH517829_L6291_Pond 332 SJ7092480704	Pond332 718m^2, partially shaded pond in centre of grazed field	PSYM	MA03	Within
Multiple_L7871_Pond3 33 SJ7075680749	Pond333 133m^2, partially shaded pond in centre of grazed field	RA	MA03	73m west
Multiple_L7871_Pond3 34 SJ7076780777	Pond334 120m^2, open pond in grazed field	RA	MA03	77m west
CH517829_L6291_Pond 335 SJ7105380856	Pond335 108m^2, shaded pond on field boundary	PSYM	MA03	Within
CH517829_L6291_Pond 337 SJ7085980902	Pond337 166m^2, open pond in grazed field	RA	MA03	69m west
CH517829_L6301,L630 5_Pond338 SJ7137381079	Pond338 275m^2, shaded pond on edge of woodland	PSYM	MA03	Within
CH517829_L6301_Pond 339 SJ7153881080	Pond339 642m^2, partially shaded pond in arable field	RA	MA03	37m east
Pond1201 SJ7187281122	Pond1201 353m^2, shaded pond in woodland	RA	MA03	67m north
CH517829_L6301_Pond 340 SJ7154481126	Pond340 235m^2, shaded pond in arable field	RA	MA03	29m east
CH517829_L6301_Pond 341 SJ7152181141	Pond341 184m^2, shaded pond in arable field	RA	MA03	5m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH526651_L5807_Pond 838 SJ7091581180	Pond838 7m^2, open pond in farm yard	RA	MA03	32m west
CH526651_L5807_Pond 342 SJ7091781200	Pond342 113m^2, open garden pond	RA	MA03	22m west
CH517829_L6301,L630 5_Pond1197 SJ7137781204	Pond1197 113m^2, shaded pond on field boundary	PSYM	MA03	Within
CH526651_L5807_Pond 983 SJ7091281213	Pond983 6m^2, shaded garden pond	RA	MA03	20m east
CH517829_L4691_Pond 2644 SJ7229881251	Pond2644 292m^2, shaded pond in copse	RA	MA03	55m north
CH517829_L6301,L636 8_Pond1393 SJ7191581254	Pond1393 232m^2, shaded pond in woodland	RA	MA03	12m east
CH517829_L6283_Pond 344 SJ7128181411	Pond344 79m^2, shaded pond in area of woodland	PSYM	MA03	Within
Pond1564 SJ7191381457	Pond1564 7m^2, on field boundary	PSYM	MA03	Within
Pond1588 SJ7190881459	Pond1588 5m^2, open, artificial pond near works site	RA	MA03	4m west
CH517829_L6301,L514 6_Pond1501 SJ7188881496	Pond1501 425m^2, shaded pond on field boundary	RA	MA03	17m west
CH517829_L7111_Pond 346 SJ7143781537	Pond346 233m^2, shaded pond in woodland	PSYM	MA03	Within
CH517829_L6291_Pond 347 SJ7116381537	Pond347 151m^2, shaded pond in area of woodland	PSYM	MA03	Within
Pond1138 SJ7189481567	Pond1138 3219m^2, open pond in works site	RA	MA03	7m west
Pond1128 SJ7184181573	Pond1128 161m^2 pond in woodland	PSYM	MA03	Within
CH517829_L6301_Pond 349 SJ7163581633	Pond349 278m^2, shaded pond on field boundary	RA	MA03	41m east
CH517829_L6250,L629 1_Pond875 SJ7113081640	Pond875 127m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L4963_Pond2 721 NY7266481699	Pond2721 566m^2, shaded garden pond	RA	MA03	2m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L6244_Pond351 SJ7103081729	Pond351 223m^2, open pond in arable field	RA	MA03	86m west
CH517829_L6291_Pond352 SJ7119081735	Pond352 105m^2, open pond in grazed field	PSYM	MA03	Within
Multiple_L6244_Pond353 SJ7103981740	Pond353 72m^2, shaded pond in arable field	RA	MA03	88m west
CH517829_L7111,L6367_Pond1199 SJ7190981749	Pond1199 465m^2, shaded pond in woodland	RA	MA03	10m east
CH517829_L7111_Pond1479 SJ7165381753	Pond1479 153m^2, shaded pond in woodland	RA	MA03	27m east
CH517829_L7111_Pond1480 SJ7163781769	Pond1480 214m^2, shaded pond in woodland	RA	MA03	3m east
CH517829_L7111_Pond1200 SJ7195881783	Pond1200 435m^2, shaded pond in woodland	RA	MA03	61m east
CH517829_L7111_Pond354 SJ7175881795	Pond354 165m^2, shaded pond in woodland	RA	MA03	54m west
CH517829_L7111_Pond355 SJ7166081811	Pond355 108m^2, shaded pond in woodland	RA	MA03	7m east
CH517829_L6291_Pond356 SJ7150081896	Pond356 386m^2, shaded pond in centre of grazed field	PSYM	MA03	Within
CH517829_L7111_Pond358 SJ7176081921	Pond358 338m^2, shaded pond in woodland	RA	MA03	42m east
CH517829_L6291_Pond357 SJ7166681925	Pond357 114m^2, shaded pond in grazed field	PSYM	MA03	Within
CH517829_L6291_Pond360 SJ7166081934	Pond360 163m^2, shaded pond in grazed field	PSYM	MA03	Within
Pond1217 SJ7201781997	Pond1217 257m^2, shaded pond in woodland	RA	MA03	53m east
CH517829_L7111,L6291_Pond362 SJ7177182007	Pond362 209m^2, shaded pond in woodland	RA	MA03	13m east
CH517829_L7111,L6291_Pond363 SJ7177482026	Pond363 324m^2, shaded pond in woodland	RA	MA03	4m east
CH517829_L7111,L6291_Pond364 SJ7176882051	Pond364 313m^2, shaded pond in woodland	PSYM	MA03	Adjacent, south-west
CH526217_L6090_Pond1202 SJ7199382171	Pond1202 1063m^2, shaded pond in woodland	PSYM	MA03	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH517829_L6291_Pond 369 SJ7159582184	Pond369 232m^2, shaded pond in grazed field	PSYM	MA03	Within
CH517829_L6291_Pond 370 SJ7164682210	Pond370 158m^2, open pond in grazed field	PSYM	MA03	Within
CH526217_L5207_Pond 1396 SJ7209082333	Pond1396 173m^2, open, artificial pond near works site	RA	MA03	38m east
Multiple_L6291_Pond3 73 NY7157482355	Pond373 255m^2 pond on field boundary	PSYM	MA03	Within
Pond1371 SJ7211382359	Pond1371 342m^2, open, artificial pond near works site	RA	MA03	47m east
CH526217_L5207_Pond 1301 SJ7209682384	Pond1301 595m^2, open, artificial pond near works site	RA	MA03	27m east
CH547023_L5466_Pond 377 SJ7140582644	Pond377 470m^2, open pond in centre of grazed field	PSYM	MA03	Within
Multiple_L5396,L45432 _Pond974 SJ7259783088	Pond974 291m^2, shaded pond in woodland	RA	MA03	32m east
Multiple_L21559_Pond 1799 SJ7258183146	Pond1799 306m^2, open pond in arable field	RA	MA03	6m east
Multiple_L5198_Pond3 87 SJ7211183152	Pond387 799m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L21559_Pond 1274 SJ7247583211	Pond1274 432m^2, open, artificial pond near works site	RA	MA03	11m west
Multiple_L21559_Pond 1272 SJ7241583220	Pond1272 527m^2, open, artificial pond near works site	RA	MA03	14m north
Multiple_L21559_Pond 1136 SJ7249283233	Pond1136 283m^2, open, artificial pond near works site	RA	MA03	4m west
CH474608_L5262,L546 7_Pond388 SJ7199883247	Pond388 247m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L5262,L5467_ Pond839 SJ7202483251	Pond839 470m^2, partially shaded pond in arable field	PSYM	MA03	Within
Multiple_L21559_Pond	Pond1127	RA	MA03	51m north

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
1127 SJ7240783255	375m^2, open, artificial pond near works site			
Multiple_L21559_Pond 1302 SJ7246383264	Pond1302 291m^2, open, artificial pond near works site	RA	MA03	37m west
Multiple_L21559_Pond 1226 SJ7249583266	Pond1226 252m^2, open, artificial pond in works	RA	MA03	9m west
Multiple_L5262_Pond3 89 SJ7196083272	Pond389 140m^2 shaded pond on field boundary	PSYM	MA03	Within
Multiple_L21559_Pond 1399 SJ7243183275	Pond1399 132m^2, open, artificial pond in works	RA	MA03	75m west
Multiple_L21559_Pond 1119 SJ7244883290	Pond1119 262m^2, artificial pond in works site	RA	MA03	62m west
Multiple_L21559_Pond 1297 SJ7248383291	Pond1297 521m^2, artificial pond in quarry	PSYM	MA03	Within
Multiple_L21559,L4542 9,L47170_Pond1221 SJ7234983303	Pond1221 365m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L5262,L5467_ Pond390 SJ7183883313	Pond390 140m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L5262,L5269_ Pond393 SJ7188583373	Pond393 300m^2, shaded pond in woodland between grazed fields	PSYM	MA03	Within
Multiple_L5365_Pond3 95 SJ7129183395	Pond395 240m^2, partially shaded pond in golf course	PSYM	MA03	Within
Multiple_L5262_Pond3 96 SJ7190483401	Pond396 143m^2, shaded pond in woodland between grazed fields	PSYM	MA03	Within
Pond1222 SJ7286283405	Pond1222 434m^2, shaded garden pond	RA	MA03	1m south
Multiple_L5262,L6256_ Pond401 SJ7189683453	Pond401 75m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L5365_Pond4 03 SJ7132183479	Pond403 427m^2, open pond on field boundary	PSYM	MA03	Within
Multiple_L5235_Pond4 07 SJ7118783525	Pond407 178m^2, shaded pond in woodland	RA	MA03	75m west
Multiple_L5235_Pond4 09 SJ7122883546	Pond409 268m^2, shaded pond in woodland	RA	MA03	41m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L5262,L6256_ Pond410 SJ7202583548	Pond410 367m^2, shaded pond on field boundary	PSYM	MA03	Within
CH461057_L5812_Pond 412 SJ7227483566	Pond412 98m^2, shaded pond on field boundary	RA	MA03	71m west
CH461057_L5812_Pond 414 SJ7232883595	Pond414 313m^2, partially shaded garden pond	RA	MA03	10m west
CH445468_L5262,L210 99_Pond415 SJ7218183612	Pond415 83m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L21559_Pond 861 SJ7239883627	Pond861 567m^2, partially shaded pond on field boundary	PSYM	MA03	Within
Pond419 SJ7145583661	Pond419 469m^2, shaded pond in area of woodland between grazed fields	PSYM	MA03	Within
Multiple_L5851,L6256_ Pond429 SJ7211483801	Pond429 229m^2, shaded pond on field boundary	PSYM	MA03	Within
CH275490_L5859,L625 6_Pond428 SJ7215283804	Pond428 106m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L5847,L5851,L 5859,L6256_Pond962 SJ7213483821	Pond962 255m^2, shaded pond on field boundary	PSYM	MA03	Within
Multiple_L5851_Pond4 32 SJ7198683822	Pond432 305m^2, open pond on hedgerow of arable field	PSYM	MA03	Within
CH177427_L5078_Pond 449 SJ7145484075	Pond449 568m^2, open pond in grazed field	RA	MA03	55m west
CH177427_L5469,L596 8_Pond840 SJ7153584217	Pond840 152m^2, shaded pond on hedgerow boundary of arable fields	RA	MA03	43m south
Multiple_L5290_Pond4 58 SJ7193884260	Pond458 342m^2, open pond on boundary of grazed field	PSYM	MA03	Within
CH358145_L5853_Pond 465 SJ7178584325	Pond465 252m^2, shaded garden pond	RA	MA03	2m east
CH448367_L4985,L585 3_Pond959 SJ7187684420	Pond959 274m^2, partially shaded pond on field boundary	PSYM	MA03	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
U200973_L6096_Pond474 SJ7142484430	Pond474 366m^2, open pond on field and road boundary	PSYM	MA03	Within
CH338886_L4906_Pond488 SJ7155384775	Pond488 94m^2, shaded pond on boundary of arable field	RA	MA03	35m west
CH338886_L4906_Pond489 SJ7147984780	Pond489 126m^2, open pond in arable field	RA	MA03	77m south
CH338886_L4906_Pond492 SJ7155784790	Pond492 57m^2, shaded pond on boundary of arable field	RA	MA03	50m west
CH601656_L5054_Pond497 SJ7163684847	Pond497 128m^2, partially shaded pond in grazed field	RA	MA03	9m west
Pond1176 SJ7051484868	Pond1176 286m^2, partially shaded pond in centre of grazed field	RA	MA03	57m north
Multiple_L5858_Pond525 SJ7142085379	Pond525 118m^2, open pond in farm yard	RA	MA03	32m east
CH161694_L6081_Pond534 SJ7116986233	Pond534 145m^2, shaded garden pond	RA	MA03	71m west
Multiple_L5758,L5849,L6127,L12494_Pond548 SJ7147387221	Pond548 1921m^2, partially shaded pond in buffer between arable fields	RA	MA04	46m north
CH250245_L21057_Pond1611 SJ7122187713	Pond1611 78m^2, open garden pond	PSYM	MA04	Within
CH445747_L6061_Pond550 SJ7080888183	Pond550 126m^2, shaded pond in scrub	RA	MA04	8m west
Multiple_L6075_Pond551 SJ7080788274	Pond551 465m^2, partially shaded pond in pasture	PSYM	MA04	Within
Multiple_L6113_Pond874 SJ7079088719	Pond874 173m^2, shaded pond in woodland	RA	MA04	13m west
Multiple_L5970_Pond554 SJ7079288733	Pond554 83m^2, partially shaded pond on boundary of woodland and arable field	RA	MA04	5m south
Multiple_L4890_Pond563 SJ7110589403	Pond563 234m^2, shaded pond on field boundary	RA	MA04	83m east
GM668241_L10282_Pond900 SJ7096789433	Pond900 10m^2, shaded garden pond	RA	MA04	32m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L4700_Pond1793 SJ7099089484	Pond1793 7m^2, shaded pond in woodland	RA	MA04	21m west
Multiple_L5145_Pond571 SJ7041589552	Pond571 163m^2, open pond in arable field	RA	MA04	14m west
Multiple_L5145,L5178_Pond576 SJ7045889624	Pond576 287m^2, shaded pond on field boundary	PSYM	MA04	Within
Multiple_L5145_Pond579 SJ7035089695	Pond579 253m^2, open pond in arable field	RA	MA04	74m west
Multiple_L6233_Pond581 SJ7051289833	Pond581 995m^2, partially shaded pond in hedgerow with scattered trees bordering arable field of arable fields	PSYM	MA04	Adjacent, south
Multiple_L6233_Pond583 SJ7046289872	Pond583 1202m^2, partially shaded pond in hedgerow with scattered trees bordering arable field of arable fields	PSYM	MA04	Adjacent, west
Multiple_L6233_Pond584 SJ7043289892	Pond584 61m^2, shaded pond in hedgerow with scattered trees bordering arable field of arable fields	PSYM	MA04	Adjacent, south
Multiple_L6233_Pond586 SJ7021490158	Pond586 633m^2, uniform and shaded garden pond	RA	MA04	12m south
Multiple_L6233_Pond587 SJ7050390178	Pond587 339m^2, partially shaded pond in buffer of arable field	PSYM	MA04	Within
Multiple_L6233_Pond589 SJ7048790238	Pond589 104m^2, shaded pond in clump of trees in centre of arable field	PSYM	MA04	Within
Multiple_L6233_Pond590 SJ7087390248	Pond590 348m^2, shaded pond in woodland	RA	MA04	18m south
Multiple_L6233_Pond591 SJ7050290255	Pond591 303m^2, shaded pond in clump of trees in centre of arable field	PSYM	MA04	Within
Multiple_L6233_Pond592 SJ7078990256	Pond592 627m^2, shaded pond in woodland	RA	MA04	Adjacent
Multiple_L6233_Pond594 SJ7090690256	Pond594 841m^2, shaded pond in woodland	RA	MA04	1m south
Multiple_L6233_Pond593 SJ7081890259	Pond593	RA	MA04	34m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	232m^2, shaded pond in woodland			
Multiple_L6233_Pond595 SJ7084390265	Pond595 408m^2, shaded pond in woodland	RA	MA04	23m south
Multiple_L6233_Pond596 SJ7082090281	Pond596 296m^2, shaded pond in woodland	RA	MA04	22m east
Multiple_L6233_Pond597 SJ7084290292	Pond597 144m^2, shaded pond in woodland	RA	MA04	5m south
Multiple_L6233_Pond598 SJ7082190306	Pond598 294m^2, shaded pond in woodland	RA	MA04	3m south
Multiple_L6233_Pond599 SJ6996990476	Pond599 103m^2, shaded pond in woodland	RA	MA04	67m west
Multiple_L6233_Pond600 SJ6999190499	Pond600 70m^2, shaded pond in woodland	RA	MA04	46m south
Multiple_L6233_Pond601 SJ6998090507	Pond601 92m^2, shaded pond in woodland	RA	MA04	36m south
Multiple_L6233_Pond603 SJ7002690691	Pond603 355m^2, shaded pond in clump of trees on boundary of arable fields	PSYM	MA04	Within
Multiple_L6233_Pond604 SJ7004790714	Pond604 405m^2, shaded pond in clump of trees on boundary of arable fields	PSYM	MA04	Within
MAN107024_L5926_Pond1802 SJ7070290770	Pond1802 Small, shaded pond in woodland	RA	MA04	77m north
MAN107024_L5926_Pond1792 SJ7071790781	Pond1792 Small, shaded pond in woodland	RA	MA04	93m north
Multiple_L6064_Pond612 SJ6962891584	Pond612 89m^2, partially shaded pond on hedgerow boundary of arable fields	PSYM	MA04	Within
Multiple_L5877_Pond616 SJ6898992608	Pond616 97m^2, open pond near farm yard	RA	MA04	1m north
Multiple_L51002_Pond620 SJ6861192846	Pond620 400m^2, two identical uniform ponds next to farm yard, possible slurry pits	PSYM	MA04	Within
Multiple_L51002_Pond621 SJ6862392857	Pond621 350m^2, two identical uniform ponds next to farm yard, possible slurry pits	RA	MA04	7m north
MAN43127_L47551_Pond2141 NY6898694745	Pond2141 126m^2, pond in construction yard	PSYM	MA04	Within
Pond4300	Pond4300	RA	MA04	18m south

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
SJ7008295089	124m^2, open pond on field boundary			
Pond1941 SJ6521392610	Pond1941 122m^2, open pond near industrial estate	RA	MA05	10m south
CH329686_L21217_Pond1232 SJ6867493191	Pond1232 257m^2, open pond in grassland	RA	MA05	4m east
CH319763_L5179_Pond1259 SJ6675393318	Pond1259 676m^2, shaded pond in island of woodland in grazed field	RA	MA05	70m west
Pond4509 SJ6777493434	Pond4509 305m^2	PSYM	MA05	Within
CH103951_L5092_Pond625 SJ6688293473	Pond625 2019m^2, open pond at entrance to quarry	RA	MA05	10m west
CH103951_L5092_Pond2036 SJ6689693515	Pond2036 3144m^2, pond in works site	RA	MA05	3m west
Pond4529 SJ6699493720	Pond4529 1m^2	PSYM	MA05	Within
Pond4530 SJ6697393747	Pond4530 70m^2	PSYM	MA05	Within
Multiple_L7045_Pond869 SJ6514993835	Pond869 208m^2, shaded pond in farmyard	RA	MA05	97m west
CH631858_L5850_Pond632 SJ6514493955	Pond632 1358m^2, partially shaded fishing pond	RA	MA05	89m west
CH520937_L6062_Pond634 SJ6536394068	Pond634 106m^2, open pond near farm yard	RA	MA05	4m east
CH317380_L5940_Pond637 SJ6532794118	Pond637 166m^2, open pond in grazed field next to road	RA	MA05	31m west
Multiple_L21207_Pond645 SJ6453794341	Pond645 Moderately-sized, open fishing pond	RA	MA05	87m south
Multiple_L21207_Pond647 SJ6455494349	Pond647 2796m^2, open fishing pond	RA	MA05	65m south
CH544789_L21163,L21207_Pond1568 SJ6447694405	Pond1568 181m^2, shaded fishing pond	RA	MA05	8m south
Multiple_L21207_Pond649 SJ6454594411	Pond649 1089m^2, open fishing pond	RA	MA05	26m south
Multiple_L21207_Pond650 SJ6462394411	Pond650 2535m^2, open fishing pond	RA	MA05	35m south

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
Multiple_L21207_Pond 651 SJ6469594427	Pond651 2606m^2, open fishing pond	RA	MA05	48m south
Multiple_L21207_Pond 652 SJ6475994446	Pond652 2428m^2, open fishing pond	RA	MA05	64m south
Multiple_L21207_Pond 653 SJ6463494467	Pond653 558m^2, open fishing pond	RA	MA05	22m south
Multiple_L5480_Pond1 125 SJ6536194471	Pond1125 632m^2, open pond in pasture field	PSYM	MA05	Within
Multiple_L21207_Pond 657 SJ6457794471	Pond657 2292m^2, open fishing pond	PSYM	MA05	Within
Multiple_L21207_Pond 654 SJ6470694485	Pond654 476m^2, open fishing pond	RA	MA05	29m south
Multiple_L21207_Pond 658 SJ6477394489	Pond658 1261m^2, open fishing pond	RA	MA05	41m south
Multiple_L21169_Pond 655 SJ6447994493	Pond655 951m^2, open fishing pond	RA	MA05	1m east
CH513865_L5302_Pond 656 SJ6530494496	Pond656 295m^2, shaded pond on woodland buffer of arable field	PSYM	MA05	Within
Multiple_L21207_Pond 659 SJ6478994512	Pond659 430m^2, open fishing pond	RA	MA05	38m south
Multiple_L6040_Pond2 178 SJ6434194528	Pond2178 377m^2, artificial waterbody in water works site	RA	MA05	16m south
Multiple_L5480,L21006 _Pond661 SJ6538394555	Pond661 221m^2, open pond in grazed field	RA	MA05	7m west
CH513865_L5302,L548 0_Pond663 SJ6528794568	Pond663 551m^2, shaded pond on field boundary	RA	MA05	20m west
Multiple_L21169_Pond 666 SJ6460394578	Pond666 10508m^2, part of four, open, fishing ponds in site	RA	MA05	20m west
Multiple_L5482_Pond8 93 SJ6590894587	Pond893 256m^2, shaded pond in arable field	RA	MA05	27m north
Multiple_L21169_Pond 664 SJ6474494605	Pond664 1608m^2, part of four, open, fishing ponds in site	RA	MA05	6m west
CH513865_L5302_Pond 667 SJ6510394646	Pond667 150m^2, shaded pond in arable field	RA	MA05	52m north
CH513865_L5302_Pond	Pond668	RA	MA05	67m north

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
668 SJ6509094663	49m², shaded pond in arable field			
Multiple_L4724,L5482_ Pond669 SJ6563894666	Pond669 255m², shaded pond on wooded hedgerow of arable field	PSYM	MA05	Within
Multiple_L4724,L5482_ Pond670 SJ6555494676	Pond670 187m², shaded pond on wooded hedgerow of arable field	PSYM	MA05	Within
CH513865_L5302_Pond 671 SJ6507894683	Pond671 94m², shaded pond in arable field	RA	MA05	65m south
CH513865_L5302_Pond 894 SJ6513394696	Pond894 49m², shaded pond in arable field	RA	MA05	53m south
Multiple_L5480_Pond6 74 SJ6532194714	Pond674 235m², shaded pond on wooded hedgerow of arable field	PSYM	MA05	Within
CH513865_L5302_Pond 675 SJ6507394714	Pond675 101m², shaded pond in arable field	RA	MA05	21m south
Multiple_L5480_Pond6 76 SJ6528894730	Pond676 162m², shaded pond on wooded hedgerow of arable field	PSYM	MA05	Within
Multiple_L5480_Pond6 77 SJ6526794734	Pond677 56m², shaded pond on wooded hedgerow of arable field	PSYM	MA05	Adjacent, south-west
CH513865_L5302_Pond 679 SJ6506294813	Pond679 175m², shaded pond on wooded hedgerow of arable field	PSYM	MA05	Within
U200971_L6094_Pond6 83 SJ6466294957	Pond683 210m², shaded pond on field boundary	PSYM	MA05	Within
CH105612_L21136_Pon d686 SJ6390095101	Pond686 278m², partially shaded pond on field boundary	RA	MA05	86m south
CH379962_L21176_Pon d687 SJ6393795196	Pond687 132m², shaded pond on field boundary	RA	MA05	132m west
CH379962_L21176_Pon d688 SJ6392395206	Pond688 137m², shaded pond on field boundary	RA	MA05	132m west
CH379962_L21176,L12 819_Pond691 SJ6386295279	Pond691 195m², shaded pond on field boundary	RA	MA05	135m west
CH379962_L21176,L12 819_Pond692	Pond692 298m², shaded pond on field	RA	MA05	12m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
SJ6384695297	boundary			
CH160471_L5116,L5357,L21168_Pond693 SJ6420895332	Pond693 99m^2, shaded pond in strip of woodland at boundary of golf course	PSYM	MA05	Within
CH160471_L5116,L5357_Pond694 SJ6416695384	Pond694 322m^2, shaded pond in strip of woodland at boundary of golf course	PSYM	MA05	Within
Multiple_L5173_Pond701 SJ6385095837	Pond701 20m^2, partially shaded pond in centre of arable field	RA	MA05	12m east
Pond704 SJ6394395902	Pond704 263m^2, shaded pond in grazed field	RA	MA05	82m north
Multiple_L5173_Pond706 SJ6381395921	Pond706 135m^2, open pond in centre of arable field	RA	MA05	8m east
Pond708 SJ6392595923	Pond708 385m^2, shaded pond in grazed field	RA	MA05	95m north
CH375737_L5866_Pond715 SJ6327296036	Pond715 498m^2, long, thin shaded pond in garden of country house	RA	MA05	14m west
GM463280_L21044_Pond868 SJ6303096188	Pond868 195m^2, partially shaded garden pond	RA	MA05	55m west
Multiple_L12592_Pond871 SJ6423996335	Pond871 760m^2, open pond in grazed field	RA	MA05	12m south
Multiple_L5331_Pond719 SJ6365596449	Pond719 207m^2, partially shaded pond in arable field	PSYM	MA05	Within
CH412504_L5088_Pond721 SJ6378296451	Pond721 322m^2, partially shaded pond in copse	RA	MA05	32m south
Multiple_L5242_Pond882 SJ6307997016	Pond882 187m^2, open pond in centre of arable field	PSYM	MA05	Within
Multiple_L5242_Pond732 SJ6326997058	Pond732 689m^2, open pond in centre of arable field	PSYM	MA05	Within
Multiple_L5303_Pond870 SJ6380797167	Pond870 195m^2, open pond in arable field	RA	MA05	56m west
Pond1243 SJ6399597224	Pond1243 391m^2, shaded pond in line of trees on boundary of scrubland	RA	MA05	29m west
Multiple_L4825,L12622	Pond733	PSYM	MA05	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
_Pond733 SJ6339097261	638m^2, open pond in centre of arable field			
MAN132526_L4825_Pond734 SJ6337397332	Pond734 277m^2, partially shaded garden pond	RA	MA05	10m north
GM496326_L6085_Pond736 SJ6325597811	Pond736 314m^2, shaded garden pond	RA	MA05	69m north
GM496326_L6085_Pond739 SJ6318297927	Pond739 623m^2, open pond in centre of arable field	RA	MA05	36m south
Pond4531 SJ6278497955	Pond4531 227m^2	PSYM	MA05	Within
MAN133176_L6114_Pond742 SJ6301097982	Pond742 737m^2, open pond in centre of arable field	PSYM	MA05	Within
GM886606_L5890_Pond890 SJ6273098171	Pond890 1546m^2, open pond on boundary of grazed field	PSYM	MA05	Within
GM785913_L5199_Pond759 SJ6285798190	Pond759 171m^2, partially shaded pond on hedgerow boundary of arable fields	PSYM	MA05	Within
Multiple_L11302_Pond891 SJ6249598311	Pond891 17m^2, shaded garden pond	RA	MA05	44m south
Multiple_L4943,L8930_Pond883 SJ6250698360	Pond883 181m^2, shaded, garden pond	PSYM	MA05	Adjacent, west
GM785913_L5199_Pond767 SJ6274998401	Pond767 276m^2, partially shaded pond on wooded hedgerow boundary of arable fields	RA	MA05	3m east
GM705836_L5109,L6159_Pond867 SJ6253998569	Pond867 87m^2, shaded pond next to farm yard and road	PSYM	MA05	Within
Multiple_L4159_Pond892 SJ6217698577	Pond892 585m^2, open pond in grazed field	RA	MA05	1m south
GM705836_L5109,L5134_Pond773 SJ6268798593	Pond773 1488m^2, partially shaded fishing pond in grazed field	PSYM	MA05	Within
Multiple_L6088_Pond1237 SJ6170498665	Pond1237 141m^2, shaded pond in woodland	RA	MA05	8m west
Multiple_L5256,L47287_Pond776 SJ6182698694	Pond776 104m^2, partially shaded pond in grazed field	RA	MA05	2m south
Multiple_L21059_Pond	Pond780	RA	MA05	64m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
780 SJ6141798795	380m^2, partially shaded pond on field boundary			
Multiple_L47287_Pond 887 SJ6188898817	Pond887 1871m^2, partially shaded pond in area of woodland scrub	RA	MA05	4m west
Multiple_L47287_Pond 1234 SJ6179798856	Pond1234 281m^2, shaded pond in woodland	RA	MA05	5m west
Multiple_L47287_Pond 782 SJ6198398939	Pond782 214m^2, shaded pond in area of woodland	PSYM	MA05	Within
Multiple_L47287_Pond 783 SJ6202198948	Pond783 438m^2, shaded pond in area of woodland	PSYM	MA05	Within
Multiple_L47287_Pond 785 SJ6207098980	Pond785 218m^2, shaded pond in area of woodland	RA	MA05	11m south
MAN210714_L5337_Po nd788 SJ6096999104	Pond788 440m^2, partially shaded pond in grazed field	RA	MA05	43m west
MAN210714_L5337_Po nd789 SJ6100799121	Pond789 123m^2, open pond in grazed field	RA	MA05	24m west
U200985_L5337,L6107_ Pond790 SJ6131399142	Pond790 805m^2, partially shaded pond on field boundary	RA	MA05	40m east
Multiple_L5103_Pond7 91 SJ6156199146	Pond791 801m^2, open pond in centre of arable or rough pasture field	PSYM	MA05	Within
Multiple_L5298_Pond7 92 SJ6182499180	Pond792 69m^2, partially shaded pond in wooded boundary of rough pasture field	PSYM	MA05	Within
Multiple_L5103,L5368_ Pond795 SJ6163799212	Pond795 1064m^2, partially shaded pond on wooded hedgerow boundary of arable field	PSYM	MA05	Within
Multiple_L5298_Pond7 93 SJ6180699214	Pond793 40m^2, partially shaded pond in wooded boundary of rough pasture field	PSYM	MA05	Within
Multiple_L5103,L5368_ Pond798 SJ6153499235	Pond798 987m^2, shaded pond on wooded hedgerow boundary of arable field	PSYM	MA05	Within
Multiple_L5368_Pond1	Pond1603	PSYM	MA05	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
603 SJ6108999317	3m^2, pond in centre of arable field			
Multiple_L6279_Pond1589 NY6019099343	Pond1589 561m^2, open pond in scrub	PSYM	MA05	Adjacent, south-west
Multiple_L5368_Pond1620 SJ6160399370	Pond1620 19m^2, partially shaded pond in buffer between arable fields	PSYM	MA05	Within
Multiple_L5488_Pond1618 SJ6176799386	Pond1618 18m^2, shaded pond in wooded corner of arable field	RA	MA05	15m north
Multiple_L5368_Pond800 SJ6096099496	Pond800 167m^2, open pond in centre of arable field	RA	MA05	49m south
Multiple_L4610,L5488_Pond801 SJ6152599538	Pond801 558m^2, open pond in corner of arable field	RA	MA05	8m west
Multiple_L5368_Pond1134 SJ6126799559	Pond1134 299m^2, open pond in arable field	PSYM	MA05	Within
GM707354_L5233_Pond803 SJ6039799576	Pond803 79m^2, shaded pond in woodland	RA	MA05	53m west
Multiple_L5368_Pond806 SJ6104499627	Pond806 137m^2, shaded pond on wooded hedgerow boundary of arable field and track	PSYM	MA05	Within
Multiple_L5488,L21090,L7756_Pond807 SJ6095699652	Pond807 160m^2, fenced and shaded pond on boundary of grazed field	PSYM	MA05	Within
Multiple_L5285_Pond808 SJ6054199672	Pond808 415m^2, partially shaded pond in buffer in centre of arable field	RA	MA05	9m east
Multiple_L5297_Pond1489 SJ6173399680	Pond1489 13495m^2, open pond near Abram Flashes SSSI	RA	MA05	50m north
Multiple_L5297_Pond1629 SJ6156999711	Pond1629 20m^2, open pond in grazed field	RA	MA05	37m west
Multiple_L5488_Pond1616 SJ6129299747	Pond1616 18m^2, shaded pond in grazed field	RA	MA05	80m west
Multiple_L5285_Pond811 SJ6048899838	Pond811 163m^2, partially shaded pond on wooded hedgerow boundary of arable field and track	PSYM	MA05	Within
Multiple_L4982,L5285_Pond844 SJ6056099997	Pond844 164m^2, shaded pond in wooded spur	PSYM	MA05	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
	of buffer which forms the boundary of arable field			
GM425997_L5141_Pond845 SD6105900045	Pond845 353m^2, partially shaded pond on field boundary	RA	MA05	50m east
Pond4519 SD6016500512	Pond4519 1586m^2	PSYM	MA05	Within
Pond4524 SD5997401029	Pond4524 690m^2	PSYM	MA05	Within
Pond1571 SD5927802670	Pond1571 306584m^2, interlocking waterbodies. Byrne Marsh and Ince Moss SSSI	RA	MA05	44m west
Pond2906 SJ7860181589	Pond2906 585m^2, fenced, open pond	RA	MA06	34m south
Pond2450 SJ7882281695	Pond2450 149m^2, shaded pond in woodland	RA	MA06	57m east
Pond2884 SJ7815781776	Pond2884 353m^2, shaded pond near residential area	RA	MA06	86m north
Pond2886 SJ7809981804	Pond2886 2594m^2, partially shaded pond near residential area	RA	MA06	65m north
Pond2881 SJ7806281836	Pond2881 377m^2, shaded pond near residential area	RA	MA06	87m south
Pond1808 SJ7801181857	Pond1808 3628m^2, partially shaded pond near residential area	RA	MA06	83m south
Pond2880 SJ7804981872	Pond2880 172m^2, shaded pond near residential area	RA	MA06	77m south
Pond1806 SJ7789782022	Pond1806 428m^2, open garden pond	RA	MA06	9m east
Pond1807 SJ7778082277	Pond1807 86m^2, narrow pond on wooded hedgerow boundary of arable fields	PSYM	MA06	Within
Multiple_L5356_Pond1809 SJ7762882936	Pond1809 70m^2, open pond in corner of grazed field	PSYM	MA06	Within
Multiple_L11245_Pond1421 SJ7699083114	Pond1421 153m^2, open pond on field boundary	PSYM	MA06	Within
CH594327_L2277_Pond	Pond1423	RA	MA06	3m east

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
1423 SJ7695083318	275m^2, shaded pond in copse			
CH594326_L5244_Pond 1424 SJ7695783369	Pond1424 503m^2, open pond in grazed field	RA	MA06	27m north
Multiple_L5356_Pond4 00 SJ7750683432	Pond400 450m^2, partially shaded pond on field boundary	PSYM	MA06	Within
Multiple_L5356,L43917 _Pond402 SJ7751583454	Pond402 445m^2, partially shaded pond on field boundary	PSYM	MA06	Within
Multiple_L5356_Pond4 04 SJ7745483480	Pond404 916m^2, partially shaded pond in wooded buffer of arable field	PSYM	MA06	Within
Multiple_L5184_Pond1 374 SJ7281883488	Pond1374 505m^2, shaded, artificial pond near works site	RA	MA06	5m north
CH573339_L182,L207_P ond1298 SJ7278183511	Pond1298 414m^2, open, artificial pond near works site	RA	MA06	7m west
Multiple_L5356_Pond4 05 SJ7737883521	Pond405 159m^2, partially shaded pond in wooded buffer of arable field	PSYM	MA06	Within
Multiple_L5195_Pond1 220 SJ7270683571	Pond1220 180m^2, shaded pond in copse	RA	MA06	41m north
Multiple_L5195_Pond1 224 SJ7269183581	Pond1224 152m^2, shaded pond in copse	RA	MA06	42m north
CH594233_L5342_Pond 416 SJ7862883652	Pond416 59m^2, shaded pond in wooded buffer of arable field	RA	MA06	78m south
CH594233_L5342_Pond 417 SJ7860683655	Pond417 154m^2, shaded pond in wooded buffer of arable field	RA	MA06	73m south
Multiple_L5356_Pond4 18 SJ7746883657	Pond418 120m^2, shaded pond in wooded corner of arable field	PSYM	MA06	Within
CH594233_L4867_Pond 420 SJ7852883681	Pond420 97m^2, shaded pond in wooded buffer of arable field	RA	MA06	56m south
CH594233_L4867_Pond 421 SJ7851783686	Pond421 45m^2, shaded pond in wooded buffer of arable field	RA	MA06	52m south
CH594327_L10161_Pon d1403 SJ7650383697	Pond1403 207m^2, open pond in grazed field	PSYM	MA06	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH594224_L6307_Pond 422 SJ7822883702	Pond422 63m^2, shaded pond in area of woodland	PSYM	MA06	Within
CH594327_L4965_Pond 423 SJ7638183704	Pond423 66m^2, shaded pond in arable field	RA	MA06	33m west
CH594218_L3944,L8_Pond424 SJ7742783722	Pond424 145m^2, shaded pond in wooded buffer of arable field	PSYM	MA06	Within
CH594218_L4147_Pond 426 SJ7695583774	Pond426 78m^2, shaded pond on edge of woodland	RA	MA06	7m south
Multiple_L21079_Pond 952 SJ7246283787	Pond952 84m^2, open garden pond	RA	MA06	47m north
CH594224_L5371_Pond 427 SJ7769083797	Pond427 311m^2, partially shaded pond in centre of arable field	PSYM	MA06	Within
CH594224_L6287,L5371_Pond430 SJ7784783807	Pond430 451m^2, partially shaded pond on boundary of arable field	PSYM	MA06	Within
CH603600_L5246_Pond 435 SJ7903183854	Pond435 428m^2, uniform and open pond in centre of grazed field	PSYM	MA06	Within
CH412333_L5879_Pond 439 SJ7245883854	Pond439 1360m^2, partially shaded pond on boundary of arable fields	RA	MA06	6m east
CH594218_L3944_Pond 1465 SJ7728583857	Pond1465 521m^2, open pond in centre of arable field	PSYM	MA06	Within
CH594233_L5342_Pond 441 SJ7846883893	Pond441 71m^2, open pond in centre of grazed field	RA	MA06	56m west
CH594224_L6287_Pond 442 SJ7804783928	Pond442 834m^2, open pond in centre of grazed field	RA	MA06	65m north
CH594326_L5244_Pond 444 SJ7675783981	Pond444 1172m^2, open pond in centre of grazed field	PSYM	MA06	Within
CH333422_L5796_Pond 443 SJ7888383982	Pond443 686m^2, shaded pond on boundary of grazed field and road	RA	MA06	11m west
CH594218_L4147_Pond 445 SJ7734884007	Pond445 135m^2, shaded pond on hedgerow boundary of grazed fields	RA	MA06	21m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH594218_L4147_Pond448 SJ7704284076	Pond448 117m^2, open pond in centre of grazed field	RA	MA06	3m south
CH594218_L4147_Pond450 SJ7734684101	Pond450 261m^2, partially shaded pond in corner of arable field	RA	MA06	11m west
CH561505_L3654,L5425_Pond452 SJ7603484163	Pond452 21m^2, shaded pond on field boundary	PSYM	MA06	Within
CH594233_L5115_Pond1431 SJ7786584279	Pond1431 409m^2, open pond in grazed field	RA	MA06	90m east
Multiple_L5290_Pond1601 SJ7219484306	Pond1601 3m^2, pond in farm yard	PSYM	MA06	Within
Multiple_L5290_Pond1602 SJ7218384312	Pond1602 3m^2, pond in farm yard	PSYM	MA06	Within
CH564899_L4913_Pond464 SJ7553184323	Pond464 79m^2, partially shaded garden pond	RA	MA06	8m west
Multiple_L5328_Pond466 SJ7273884335	Pond466 681m^2, uniform and open pond next to farm yard	PSYM	MA06	Within
CH422827_L5883_Pond980 SJ7204484347	Pond980 26m^2, open garden pond	RA	MA06	1m north
Multiple_L5370_Pond468 SJ7311884365	Pond468 3178m^2, partially shaded pond in arable field	RA	MA06	8m south
Multiple_L6042_Pond1600 SJ8003284400	Pond1600 37m^2, shaded pond in woodland	RA	MA06	91m east
CH561486_L6308_Pond471 SJ7506484401	Pond471 354m^2, partially shaded pond on field boundary	RA	MA06	87m north
Pond470 SJ7286084410	Pond470 4m^2, shaded pond on field boundary	RA	MA06	5m south
CH561486_L5494,L86_Pond472 SJ7524584421	Pond472 183m^2, shaded pond in corner of arable field	PSYM	MA06	Within
Multiple_L5288,L10166_Pond2536 SJ8067884423	Pond2536 239m^2, shaded pond in scrub	RA	MA06	4m south
CH432214_L4822_Pond475 SJ7203684457	Pond475 51m^2, shaded pond in arable field	PSYM	MA06	Within
Pond1800	Pond1800	RA	MA06	79m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
SJ7800284483	Small, shaded pond next to farmyard			
CH438356_L5139_Pond 476 SJ7212884527	Pond476 382m^2, open pond near farm yard	RA	MA06	42m west
CH561505_L5425_Pond 1804 SJ7725384554	Pond1804 298m^2, narrow pond in wooded buffer of major road	RA	MA06	81m west
CH573339_L5266_Pond 477 SJ7237184580	Pond477 315m^2, shaded pond in strip of woodland	PSYM	MA06	Within
CH405006_L5820_Pond 478 SJ7203884596	Pond478 113m^2, shaded pond on field boundary	RA	MA06	22m east
CH528227_L5822_Pond 985 SJ7207184605	Pond985 352m^2, shaded pond in arable field	RA	MA06	51m east
CH561486_L6308_Pond 480 SJ7489884608	Pond480 228m^2, shaded pond on field boundary	RA	MA06	73m south
CH561418_L7897_Pond 2313 SJ7707384614	Pond2313 84m^2, shaded pond on motorway boundary	RA	MA06	24m east
CH561418_L7897_Pond 2315 SJ7191381457	Pond2315 127m^2, shaded pond in woodland	RA	MA06	38m
CH561418_L7897_Pond 2314 SJ7709384631	Pond2314 138m^2, shaded pond on motorway boundary	RA	MA06	84m east
CH561418_L7897_Pond 2316 SJ7705584631	Pond2316 174m^2, shaded pond on motorway boundary	RA	MA06	25m east
Pond4503 SJ7253384634	Pond4503 16m^2	PSYM	MA06	Within
Pond4499 SJ7200184652	Pond4499 33m^2	PSYM	MA06	Within
CH565038_L6128_Pond 484 SJ7455684670	Pond484 366m^2, shaded pond on field boundary	PSYM	MA06	Adjacent, south-west
Multiple_L43404_Pond 1598 SJ7941684680	Pond1598 65m^2, shaded garden pond	RA	MA06	86m north
CH573339_L5417_Pond 486 SJ7277284735	Pond486 504m^2, partially shaded, open pond on boundary of grazed field and road	PSYM	MA06	Within

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH573339_L5417_Pond 491 SJ7325084778	Pond491 513m^2, partially shaded pond in centre of arable field	RA	MA06	50m south
CH457124_L4556_Pond 981 SJ7201484778	Pond981 2m^2, shaded garden pond	RA	MA06	14m east
CH573339_L5417_Pond 494 SJ7373084811	Pond494 237m^2, open garden pond	RA	MA06	1m north
Multiple_L4976_Pond2 573 SJ8039184846	Pond2573 222m^2, open pond near industrial estate	RA	MA06	66m south
CH565038_L6128_Pond 501 SJ7421284894	Pond501 141m^2, shaded pond in area of woodland	RA	MA06	30m east
CH561418_L5428_Pond 503 SJ7590484947	Pond503 526m^2, open pond in arable field	RA	MA06	15m south
CH419591_L6052_Pond 504 SJ7265984998	Pond504 152m^2, shaded pond on field boundary	RA	MA06	81m east
Pond4502 SJ7244185080	Pond4502 4m^2	PSYM	MA06	Within
Pond4539 SJ7244485092	Pond4539 44m^2	PSYM	MA06	Within
Pond4538 SJ7246185102	Pond4538 41m^2	PSYM	MA06	Within
CH561418_L7897_Pond 1803 SJ7719385041	Pond1803 1072m^2, open pond in arable field	RA	MA06	93m west
CH573339_L5417_Pond 1406 SJ7387785106	Pond1406 5722m^2, drainage pond next to motorway	PSYM	MA06	Within
CH490825_L4936_Pond 982 SJ7343885136	Pond982 26m^2, open pond in farm yard	RA	MA06	54m north
CH561451_L5392_Pond 514 SJ7450785214	Pond514 162m^2, shaded pond in woodland	PSYM	MA06	Within
CH561418_L7897_Pond 2312 SJ7642585222	Pond2312 569m^2, partially shaded pond on field boundary	RA	MA06	78m east
CH561451_L5392_Pond 516 SJ7449285228	Pond516 186m^2, shaded pond in woodland	RA	MA06	1m west
CH561451_L5392_Pond 517 SJ7446885240	Pond517 599m^2, partially shaded pond in woodland	RA	MA06	9m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
CH561451_L5392_Pond518 SJ7443985248	Pond518 190m^2, shaded pond in woodland	RA	MA06	13m north
CH561451_L5392_Pond519 SJ7441585252	Pond519 84m^2, shaded pond in woodland	RA	MA06	9m north
CH561451_L5392_Pond520 SJ7439485260	Pond520 233m^2, shaded pond in woodland	RA	MA06	10m north
Pond521 SJ8029885296	Pond521 21m^2, shaded garden pond	PSYM	MA06	Within
Pond522 SJ8030985326	Pond522 20m^2, shaded garden pond	PSYM	MA06	Within
Pond523 SJ8064785344	Pond523 528m^2, open pond in airport works site	RA	MA06	60m west
GM870009_L43875_Pond524 SJ8038985364	Pond524 297m^2, partially shaded garden pond	PSYM	MA06	Within
GM629089_L5773,L5813_Pond526 SJ8016985563	Pond526 236m^2, open pond on field boundary	PSYM	MA06	Within
Pond2553 SJ8214585664	Pond2553 91m^2, shaded pond in scrub	RA	MA06	76m west
CH561451_L5004,L45_Pond1805 SJ7454385719	Pond1805 5305m^2, artificial pond in works site	RA	MA06	4m north
GM79805_L24000_Pond532 SJ8030186111	Pond532 52m^2, shaded pond on woodland boundary of grazed field	RA	MA06	3m north
GM196549_L5728,L5777_Pond841 SJ8087586179	Pond841 180m^2, open pond in carpark	RA	MA06	12m east
Multiple_L6072_Pond535 SJ8056586305	Pond535 131m^2, shaded pond in centre of grazed field	PSYM	MA06	Within
Multiple_L6072_Pond537 SJ8056986332	Pond537 422m^2, shaded pond in centre of grazed field	PSYM	MA06	Within
Multiple_L4579,L5017_Pond538 SJ8034486375	Pond538 224m^2, partially shaded garden pond	RA	MA06	36m west
Multiple_L5017_Pond540 SJ8032986384	Pond540 121m^2, partially shaded garden pond	RA	MA06	60m west
GM459168_L5951_Pond873 SJ8043386480	Pond873 142m^2, shaded pond in arable field	PSYM	MA06	Within
GM452631_L5833_Pon	Pond541	RA	MA06	42m west

Ecology survey code and NGR	Pond description	Survey method proposed	CA	Approximate distance from land required for the construction of the Proposed Scheme (m) and orientation
d541 SJ8034986498	240m^2, shaded pond in area of woodland			
GM459168_L5951_Pond542 SJ8076286667	Pond542 128m^2, shaded pond in corner of grazed field	PSYM	MA06	Within
GM459168_L5951_Pond543 SJ8058586763	Pond543 1556m^2, narrow and partially shaded pond running through grazed field	RA	MA06	4m south
GM459168_L5951_Pond544 SJ8056186898	Pond544 142m^2, shaded pond in woodland	RA	MA06	93m west
Pond4064 SJ8375485260	Pond4064 Small, shaded pond in scrub	RA	MA07	64m south
Pond2556 SJ8223685714	Pond2556 295m^2, open pond at new road scheme	RA	MA07	1m west
Pond2554 SJ8217385811	Pond2554 65m^2, shaded pond in scrub	RA	MA07	11m south
Pond2555 SJ8213885919	Pond2555 217m^2, shaded pond in scrub	RA	MA07	32m north
Multiple_L8860_Pond602 SJ8349490532	Pond602 164m^2, partially shaded pond in golf course	RA	MA07	16m west
Multiple_L4904_Pond884 SJ8401590788	Pond884 357m^2, partially shaded pond in golf course	PSYM	MA07	Adjacent, south-west
GM643659_L8823_Pond607 SJ8371591042	Pond607 3714m^2, partially shaded pond in woodland between housing estates	RA	MA07	28m north

3.3 Baseline

Hough to Walley's Green (MA01)

Scoping

3.3.1 For the Hough to Walley's Green area (MA01), the desk study identified a total of 83 ponds within 100m, of which:

- 29 were either within or immediately adjacent to the area of land required for the construction of the Proposed Scheme; and

- 54 were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

3.3.2 Of these:

- 42 ponds have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- eight ponds have been identified as requiring PSYM survey, but could not be surveyed due to access constraints within the survey season;
- 12 ponds have been surveyed using RA, having met screening requirements;
- 21 ponds have been surveyed using PSYM, having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.3 Table 44 identifies the ponds where rapid assessment methodology has been undertaken in the Hough to Walley's Green area (MA01).

Table 44: Summary of the results of the RA surveys for MA01[4]

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesiflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
CH589878_L16026_PS2_Pond25_110619	Dry Pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2m south
Multiple_L4179_PS1_Pond826_131020	Garden pond with ornamental fish and plants. Covered concrete bed and surrounded by paving slabs.	0	0, 0, 1	0	1	0	1	1	1	1	23	Moderate	58m north SJ6937458847
CH179051_L4887_PS1_Pond31_141020	Large, turbid garden pond with grassy banks and heavy macrophyte cover.	0	0, 0, 1	1	1	1	0	0	0	1	31	Moderate	85m east SJ6922858976
Multiple_L7796_PS1_Pond32_141020	Large, deep pond in a private field. Fully fenced with minimal bank access.	0	1, 0, 1	1	1	1	1	1	1	1	48	Good	24m south SJ6933559006
Multiple_L16277_PS1_Pond917_131020	Open, turbid pond in grazed field. Compact soil bed and grasses present.	0	0, 0, 0	1	1	0	1	1	0	1	17	Low	62m north SJ7046159018

[4] 1= present, 0 = absent.

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple_L5490_PS1_Pond33_141020	Pond in field which extends into a ditch.	0	0, 0, 0	0	0	0	1	1	1	1	8	Low	45m south SJ6936859023
Multiple_L5490_PS1_Pond36_141020	Large open pond on private land next to a track.	0	0, 0, 1	1	1	1	1	0	0	1	36	Good	15m east SJ6937259122
Multiple_L5490_PS1_Pond38_141020	Pond in field with bare banks and compact soil, surrounded by young willow.	0	0, 0, 0	0	0	0	1	1	0	1	7	Low	1m south SJ6940459251
Multiple_L5318_PS1_Pond3992_151020	Shallow, terrestrialised pond in flood plain field.	0	0, 0, 0	1	1	0	0	0	0	0	10	Low	17m north-west SJ6965059916
Multiple_L5318_PS1_Pond4124_151020	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	35m north-west SJ6968259940
Multiple_L5165_PS1_Pond919_151020	Open pond in field, with inflow pipe and shallow banks.	0	0, 0, 1	1	1	0	1	0	1	0	26	Moderate	77m south-west SJ6850760861
Multiple_L5335_PS1_Pond52_151020	Fenced field pond with small island, high turbidity and heavy detritus.	0	0, 0, 0	1	1	0	1	0	0	1	16	Low	83m east SJ6881660920

Predictive System for Multimetrics (PSYM)

3.3.4 PSYM survey was conducted on 21 ponds in the Hough to Walley's Green area, see Table 45.

Table 45: Summary of the results of the PSYM surveys for MA01

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH88142_L16182_PS2_Pond24_110619	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7007857891
CH88142_L16182_PS2_Pond27_110619	160m^2 Heavily poached pond in middle of a cattle grazed field.	6	9	0	4.3	0	2	Poor	Within SJ7024558085
Multiple_L16143_PS2_Pond902_110619	55m^2 Located in field of rough grassland. Potentially grazed by horses.	4	9.5	0	5.2	2	1	Poor	Within SJ7013158157
Multiple_L16143_PS2_Pond903_110619	43m^2 Located in field of rough grassland, may be grazed by horses at sometimes of year.	5	8.7	2 Various-leaved pondweed (*Potamogeton*	5.3	2	2	Moderate	Within SJ7011158228

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
				gramineus), White water-crowfoot (*Ranunculus aquatilis*)					
CH615624_L16133_PS2_Pond905_110619	40m² Fenced off pond at hedgerow/field boundary with long rough grassland.	1	0	0	5	0	1	Very Poor	Within SJ7001158343
CH615624_L16133_PS2_Pond28_130618	215m² Pond is surrounded by hayfields within scattered trees including goat willows (*Salix sp*).	2	0	0	4.14	0	2	Moderate	Within SJ7003458376
CH230277_L5895_PS2_Pond29_310718	30m² Field used for livestock but dense vegetation around pond.	8	9	0	4.2	1	2	Moderate	Within SJ6957358549
CH597265_L5956_PS2_Pond34_120619	120m² Very boggy field, slight indent with rushes indicating the pond	0	0	0	4.9	0	2	Poor	Within SJ6973459078

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	location.								
Multiple_L5490_PS2_Pond35_220720	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6948659133
Multiple_L5142_PS2_Pond1546_220720	314m^2 Pond within non-grazed field and choked with emergent vegetation.	3	9.17	1 Yellow waterlily (*Nuphar lutea*)	4.2	0	1	Poor	Adjacent, south-west SJ6878559607
Multiple_L5490_PS2_Pond39_220720	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6929459774
Multiple_L5318_PS2_Pond40_220720	280m^2 Pond with a lot of detritus, heavy *Lemna* covering and emergent around perimeter.	5	9.1	1 Greater duckweed (*Spirodela polyrhiza*)	4.25	0	1	Poor	Within SJ6953959800
Multiple_L5318_PS2_Pond42_220720	120m^2 Pond with heavy detritus in copse within grazed field.	3	9.67	0	3.4	0	1	Very Poor	Within SJ6944659948
Multiple_L549	79m^2	5	9.3	1	3.83	0	1	Poor	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
0_PS2_Pond43_220720	Pond within non-arable, wildflower meadow field.			Greater duckweed					SJ7198683822
Multiple_L5228_PS2_Pond44_180918	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6911260090
Multiple_L5379_PS2_Pond51_130619	235m^2 Pond surrounded by tall scrub and rank vegetation, with small wetted area full of woody debris.	6	9.25	1 Lesser reedmace (*Typha angustifolia*)	4.3	1	2	Poor	Within SJ6923260647
Multiple_L5379_PS2_Pond54_130619	1,100m^2 Pond in arable planted field surrounded by scrub and mature trees.	4	9.5	0	3.4	0	1	Very Poor	Within SJ6906361015
Multiple_L5165_PS2_Pond918_040919	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6862761183
Multiple_L5339_PS2_Pond60_140618	800m^2 Heavily poached, very turbid, homogenous, poor quality habitat, lack	1	0	0	3.8	1	1	Moderate	Within SJ6908661263

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	of aquatic vegetation.								
Multiple_L5339_PS2_Pond62_230720	844m^2 Large, poached in pond in grazed field with heavy rushes cover.	5	9.33	0	4.36	1	0	Poor	Within SJ6912061431
Multiple_L5339_PS2_Pond63_140618	250m^2 Situated in agricultural land, completely fenced off, rough pasture, heavily shaded by surrounding trees, lots of leaf litter and woody debris.	2	6.3	0	2.3	0	0	Poor	Within SJ6888561520

National Pond Survey (NPS)

3.3.5 None of the ponds that are likely to be significantly affected by the Proposed Scheme, i.e., those for which PSYM survey was undertaken, have been taken forward for NPS survey, as they were adequately described by PSYM survey for the purpose of this assessment.

Discussion

3.3.6 The majority of MA01 is in an area that supports lesser silver water beetle (*Hydrochara caraboides*). This species of beetle was recorded, during amphibian field surveys, in a pond north of Parkers Road, within land that has been identified for the purpose of habitat creation or enhancement as part of the Proposed Scheme. This pond was scoped in for RA. but could not be surveyed due to access constraints within the survey season. Four National Biodiversity Network[5] records of this species exist in MA01. Three of these records lie outside of the 100m buffer of the land required for the construction of the Proposed Scheme, and therefore, were not scoped in for PSYM or RA. The remaining record, from 1997, is from a pond located north of Crewe, approximately 26m south of the land required for the construction of the Proposed Scheme. This record is situated in an area of woodland and no pond has been identified in this location. The nearest identified pond (Pond29), approximately 76m north-east of this record, was surveyed using PSYM methodology in 2019. The lesser silver water beetle has not been identified in any ponds surveyed using RA or PSYM methodology, within MA01. The lesser silver water beetle is listed as Endangered in the Red Data Book of Insects, included in Schedule 5 of the Wildlife and Countryside Act 1981 and is a conservation priority of the local Biodiversity Action Plan (BAP) species. The species is rare in the UK, with Cheshire being one of only a few locations known to support it.

3.3.7 Pond Multiple_L7796_PS1_Pond32_141020 and pond Multiple_L5490_PS1_Pond36_141020 were within the good quality band for RA and were found to support higher scoring taxa such as alderflies and damselflies, with good taxon richness.

3.3.8 The remaining ponds where RA was undertaken in MA01 were assessed to be in either the low or moderate quality bands. These ponds had either moderate macro-invertebrate taxon richness with some higher scoring taxa, such as damselflies, or poor macro-invertebrate taxon richness and few high scoring taxa.

3.3.9 Pond CH88142_L16182_PS2_Pond27_110619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Recorded plant species included common water-plantain (*Alisma plantago-aquatica*), water horsetail (*Equisetum fluviatile*) and false fox-sedge (*Carex otrubae*). The pond supported a macro-invertebrate assemblage of low taxon

[5] The National Biodiversity Network. Available online at: https://nbn.org.uk/.

richness, comprising mostly commonly occurring Gammaridae and pond snails (Lymnaeidae). The Average Score Per Taxon (ASPT) score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.10 Pond Multiple_L16143_PS2_Pond902_110619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Four emergent plant species were recorded: common water plantain, fool's water-cress (*Apium nodiflorum*), common spike-rush (*Eleocharis palustris*) and compact rush (*Juncus conglomeratus*). The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, with some higher scoring caddisflies (Leptoceridae) and dragonflies (Aeshnidae). The ASPT score suggested probable clean water and the PSYM quality category for the pond was assessed as poor.

3.3.11 Pond Multiple_L16143 _PS2_Pond903_110619 was found to support two uncommon species; the various-leaved pondweed (*Potamogeton gramineus*), which is considered near threatened, and white water-crowfoot (*Ranunculus aquatilis*). Common duckweed (*Lemna minor*) was recorded along with three additional emergent and submerged plant species: common water plantain, compact rush and water mint (*Mentha aquatica*). The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, with some higher scoring dragonflies (Aeshnidae and Libellulidae). The ASPT score suggested probable clean water and the PSYM quality category was assessed as moderate.

3.3.12 Pond CH615624_L16133_PS2_Pond905_110619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. One plant species was recorded, which was hairy willowherb (*Epilobium hirsutum*). The pond supported a macro-invertebrate assemblage of very low taxon richness, with only one species of diving beetle (Dytiscidae) recorded. The ASPT score suggested probable clean water, though this is considered unreliable as the number of scoring taxa was so low, and the PSYM quality category for the pond was assessed as very poor.

3.3.13 Pond CH615624_L16133_PS2_Pond28_130618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two emergent species were recorded, compact rush and soft rush (*Juncus effusus*). The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly commonly occurring taxa. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.14 Pond CH230277_L5895_PS2_Pond29_310718 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Plant species recorded included emergent soft rush, hairy willowherb, bittersweet (*Solanum dulcamara*), branched burr-reed (*Sparganium erectu*m), reedmace (*Typha latifolia*) and water speedwell (*Veronica anagallis-aquatica*), as well as floating-leaved common duckweed and broad-leaved pondweed (*Potamogeton natans*). The pond supported a macro-invertebrate assemblage of low taxon

richness, comprising mostly commonly occurring Gammaridae and water louse (Asellidae). The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.15 Pond CH597265_L5956_PS2_Pond34_120619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. No aquatic plant species were recorded, with only terrestrial species noted. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly commonly taxa, though higher scoring caddisflies were also recorded (Rhyacophilidae). The ASPT score suggested probable moderate pollution and the PSYM category for the pond was assessed as poor.

3.3.16 Pond Multiple_L5142_PS2_Pond1546_220720 was found to support one uncommon species, yellow waterlily (*Nuphar lutea*). Three other emergent and submerged plant species were recorded: soft rush, hairy willowherb and water horsetail. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly common taxa. The ASPT score suggested probable moderate pollution and the PSYM category for the pond was assessed as poor.

3.3.17 Pond Multiple_L5318_PS2_Pond40_220720 was found to support one uncommon species, greater duckweed (*Spirodela polyrhiza*). Five other emergent and submerged plant species were recorded, these included common water-plantain, soft rush and water forget-me-not (*Myosotis scorpioides*). The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly common taxa. The ASPT score suggested probable moderate pollution and the PSYM category for the pond was assessed as poor.

3.3.18 Pond Multiple_L5318_PS2_Pond42_220720 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List, or listed as a Species of Principal Importance. Plant species recorded included soft rush, water horsetail and bittersweet, as well as common duckweed and star duckweed. (*Lemna trisulca*). The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly common taxa. The ASPT score suggested probable severe pollution and the PSYM category for the pond was assessed as very poor.

3.3.19 Pond Multiple_L5490_PS2_Pond43_220720 was found to support one uncommon species, greater duckweed. Five other emergent and submerged plant species were recorded, these included common water-plantain, bittersweet, hairy willowherb and branched burr-reed, as well as common duckweed and star duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly common taxa. The ASPT score suggested probable severe pollution and the PSYM category for the pond was assessed as poor.

3.3.20 Pond Multiple_L5379_PS2_Pond51_130619 was found to support one uncommon species, lesser reedmace (*Typha angustifolia*). Five other emergent and submerged plant species were recorded, including yellow iris (*Iris pseudacorus*) and hairy willowherb, as well as common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon

richness, comprising mostly commonly occurring taxa. The ASPT score suggested probable moderate pollution and the PSYM quality category was assessed as poor.

3.3.21 Pond Multiple_L5379_PS2_Pond54_130619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Four submerged and emergent species were recorded, including bittersweet and soft rush, as well as floating-leaved common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring waterbug (Hemiptera), water snails and water louse. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.22 Pond Multiple_L5339_PS2_Pond60_140618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. The pond supported one plant species, the emergent soft rush. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring Gammaridae and Glossiphoniidae. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.23 Multiple_L5339_PS2_Pond62_230720 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List, or listed as a Species of Principal Importance. Plant species recorded included soft rush, marsh horsetail (*Equisetum palustre*), water forget-me-not and bittersweet, as well as common duckweed and an unidentified species of water starwort (*Callitriche* sp.). The pond supported a macro-invertebrate assemblage of moderate taxon richness, with higher scoring dragonflies (Corduliidae). The ASPT score suggested probable moderate pollution and the PSYM quality category was assessed as poor.

3.3.24 Pond CH286640-CH616525_L5339_PS2_Pond63_140618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two submerged water-starwort species (*Callitriche hamulate* and *Callitriche sp*.) were recorded. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising only four commonly occurring water louse, non-biting midge (Chironomidae) and worms (Oligochaeta). The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

Wimboldsley to Lostock Gralam (MA02)

Scoping

3.3.25 For the Wimboldsley to Lostock Gralam area (MA02), the desk study identified a total of 186 ponds and three canals, of which:

- 77 were either within or immediately adjacent to the area of land required for the construction of the Proposed Scheme; and
- 109 were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

3.3.26 Of these:

- 92 ponds have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- 46 ponds have been identified as requiring PSYM survey, but could not be surveyed due to access constraints within the survey season;
- 17 ponds have been surveyed using RA having met screening requirements;
- 28 ponds have been surveyed using PSYM having met screening requirements;
- three canals have been surveyed using PSYM canal edge method having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.27 Table 46 identifies the ponds where rapid assessment methodology has been undertaken in the Wimboldsley to Lostock Gralam area (MA02).

Table 46: Summary of the results of the RA surveys for MA02[6]

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
CH643381_L5856_PS1_Pond67_101120	Heavily vegetated, fenced pond behind pub car park.	1	0, 0, 1	1	0	1	0	0	1	1	32	Moderate	44m south-west SJ6213762137
CH426012_L5892_PS1_Pond91_201020	Small, partially shaded pond in campsite	0	0, 0, 1	1	1	1	1	1	1	1	33	Moderate	56m east SJ6890364335
CH426012_L5892_PS1_Pond93_050919	Large open garden pond with fish present and marginal aquatic vegetation.	0	0, 0, 1	0	1	0	1	0	0	1	26	Moderate	2m east SJ6883264636
U200977_L6099_PS1_Pond97_050919	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	89m east SJ6897564822
CH446575_L6259_PS1_Pond100_050919	Shaded pond in woodland copse of arable field. Minimal or no aquatic vegetation.	0	0, 0, 0	1	0	0	0	0	0	1	7	Low	3m east SJ6870364989

[6] 1= present, 0 = absent.

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Dameslflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple _L5292_PS1_Pond910_050919	Very vegetated pond with a low water level and ditch inflow. Adjacent to road and arable fields.	0	0, 0, 0	1	0	0	1	0	1	0	12	Low	8m north SJ6832065053
CH512447_L5343_PS1_Pond832_201020	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16m north SJ6541665416
CH512447_L5343_PS1_Pond104_201020	Poached pond in field with heavy macrophyte growth.	0	0, 0, 0	1	1	1	0	1	1	1	18	Moderate	45m north SJ6543165431
CH512447_L5343_PS1_Pond105_201020	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1m south SJ6548165481
CH614901_L5388_PS1_Pond1519_031120	Large, fenced pond situated between grazed field and track.	0	0, 1, 0	1	1	1	0	1	1	1	28	Moderate	89m south-west SJ6716767167
CH285924_L5811_PS1_Pond142_180918	Large open pond with mature trees around the edges, next to canal. Lots of Typha, Elodea and algae in the open water. Pond frequented by	1	1, 0, 0	1	1	0	1	1	1	1	43	Good	15m east SJ6864070471

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
	swans and ducks.												
CH614475_L5372_PS1_Pond145_041120	Heavily vegetated, fenced pond within field.	0	0, 0, 0	1	1	1	0	1	0	1	17	Low	69m south-east SJ7062870628
CH614475_L5372_PS1_Pond149_041120	Silted pond with heavy detritus cover, surrounded by trees.	0	0, 0, 0	0	0	0	0	1	0	0	1	Low	6m north-east SJ7080670806
CH649829_L5391_PS1_Pond151_041120	Large, fenced pond within a field with extensive macrophyte growth and heavy shading.	0	0, 0, 0	1	1	0	1	1	1	1	18	Moderate	34m west SJ7090070900
CH455213_L6066_PS1_Pond156_041120	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	87m east SJ7134771347
CH449387_L6086_PS1_Pond201_190918	Mostly dried out, shallow pond left in the middle, lots of Typha and Juncus. Pond in a greenspace of a Travelodge carpark.	0	0, 0, 0	1	1	0	1	0	1	1	17	Low	10m west SJ6993075302
Multiple_L5935_PS1_Pond204_2	Heavily shaded, woodland pond with	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	20m south-east SJ7558375583

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Dameslflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
61120	thick layer of detritus and anoxic odour.												

Predictive System for Multimetrics (PSYM)

3.3.28 PSYM survey was conducted on 28 ponds and three canals in the Wimboldsley to Lostock Gralam area (MA02), see Table 47.

Table 47: Summary of the results of the PSYM surveys for MA02

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
Multiple_L5409_PS2_Pond66_130619	310m^2 Situated in occasionally grazed rough grassland, with	5	0	0	4.4	2	3	Moderate	Within SJ6875962048

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	mostly terrestrial vegetation.								
CH628338_L15879_PS2_Pond904_230720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6867162053
CH556853_L5320_PS2_Pond73_120618	240m² Land drainage pond in arable field, one half of pond heavily vegetated.	8	9.7	0	4.3	1	1	Moderate	Within SJ6873362531
CH452896_L5416_PS2_Pond76_130618	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6857662789
CH452896_L5416_PS2_Pond84_130618	60m² Situated in agricultural land.	7	8.8	0	4.2	2	2	Moderate	Within SJ6828763626
CH452896_L5416_PS2_Pond8	400m² Open,	11	8.6	0	4.4	3	4	Good	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
5_130618	unshaded pond in arable field.								SJ6827963659
Multiple_L5394_PS2_Pond87_230720	113m^2 Heavily shaded pond within small area of woodland.	2	10	0	3.5	0	1	Very poor	Within SJ6842064112
CH574826_L5257_PS2_Pond1608_230720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Adjacent, north-west SJ6793864401
Multiple_L8259_PS2_Pond98_130618	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6877864900
Multiple_L5292_PS2_Pond830_130619	320m^2 Pond in grazed field though currently no livestock. Pond seasonally wet.	0	0	0	4	0	2	Very poor	Within SJ6843965084
Multiple_L529	60m^2	0	0	0	3	0	1	Very poor	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
2 _PS2_Pond102 _130619	Pond on hedgerow boundary and merges into ditch. Looks to be dry most of the time.								SJ6844165158
Multiple_L549 7_PS2_Pond12 7_120618	200m² Pond heavily shaded, water level receding, open water covered in duckweed.	5	8.75	0	2.8	1	1	Poor	Within SJ6833469202
Multiple_ L5021_PS2_Po nd130_120618	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6836669494
Multiple_L517 1_PS2_Pond13 3_270720	907m² Large pond in farmland with heavy shading. Completely covered in	0	0	0	2	0	0	Very poor	Within SJ6839469730

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	Lemna and detritus.								
CH614475_L5372_PS2_Pond140_140618	251m² Pond in grazed field along field boundary, heavily poached.	8	9.5	0	4.4	0	2	Moderate	Within SJ6838170367
Multiple_L5372_PS2_Pond141_140618	200m² Fenced pond within a grazed pasture field. Shaded by adjacent woodland. Lots of leaf litter and woody debris.	0	0	0	4.4	1	2	Moderate	Within SJ6829370445
CH614475_L5372_PS2_Pond143_140618	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6844970589
Multiple_L5152_PS2_Po	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6863670655

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
nd146_200618									
Multiple_L5391_PS2_Pond155_190618	369m² Surrounded by grassland, pond margin densely populated with yellow flag iris.	9	9.1	1 Lesser reedmace	4.1	1	3	Moderate	Within SJ6865171331
Multiple_L6083_PS2_Pond159_250619	85m² Shaded pond in scrub patch within field of shorter grassland.	8	9.3	1 Great water dock (*Rumex hydrolapathum*)	4	0	2	Poor	Within SJ6857371492
CH505004_L6247_PS2_Pond168_270720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6889972014
Multiple_L4863_PS2_Pond171_190618	198m² Pond with a bare island in the middle within pastoral field with	1	9	0	4	0	2	Moderate	Within SJ6875772429

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	scattered goat willow trees.								
CH505004_L5424_PS2_Pond173_190618	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6914672477
CH557156_L5489_PS2_Pond1471_270619	915m^2 Shaded pond with few emergent and bare banks. Fish present.	2	10	0	3.3	0	0	Very poor	Within SJ7006674783
CH557156_L5489_PS2_Pond192_270619	90m^2 Shaded pond in arable field.	2	9	0	3.8	0	2	Poor	Within SJ7002074851
CH557156_L6270_PS2_Pond197_270619	406m^2 Shaded pond at edge of wheat field, within boundary woodland.	1	8.8	0	3.8	0	1	Poor	Within SJ7003675041
CH557156_L6270_PS2_Pond1	269m^2	5	10	1	4.2	0	1	Poor	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
99_270619	Shaded pond in arable field.			Lesser reedmace					SJ7009675266
CH557156_L6270_PS2_Pond200_270619	400m^2 Significantly shaded, well vegetated pond in wheat field.	6	9.4	2 Lesser reedmace Cyperus sedge (*Carex pseudocyperus*)	4	1	2	Poor	Within SJ7008175296
CH580519_L4715_PS2_Canal12_110718	Shropshire Union Canal	Not recorded	Not recorded	Not recorded	3.2	0	0	Poor	Within SJ6851065547
Multiple_L4946_PS2_Canal10_110718	Trent and Mersey Canal – 1st Crossing	Not recorded	Not recorded	Not recorded	3.1	0	0	Poor	Within SJ6835868825
CH566710_L4935_PS2_Canal15_110718	Trent and Mersey Canal – 3rd Crossing	Not recorded	Not recorded	Not recorded	3	0	0	Poor	Within SJ6842470770

National Pond Survey (NPS)

3.3.29 None of the ponds that are likely to be significantly affected by the Proposed Scheme, for which PSYM survey was undertaken, has been taken forward for NPS survey, due the fact they are adequately described by PSYM survey for the purpose of this assessment.

Discussion

3.3.30 The majority of MA02 is in an area that supports lesser silver water beetle. Three records of this species exist in MA02, from the National Biodiversity Network Trust. Two records from 1997 are located south-east of Northwich, within the land required for the construction of the Proposed Scheme. The first record is located in an arable field. No pond has been identified in this location, though the record is located approximately 68m west of Pond159, which was found to be dry, and approximately 85m north-west of Pond936, which was identified for RA, but access constraints limited surveys in this location. The second record of lesser silver water beetle is adjacent to the A530. No pond has been identified in this location, but the record is approximately 39m west of two ponds that were identified for PSYM assessment, Pond166 and Pond167. Neither of these ponds could be visited for PSYM assessment due to access constraints at the time of the surveys. The remaining record lies outside of the 100m buffer of the land required for the construction of the Proposed Scheme and therefore was not scoped in for PSYM or RA. This species has not been identified in any ponds surveyed using RA or PSYM methodology.

3.3.31 Pond CH285924_L5811_PS1_Pond142_180918 was within the good quality band for RA, as it was found to support higher scoring macro-invertebrate taxa, such as caddisflies and alderflies, and a relatively high taxon richness. This pond was situated in a corridor of semi-natural habitat with good connectivity to the canal.

3.3.32 Ponds CH643381_L5856_PS1_Pond67_101120, CH426012_L5892_PS1_Pond91_201020, CH426012_L5892_PS1_Pond93_050919, CH512447_L5343_PS1_Pond104_201020, CH614901_L5388_PS1_Pond1519_031120 and CH649829_L5391_PS1_Pond151_041120 were within the moderate quality band for RA and were found to support fewer high scoring taxa. The remaining ponds recorded fewer taxa than the other ponds assessed for RA in this community area and no high scoring taxa. The quality bands were low, likely owing to the urban nature of these water bodies.

3.3.33 Pond Multiple_L5409_PS2_Pond66_130619 supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring taxa, though higher scoring damselfly were also recorded (Lestidae). The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate. Recorded plant species included marsh bedstraw (*Galium palustre*), hairy willowherb and soft rush.

3.3.34 Pond CH556853_L5320_PS2_Pond73_120618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data

List or listed as a Species of Principal Importance. Several plant species were recorded, including water forget-me-not, fool's water-cress and yellow iris, as well as floating-leaved star duckweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising mostly commonly occurring taxa, though higher scoring crayfish were also recorded (Astacidae). The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.35 Pond CH452896_L5416_PS2_Pond84_130618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Several plant species were recorded, including creeping bentgrass (*Agrostis stolonifera*), common water-plantain, floating sweet-grass (*Glyceria fluitans*), soft rush, redshank (*Persicaria maculosa*) and branched burr-reed, as well as floating common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring waterbugs, beetles (Coleoptera) and leeches (Hirudinea), although alderflies (Megaloptera) and damselflies (Odonata) were also present. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.36 Pond CH452896_L5416_PS2_Pond85_130618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Several emergent plant species were recorded, including water pepper (*Persicaria hydropiper*), marsh cinquefoil (*Potentilla palustris*) and bittersweet. Common duckweed was also recorded. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising several species of waterbug and beetle, as well as damselflies, mayflies (Baetidae) and alderflies. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.37 Pond Multiple_L5394_PS2_Pond87_230720 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two emergent species were recorded, there were yellow iris and bittersweet. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising only diving beetles and non-biting midges. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.38 Pond Multiple_L5292_PS2_Pond830_130619 did not support any aquatic plant species, which was likely due to the pond being dry most of the time. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising only beetles, crane flies (Tipulidae) and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.39 Pond Multiple_L5292 _PS2_Pond102_130619 did not support any aquatic plant species, which was likely due to the pond being dry most of the time. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising only water scavenger beetle

(Hydrophilidae) and worms. The ASPT score suggested severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.40 Pond Multiple_L5497_PS2_Pond127_120618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Five emergent and submerged plant species recorded, including emergent water horsetail and reedmace, as well as floating leaved common duckweed and least duckweed (*Lemna minuta*). The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly commonly occurring water scavenger beetle, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.41 Pond Multiple_L5171_PS2_Pond133_270720 did not support any emergent or submerged plant species, only least duckweed. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising only non-biting midge. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.42 Pond CH614475_L5372_PS2_Pond140_140618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List, or listed as a Species of Principal Importance. Eight emergent plant species were recorded, including yellow iris, water horsetail and European speedwell (*Veronica beccabunga*). The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring waterbugs, beetles, shrimp (Amphipoda), leeches and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.43 Pond Multiple_L5372_PS2_Pond141_140618 did not support any aquatic plant species, which was likely due to heavy shading. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising mostly commonly occurring species, though higher scoring dragonflies were also recorded (Aeshnidae). The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.44 Pond Multiple_L5391_PS2_Pond155_190618 was found to support one uncommon plant species, lesser reedmace. An additional seven emergent and submerged plant species were recorded, including fool's water-cress and yellow iris, as well as common duckweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising common waterbug and beetle species, as well as damselflies, water snails (Gastropoda) and leeches. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.45 Pond Multiple_L6083_PS2_Pond159_250619 was found to support one uncommon plant species, great water dock (*Rumex hydrolapathum*). An additional eight emergent plant species were recorded, including marsh bedstraw, reed canary grass (*Phalaris arundinacea*) and bittersweet, as well as common duckweed. The pond supported a macro-invertebrate

assemblage of moderate to high taxon richness, comprising mostly commonly occurring water snails and waterbugs. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.46 Pond Multiple_L4863_PS2_Pond171_190618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. One floating-leaved plant species was recorded, which was common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising commonly occurring waterbugs, beetles and leeches. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.47 Pond CH557156_L5489_PS2_Pond1471_270619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two emergent plant species were recorded: yellow iris and bittersweet. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising water boatmen (Corixidae), water louse and non-biting midge. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.48 Pond CH557156_L5489_PS2_Pond192_270619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two emergent plant species were recorded, an unidentified sedge (*Carex sp.*) and soft rush, as well as the floating-leaved common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising beetles, water louse and non-biting midge. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.49 Pond CH557156_L6270_PS2_Pond197_270619 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. One emergent species was recorded, which was reed canary grass, as well as floating-leaved common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising beetles, water louse and non-biting midge. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.50 Pond CH557156_L6270_PS2_Pond199_270619 was found to support one uncommon plant species, lesser reedmace. An additional four emergent plant species were recorded, including marsh bedstraw and marsh horsetail. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring waterbugs and beetles. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.51 Pond CH557156_L6270_PS2_Pond200_270619 was found to support two uncommon plant species, lesser reedmace and cyperus sedge (*Carex pseudocyperus*). An additional seven plant species were recorded, including reed canary grass, bittersweet and hairy willowherb, as well

as common duckweed, least duckweed and amphibious bistort (*Persicaria amphibia*). The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising mostly commonly occurring taxa, though higher scoring dragonflies (Libellulidae) were also recorded. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.52 Canals Multiple_L4946_PS2_Canal10_110718, CH566710_L4935_PS2_Canal15_110718 and CH580519_L4715_PS2_Canal12_110718 were surveyed using the PSYM canal edge method, which excludes plants. The macro-invertebrate assemblage had poor taxon richness for each canal and comprised mostly commonly occurring taxa. The ASPT scores suggested probable severe pollution for all canals. The PSYM quality category for each canal was assessed as poor.

Pickmere to Agden and Hulseheath (MA03)

Scoping

3.3.53 For the Pickmere to Agden and Hulseheath area (MA03), the desk study identified a total of 270 ponds, of which:

- 114 were either within or immediately adjacent to the area of land required for the construction of the Proposed Scheme; and
- 156 were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

3.3.54 Of these:

- 102 have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- 70 ponds have been identified as requiring PSYM survey, but could not be surveyed due to access constraints within the survey season;
- 54 ponds have been surveyed using RA having met screening requirements;
- 44 ponds have been surveyed using PSYM having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.55 Table 48 identifies the ponds where rapid assessment methodology has been undertaken in the Pickmere to Agden and Hulseheath area (MA03).

Table 48: Summary of the results of the RA surveys for MA03[7]

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple_L5498_PS1_Pond210_111120	Pond on boundary of arable field, heavily vegetated and full of coppiced trees.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	60m south-east SJ7628476284
Multiple_L5498_PS1_Pond217_111120	Large pond with a variety of macrophytes, as well as trees and reeds on the margins.	0	0, 0, 1	1	1	1	0	1	1	0	27	Moderate	76m east SJ7660476604
Multiple_L5498_PS1_Pond218_111120	Large pond with little shade and a variety of macrophyte and marginal species.	0	0, 0, 1	1	1	1	0	0	1	1	32	Moderate	26m north-west SJ7665676656
Multiple_L5498_PS1_Pond219_111120	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	22m east SJ7673376733
Multiple_L5498_PS1_Pond220_111120	Large pond in an arable field with marginal vegetation and trees.	0	0, 0, 1	1	0	1	0	1	1	1	23	Moderate	66m south-east SJ7678276782
CH568445_L8	Heavily vegetated pond lying	0	0, 0, 0	0	0	0	0	1	1	1	3	Low	23m west

[7] 1= present, 0 = absent

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
292_PS1_Pond226_121120	on the boundary of an arable field with vegetated buffer.												SJ7692776927
Multiple_L6271_PS1_Pond234_121120	Unfenced pond in improved grassland field, choked with emergent and floating vegetation	0	0, 0, 1	0	0	1	0	1	1	1	18	Moderate	28m west SJ7705477054
Multiple_L6271_PS1_Pond239_121120	Large, fenced pond within improved grassland with significant emergent and floating vegetation.	0	1, 0, 1	1	1	1	0	1	1	1	38	Good	22m west SJ7720877208
Multiple_L5492_PS1_Pond242_121120	Fenced pond within improved grassland, surrounded by scrub and trees.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	90m west SJ7729177291
Multiple_L5306_PS2_Pond246_020719	Shaded pond in Cheshire showground. Overgrown banks and fenced off	0	0, 1, 0	1	1	1	1	1	1	1	33	Moderate	66m west SJ7049877611
Multiple_L5363_PS1_Pond254_301019	Thick layer of leaf litter, several emergent trees shading pond, anoxic sediment.	0	0, 0, 0	0	1	0	0	0	1	1	7	Low	10m east SJ7086677794

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple _L5363_PS1_Pond255_301019	Mostly open water with some emergent. Surrounded by trees, ferns and grasses.	0	0, 0, 1	0	1	1	0	1	0	0	21	Moderate	84m west SJ7052077796
Multiple _L5363_PS1_Pond257_301019	Lots of leaf litter and no aquatic plants. Partially shaded and dense bankside vegetation.	0	0, 0, 0	0	0	1	0	1	0	1	7	Low	1m west SJ7061177974
Multiple_L5363_PS1_Pond259_121120	Heavily shaded pond with heavy silt and leaf litter, which is void of macrophytes.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	76m north SJ7803278032
Multiple_L5363_PS1_Pond260_121120	Large, fenced pond in improved grassland with mature trees.	0	0, 0, 0	0	0	1	0	1	1	0	7	Low	64m north SJ7805578055
Multiple_L5782_PS1_Pond261_121120	Large pond with clay base, islands and thick detritus.	0	0, 0, 0	1	0	1	1	1	0	1	17	Low	83m east SJ7809878098
Multiple_L5252_PS1_Pond265_131120	Shallow pond surrounded by mature trees and emergent species.	0	0, 0, 0	1	0	0	0	1	0	1	7	Low	25m north-east SJ7828478284
Multiple_L540	Arable field with pond	0	0, 0, 0	1	0	0	0	1	0	1	7	Low	23m west

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
8_PS1_Pond266_131120	depressed in centre, emergent grasses and mature trees.												SJ7828578285
CH561651_L5408_PS1_Pond268_190618	Heavily shaded pond with substantial woody/leafy debris, duckweed cover and Himalayan balsam (*Impatiens glandulifera*).	0	0, 0, 0	1	1	0	0	1	0	1	12	Low	28m east SJ7083578338
Multiple_L5902_PS1_Pond270_311019	Naturalised garden pond with heavy duckweed cover.	0	0, 0, 0	0	0	0	0	1	0	0	1	Low	23m north SJ7033278390
CH171520_L5891_PS1_Pond276_301019	Partially shaded and heavy duckweed cover in field fenced off from horses.	0	0, 0, 1	1	1	1	1	1	1	1	38	Good	54m north-west SJ7058678531
CH614145_L5942_PS2_Pond837_040719	Pond located on perimeter of potato field, 100% cover by duckweed	0	0, 0, 0	1	0	0	1	0	1	1	12	Low	52m north-east SJ7018178586
Multiple_L5321_PS1_Pond970_131120	Large pond overhung by mature trees and floating-leaved macrophytes.	0	0, 0, 0	1	1	0	0	1	0	1	12	Low	16m south-west SJ7875478754
Multiple_L5408_PS1_Pond2	Deep, steep sided pond within arable field, with	0	0, 0, 0	0	0	0	0	1	0	0	1	Low	96m north-west

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
80_131120	buffer of vegetation and trees.												SJ7876778767
Multiple_L5321_PS1_Pond969_131120	Small pond within copse on field boundary, full of detritus	0	0, 0, 0	1	0	0	0	0	0	0	5	Low	17m south SJ7876878768
Multiple_L5486_PS1_Pond284_161120	Small pond in copse surrounded by mature trees, with some emergents and macrophytes.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	42m east SJ7886978869
Multiple_L5486_PS1_Pond285_161120	Large, heavily shaded pond in copse surrounded by mature trees and with heavy detritus	0	0, 0, 0	0	0	0	0	1	0	0	1	Low	13m east SJ7887378873
Multiple_L5408_PS1_Pond286_131120	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	10m west SJ7888578885
CH145654_L5762_PS1_Pond292_311019	Large garden pond with mostly open water and little shading.	0	0, 0, 0	0	1	1	1	1	0	0	16	Low	27m south SJ7089879130
CH258462_L5350_PS1_Pond321_011019	Heavily shaded from surrounding hawthorn, surface covered in duckweed. Surrounded pond	0	0, 0, 0	1	1	0	0	0	0	0	5	Low	45m west SJ7085180147

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
	edges poached by cattle.												
CH258462_L5350_PS1_Pond322_011019	Shaded pond with heavily vegetated banks dominated by Himalayan balsam.	0	0, 0, 0	0	0	0	0	0	0	0	1	Low	8m east SJ7113480179
CH517829_L5350_PS1_Pond323_011019	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	16m east SJ7116380302
CH517829_L6291_PS2_Pond328_040719	Shaded pond in grazed field, connected to field ditch and two other ponds.	0	0, 0, 0	1	1	0	0	1	1	1	13	Low	40m east SJ7135080656
CH517829_L6301_PS1_Pond864_011019	Heavily vegetated and shaded pond next to arable field.	0	0, 0, 0	0	1	0	0	0	0	1	7	Low	52m south SJ7170780792
U206247_L5466_PS1_Pond381_241120	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	9m east SJ8273582735
U200981_L6103_PS1_Pond384_241120	Open, poached pond in field with minimal vegetation cover and a heavily silted bed.	0	0, 0, 0	1	1	0	0	1	0	1	12	Low	37m west SJ8288682886
CH614513_L9	Heavily shaded pond on field	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	69m east

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
023_PS1_Pond385_241120	boundary with heavy detritus and a compact soil bed.												SJ8302283022
Multiple_L5396_PS1_Pond1798_241120	Open pond with densely vegetated banks overgrown with scrub.	1	0, 0, 1	0	0	1	1	1	1	1	33	Moderate	22m west SJ8304983049
Multiple_L5396_PS1_Pond1797_241120	Open pond with densely vegetated banks overgrown with scrub.	0	0, 0, 1	0	1	1	0	1	1	1	23	Moderate	8m west SJ8307583075
Multiple_L5262_PS1_Pond391_241120	Fenced, heavily shaded pond with a thick silt later and heavy detritus.	1	0, 0, 0	0	0	0	1	0	0	1	16	Low	6m south-east SJ8337083370
CH441843_L4797_PS1_Pond394_120718	Two ponds at time of survey, normally joined by small ditch, surrounded by mature trees and grasses. Substantial leaf litter.	0	0, 0, 0	0	1	0	1	0	1	1	12	Low	1m west SJ7154283376
Multiple_L5365_PS1_Pond399_251120	Large pond in golf course with vegetated banks, moderate water depth and a silty bed.	0	0, 0, 1	0	1	0	1	1	1	1	23	Moderate	3m west SJ8341483414
CH177427_L5250_PS2_Pon	Heavily shaded pond with substantial large woody	0	0, 0, 0	1	1	0	1	1	0	1	17	Low	2m west

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
d438_170719	debris and leaf litter.												SJ7163283864
U201059_L6248_PS1_Pond1482_081019	Shaded pond with some aquatic vegetation.	1	0, 0, 0	0	0	0	1	1	1	1	18	Moderate	66m south SJ7109184456
Multiple_L5389_PS1_Pond1180_251120	Moderately-sized pond on golf course with vegetated banks and a silty, detritus bed.	0	0, 0, 1	0	0	0	1	1	1	1	18	Moderate	83m north SJ8447884478
Multiple_L5389_PS1_Pond1179_251120	Moderately-sized pond on golf course dominated by pond weed with some bank vegetation.	0	1, 0, 1	1	0	1	1	0	1	0	36	Good	99m north SJ8448084480
Multiple_L5389_PS1_Pond1346_251120	Moderately-sized pond on golf course with minimal water and dense vegetation. Likely dry without rainfall.	0	0, 0, 0	0	0	0	0	0	0	0	0	Low	5m north SJ8456684566
CH328686_L6950_PS1_Pond1181_081019	Garden pond with abundant emergent, submerged and floating aquatic vegetation. Surrounded by garden shrubs and small trees, fenced off from shorter grass in rest of garden	1	0, 1, 1	1	1	1	1	0	1	1	57	Excellent	93m north SJ7097584690

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
CH499369_L5248_PS1_Pond1208_251120	Small pond on field boundary with marginal trees and vegetation. Very turbid and moderate macrophyte cover.	0	0, 0, 0	1	0	1	1	0	0	1	16	Low	47m south-east SJ8469384693
CH499369_L5248_PS1_Pond496_251120	Large, heavily shaded pond on field boundary, with heavy detritus and silt overlay.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	84m south-east SJ8482484824
CH396059_L7064_PS1_Pond1348_081019	Very shaded pond, impacted by poultry in field and in pond, field heavily improved	0	0, 0, 0	1	1	1	0	1	0	1	22	Moderate	53m north-east SJ7043484932
CH409597_L6036_PS1_Pond510_17078	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	8m west SJ7159685090
CH272833_L5181_PS1_Pond512_091019	Fenced pond on field boundary with 90% duckweed cover	0	0, 0, 1	1	1	0	1	1	1	1	38	Good	70m south SJ7130685126
CH158997_L6060_PS1_Pond901_261120	Dry pond	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	27m west SJ8625486254

Predictive System for Multimetrics (PSYM)

3.3.56 PSYM survey was conducted on 44 ponds in the Pickmere to Agden and Hulseheath area (MA03), see Table 49.

Table 49: Summary of the results of the PSYM surveys for MA03

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH568445_L5498_PS2_Pond208_200618	190m² Receding water level and substantial cover of rigid hornwort (*Ceratophyllum demersum*).	13	8.9	2 Rigid hornwort Water chickweed (*Myosoton aquaticum*)	4.6	3	2	Good	Within SJ7033076206
CH568445_L5498_PS2_Pond209_200618	150m² Receded water level and substantial cover of rigid hornwort.	16	9	2 Rigid hornwort Water chickweed	4.5	3	3	Good	Within SJ7031776226
CH568445_L5498_PS2_Pond222_210618	150m² High coverage of duckweed and algae, fish present.	15	9.6	0	4.1	2	2	Good	Within SJ7052376818
CH568445_L5498_PS2_Pond224_210618	200m² Widespread algae and receded water level with substantial woody debris.	6	9.5	1 Rigid hornwort	4.1	1	2	Moderate	Within SJ7058876906
CH568445_L5498_	500m²	8	9.5	1	3.7	1	2	Moderate	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
PS2_Pond225_210618	Substantial qualities of woody debris and leaf litter.			Rigid hornwort					SJ7058676925
CH568445_L5498_PS2_Pond227_210618	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7059376934
Multiple_L6271_PS2_Pond240_280720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7075377235
Multiple_L5306_PS2_Pond244_280720	1,963m^2 Large pond within farmland and surrounded by willow shading the pond.	3	9.5	0	3.6	0	1	Very poor	Within SJ7068477343
Multiple_L5363_PS2_Pond262_020719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7058978153
CH561651_L5408_PS2_Pond274_190618	150m^2 Water level receded, 100% cover by duckweed.	12	9.3	0	3.83	0	3	Moderate	Within SJ7075578444
Multiple_L10068_PS2_Pond310_140818	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7095779951
CH258462_L5350_	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
PS2_Pond880_040719									SJ7097379980
CH517829_L6291_PS2Pond336_010819	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7104080859
CH517829_L6301_PS2_Pond1780_300720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7142580972
CH517829_L6301_PS2_Pond1198_300720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7170881230
CH517829_L6291_PS2_Pond343_010818	200m^2 Grazed sheep field, shaded, heavily poached and 50% duckweed cover.	2	9	0	4.4	0	2	Moderate	Within SJ7124681264
Multiple_L6301_PS2_Pond1781_300720	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7152081393
CH517829_L6291_PS2_Pond345_010818	300m^2 Heavily grazed and poached by sheep. High levels of algae and duckweed.	6	8.6	0	4.2	1	2	Poor	Within SJ7130581492

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH517829_L6290_PS2_Pond348_040719	182m^2 Pond in patch of mixed deciduous woodland with mostly bare banks.	1	9.5	0	2.3	0	0	Very poor	Within SJ7133781631
CH517829_L6290_PS2_Pond350_040719	435m^2 Pond on field boundary between sheep and potato fields in patch of mixed deciduous woodland.	6	8.7	2 Cyperus sedge Golden dock (*Rumex maritimus*)	3.9	0	2	Poor	Within SJ7130881643
CH517829_L6291_PS2_Pond879_020818	100m^2 Situated in a copse in rough pasture. Area around pond grazed by sheep. Substantial detritus and signs of receding water levels. 95% cover of duckweed.	0	9	0	4.1	2	2	Poor	Within SJ7135181717
CH517829_L6291_PS2_Pond877_020818	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7135581731
CH517829_L6291_PS2_Pond361_020818	160m^2 Situated in small copse in rough pasture. Heavily poached. 100%	1	9	0	3.2	0	1	Poor	Within SJ7139981926

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	cover by duckweed and lots of detritus.								
Multiple_L6291_PS2_Pond359_160719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7123781933
Multiple_L6291_PS2_Pond368_160719	50m^2 Pond on edge of grazed field, next to road. High algae cover.	5	9.1	0	3.9	0	2	Poor	Within SJ7126282158
CH517829_L6291_PS2_Pond372_100718	340m^2 Edge of arable (potatoes) field, small dry pond next to main pond, presumed to join in wet conditions.	3	10	0	3.5	0	2	Poor	Within SJ7152882278
CH547023_L5138_PS2_Pond378_160719	400m^2 Fenced pond with high algae cover and strong anoxic smell when sediment disturbed.	9	9.5	1 Ivy-leaved crowfoot (*Ranunculus hederaceus*)	3.9	0	3	Poor	Within SJ7150682649
CH547023_L5138_PS2_Pond380_160719	300m^2 Fenced pond with high algae cover and strong anoxic smell when sediment disturbed.	3	7.7	0	4.1	0	2	Poor	Within SJ7159182685

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH547023_L5138_PS2_Pond382_160719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7163482749
Multiple_L21140_PS2_Pond386_120718	500m² Large pond, mostly dominated by duckweed and surrounded by rhododendron, bamboo stand and mature trees. Grassy/steep banks. Fish present and leaf litter is abundant.	5	7.9	1 White water-lily (*Nymphaea alba*)	3.5	0	1	Poor	Within SJ7152383113
CH474608_L5269_PS2_Pond392_120718	300m² Fenced pond in grazed field. Grassy banks, mature trees and bare banks present. Extensive leaf litter.	4	8.6	1 Small pondweed (*Potamogeton berchtoldii*)	3.7	0	0	Poor	Within SJ7172983367
Multiple_L5269_PS2_Pond406_120718	350m² Fenced in, bare banks, mature trees surrounding and extensive leaf litter	4	10	0	3.5	0	2	Poor	Within SJ7160583519
CH474608_L5468_PS2_Pond411_170719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7174483566

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH177427_L5250_PS2_Pond436_170719	200m^2 Substantial large woody debris and leaf litter present. Anoxic smell when sediment disturbed	6	9.2	0	3.9	0	2	Poor	Within SJ7166483864
CH177427_L5250_PS2_Pond437_310718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7168183865
CH177427_L5250_PS2_Pond440_040820	360m^2 Pond within woodland which is fenced off to surrounding grazed fields.	2	7.3	0	3.8	0	1	Poor	Adjacent, south SJ7159283871
Multiple_L5788_PS2_Pond467_040820	180m^2 Garden pond covered in *Lemna*, surrounded by large trees and Iris.	6	8.77	0	3.5	0	0	Very poor	Within SJ7161184352
CH411235_L5912_PS2_Pond483_170718	250m^2 Situated in grazed field, with predominately open water.	11	7.9	1 White water-lily	4.6	3	2	Good	Within SJ7175884643
U203280_L5054_PS2_Pond499_170718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7173184856
Multiple_L5203_PS	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
2_Pond505_210820									SJ7211885024
Multiple_L5203_PS2_Pond508_210720	940m^2 Large pond in field grazed by sheep.	3	8.43	1 Round-fruited rush (*Juncus compressus*)	4.77	2	2	Moderate	Within SJ7215185041
Multiple_L5203_PS2_Pond1225_210720	350m^2 Large pond in field grazed by sheep, choked with vegetation and oil sheen on surface.	4	8.88	0	4.73	2	2	Moderate	Within SJ7225385158
Multiple_L5299_PS2_Pond531_170718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7162886057
Multiple_L5299_PS2_Pond533_210820	1,500m^2 Large, fenced pond within dairy farm, used at one end as cattle drink.	5	8.77	0	4	0	1	Poor	Within SJ7198186094

National Pond Survey (NPS)

3.3.57 None of the ponds that are likely to be significantly affected by the Proposed Scheme, i.e. those for which PSYM survey was undertaken, have been taken forward for NPS survey, due the fact they are adequately described by PSYM survey for the purpose of this assessment.

Discussion

3.3.58 Ponds Multiple_L6271_PS1_Pond239_121120 was within the good quality band for RA and was found to support higher scoring taxa but with a lower taxon richness. Ponds Multiple_L6271_PS1_Pond239_121120, CH171520_L5891_PS1_Pond276_301019, Multiple_L5389_PS1_Pond1179_251120 and CH272833_L5181_PS1_Pond512_091019 were within the good quality band for RA and were found to support higher scoring taxa but with a lower taxon richness.

3.3.59 The remaining ponds where RA was undertaken in MA03 were assessed to be in either the low or moderate quality bands. These ponds had either moderate macro-invertebrate taxon richness with some higher scoring taxa, such as alderflies and damselflies, or poor macro-invertebrate taxon richness and few high scoring taxa. Most of these ponds were situated in arable or grazed fields and some were heavily poached. Poaching and agricultural runoff have likely deteriorated water quality in these ponds making them less favourable to higher scoring macro-invertebrate taxa.

3.3.60 Pond CH568445_L5498_PS2_Pond208_200618 was found to support two uncommon plant species, which were rigid hornwort (*Ceratophyllum demersum*) and water chickweed (*Myosoton aquaticum*). An additional twelve plant species were recorded, including sedges (*Carex sp*.), marsh horsetail and floating-leaved duckweeds (*Lemna sp.*). The pond supported a macro-invertebrate assemblage of relatively high taxon richness, comprising caddisflies (Leptoceridae) and dragonfly (Aeshnidae) species, as well as more commonly occurring shrimp, waterbug, beetles, mayflies, alderflies, water snails, leeches and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.61 Pond CH568445_L5498_PS2_Pond209_200618 was found to support two uncommon plant species, which were rigid hornwort and water chickweed. An additional fifteen plant species were recorded, including sedges, marsh bedstraw and duckweeds. The pond supported a macro-invertebrate community of relatively high taxon richness, comprising mostly commonly occurring taxa, though higher scoring dragonflies (Aeshnidae) and caddisfies (Limnephilidae) were also recorded. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.62 Pond CH568445_L5498_PS2_Pond222_210618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Fifteen plant species were recorded, including fool's water-cress, water forget-me-not, European speedwell, duckweeds and

fennel pondweed (*Potamogeton pectinatus*). The pond supported a macro-invertebrate community of moderately high taxon richness, with dragonflies (Libellulidae), as well as more commonly occurring waterbugs, beetles, water snails, leeches and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.63 Pond CH568445_L5498_PS2_Pond224_210618 was found to support one uncommon plant species, which was rigid hornwort. An additional five plant species were recorded: common water-plantain, hairy willowherb, soft rush and duckweeds. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising mostly commonly occurring narrow-winged damselflies (Coenagriidae), waterbugs, beetles, mayflies, water snails, leeches and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for this pond was assessed as moderate.

3.3.64 Pond CH568445_L5498_PS2_Pond225_210618 was found to support one uncommon plant species, which was rigid hornwort. An additional seven plant species were recorded, including common water-plantain, sedges, soft rush, hairy willowherb and duckweeds. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising narrow-winged damselflies and commonly occurring waterbugs, beetles, mayfly, water snails, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.65 Pond Multiple_L5306_PS2_Pond244_280720 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Four plant species were recorded: soft rush, hairy willowherb, bittersweet and common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring waterbugs, beetles, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.66 Pond CH561651_L5408_PS2_Pond274_190618 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Several plant species were recorded, including creeping bentgrass, common water-plantain, hairy willowherb, water pepper, broad-leaved pondweed and duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring waterbugs, beetles, water snails, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.67 Pond CH517829_L6291_PS2_Pond343_010818 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two plant species were recorded, floating-leaved sweet-grass and common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising of mostly commonly occurring waterbugs, beetles and water snails. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.68 Pond CH517829_L6291_PS2_Pond345_010818 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Eight plant species were recorded, including common spike-rush, water mint, lesser spearwort (*Ranunculus flammula*) and floating-leaved amphibious bistort. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising mostly commonly occurring narrow-winged damselflies, waterbugs, beetles, leeches, water snails and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for this pond was assessed as poor.

3.3.69 Pond CH517829_L6290_PS2_Pond348_040719 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. One emergent plant species was recorded, which was bittersweet. Floating-leaved common duckweed and least duckweed were also recorded. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring water snails, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.70 Pond CH517829_L6290_PS2_Pond350_040719 was found to support two uncommon species, cyperus sedge and golden dock (*Rumex maritimus*), which is listed as a notable species in the Cheshire VC58 Rare Plant Register. An additional four submerged and emergent plant species were recorded, including bittersweet and water-starwort, as well as common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring waterbugs, beetles and water snails. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.71 Pond CH517829_L6291_PS2_Pond879_020818 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. One plant species was recorded, which was common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring waterbugs, beetles and leeches, though higher scoring mayflies and alderflies were also recorded. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.72 Pond CH517829_L6291_PS2_Pond361_020818 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. One plant species was recorded, which was common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising only commonly occurring waterbugs, beetles and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.73 Pond Multiple_L6291_PS2_Pond368_160719020818 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Five emergent plant species were recorded, including common water-plantain, bittersweet and branched burr-reed, as well as floating-leaved common duckweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising mostly commonly occurring waterbugs, beetles, mayflies, water snails, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.74 Pond CH517829_L6291_PS2_Pond372_100718 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Three plant species were recorded, including reed sweet grass (*Glyceria maxima*), hairy willowherb and common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising commonly occurring waterbugs, beetles, mayflies, water snails, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.75 Pond CH547023_L5138_PS2_Pond378_160719 was found to support one uncommon plant species, ivy-leaved crowfoot (*Ranunculus hederaceus*). An additional eight emergent plant species were recorded, including creeping bentgrass, floating sweet-grass and celery-leaved buttercup (*Ranunculus sceleratus*), as well as common duckweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising commonly occurring waterbugs, beetles, mayflies, water snails, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.76 Pond CH547023_L5138_PS2_Pond380_160719120718 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Three submerged or emergent plant species were recorded, which were floating sweet-grass, water starwort and an unidentified species of starwort, as well as common duckweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising commonly occurring shrimp, waterbugs, beetles, mayflies, water snails, water louse, non-biting midge and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.77 Pond Multiple_L21140_PS2_Pond386_120718 was found to support one uncommon plant species, white water-lily (*Nymphaea alba*), which was most likely planted. The invasive New Zealand pigmyweed (*Crassula helmsii*), which is listed on Schedule 9 of the Wildlife and Countryside Act in England and Wales, was also recorded, as were yellow iris, soft rush and common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising commonly occurring shrimp, waterbugs, beetles, water snails,

leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for this pond was assessed as poor.

3.3.78 Pond CH474608_L5269_PS2_Pond392_120718 was found to support one uncommon plant species, which was small pondweed (*Potamogeton berchtoldii*). An additional three emergent plant species were recorded: soft rush, bittersweet and reed canary grass. The pond supported a macro-invertebrate assemblage of fairly low taxon richness, comprising commonly occurring waterbugs, mayflies and leeches. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.79 Pond Multiple_L5269_PS2_Pond406_120718 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Four plant species were recorded, which were reed sweet grass, yellow iris, soft rush and bittersweet. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring waterbugs, beetles, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.80 Pond CH177427_L5250_PS2_Pond436_170719 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Six submerged or emergent plant species were recorded, including bittersweet, reed canary grass and an unidentified species of starwort, as well as floating-leaved common duckweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising commonly occurring shrimp, waterbugs, water beetles, water snail, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.81 Pond CH177427_L5250_PS2_Pond440_040820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two emergent plant species were recorded, soft rush and water mint. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring waterbugs, water beetles, mayflies, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.82 Pond Multiple_L5788_PS2_Pond467_040820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Several plant species were recorded, including pendulous sedge (*Carex pendula*), yellow iris, soft rush and water mint, as well as common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising commonly occurring shrimp, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.83 Pond CH411235_L5912_PS2_Pond483_170718 was found to support one uncommon plant species, white water-lily. An additional ten plant species were recorded, including sedges, water mint, reedmace and the invasive Himalayan balsam (*Impatiens glandulifera*). The pond supported a macro-invertebrate community of moderate to high taxon richness, comprising caddisflies (Leptoceridae and Limnephilidae), dragonflies and narrow-winged damselflies, as well as more commonly occurring waterbugs, beetles, mayflies, alderflies, water snails, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for this pond was assessed as good.

3.3.84 Pond Multiple_L5203_PS2_Pond508_210720 was found to support one uncommon species, which was round-fruited rush (*Juncus compressus*). An additional four plant species were also recorded: soft rush, amphibious bistort, common duckweed and the invasive Canadian pondweed (*Elodea canadensis*), which is listed on Schedule 9 of the Wildlife and Countryside Act in England and Wales. The pond supported a macro-invertebrate community of moderate to high taxon richness, comprising caddisflies (Leptoceridae) and narrow-winged damselflies, as well as more commonly occurring waterbugs, beetles, mayflies, alderflies, water snails, leeches and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for this pond was assessed as moderate.

3.3.85 Pond Multiple_L5203_PS2_Pond1225_210720 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Several plant species were recorded, including common water-plantain, floating sweet-grass and water forget-me-not, as well as floating leaved common duckweed and broad-leaved pondweed. The pond supported a macro-invertebrate community of moderate to high taxon richness, comprising dragonflies (Corduliidae), as well as more commonly occurring waterbugs, beetles, mayflies, alderflies and water snails. The ASPT score suggested probable moderate pollution and the PSYM quality category for this pond was assessed as moderate.

3.3.86 Pond Multiple_L5299_PS2_Pond533_210820 did not support plant species of conservation concern as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Six plant species were recorded: soft rush, hairy willowherb, water mint, bittersweet and an unidentified species of starwort as well as common duckweed. The pond supported a macro-invertebrate community of low taxon richness, comprising commonly occurring shrimps, waterbugs, beetles, water louse, water snails and non-biting midges. The ASPT score suggested probable moderate pollution and the PSYM quality category for this pond was assessed as poor.

Broomedge to Glazebrook (MA04)

Scoping

3.3.87 For the Broomedge to Glazebrook area (MA04), the desk study identified a total of 54 ponds, of which:

- 21 were either within or immediately adjacent to the area of land required for the construction of the Proposed Scheme; and
- 33 were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

Of these:

- 26 ponds have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- 14 ponds have been identified as requiring PSYM survey but could not be surveyed due to access constraints within the survey season
- seven ponds have been surveyed using RA having met screening requirements;
- seven ponds have been surveyed using PSYM having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.88 Table 50 identifies the ponds where rapid assessment methodology has been undertaken in the Broomedge to Glazebrook area (MA04).

Table 50: Summary of the results of the RA surveys for MA04[8]

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
CH351483_L5849_PS1_Pond547_270918	Large pond surrounded by tall ruderal and heavy broad-leaved pondweed coverage.	0	0, 1, 1	1	1	1	0	0	1	1	42	Good	16m east SJ7139387249
Multiple_L5970_PS1_Pond553_011020	Heavily shaded margins with sweet canary grass and rushes. Leaf litter and some duckweed present with inflow and out flow.	0	1, 0, 0	1	1	0	1	1	1	1	33	Moderate	5m north SJ7105988686
Multiple_L5831_PS2_Pond565_250719	Shaded pond with fallen trees and heavy duckweed in a patch of deciduous woodland between arable fields and a public house car park.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	1m west SJ7065589406
Multiple_L6038_PS1_Pond609_161019	Pond surrounded by vegetation in public house garden.	0	0, 0, 0	0	1	1	0	1	0	1	17	Low	12m west SJ6973391191

[8] 1= present, 0 = absent

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple_L10058_PS1_Pond1610_161019	Very small, concrete lined garden pond.	0	0, 0, 0	1	1	1	0	1	0	1	22	Moderate	92m east SJ6992691473
Multiple_L6095_PS2_Pond614_300719	Partially shaded pond surrounded by rank vegetation in arable field.	0	0, 1, 0	1	1	0	0	1	1	1	23	Moderate	18m south-east SJ6922791852
Multiple_L6060_PS1_Pond539_011020	Partially shaded pond with heavy duckweed cover and a very silty, soft substrate.	0	0, 0, 0	1	0	0	0	1	1	1	8	Low	68m west SJ7126586376

Predictive System for Multimetrics (PSYM)

3.3.89 PSYM survey was conducted on seven ponds in the Broomedge to Glazebrook area (MA04), see Table 51.

Table 51: Summary of the results of the PSYM surveys for MA04

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
MAN119953_L5966_PS2_Pond557_250719	1,400m^2 Large pond with emergent vegetation around the perimeter and open water in the centre, some shading.	5	8.6	2 Round-fruited rush White water-lily	4.4	0	1	Poor	Within SJ7084589272
Multiple_L5473_PS2_Pond559_250719	200m^2 Pond surrounded by tall ruderal vegetation and extensive duckweed cover, some shading.	5	9.4	1 Rigid hornwort	4.5	0	2	Poor	Within SJ7087689327
GM932657_L5178_PS2_Pond573_250719	40m^2 Appears to be more of a boundary ditch than a pond. Very overgrown and terrestrialised, either by succession or infilling by farmer.	3	9.2	0	3.7	0	1	Very poor	Within SJ7068889570
GM932657_L5178_PS2_Pond578_250719	200m^2 Shaded pond in copse of mixed deciduous woodland on boundary of arable field.	0	9	0	3	0	1	Very poor	Within SJ7065089681

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
Multiple_L5473_PS2_Pond577_180718	300m² Pond situated in arable field, surrounded by buffer of vegetation.	10	9.3	0	4.5	4	3	Good	Within SJ7076589682
GM932657_L5178_PS2_Pond580_240719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7065489715
Multiple_L5934_PS2_Pond622_060820	8,494m² Large pond in improved grassland with a vegetated island in centre.	6	7.3	0	3.8	0	0	Poor	Within SJ6871093048

National Pond Survey (NPS)

3.3.90 None of the ponds that are likely to be significantly affected by the Proposed Scheme, i.e. those for which PSYM survey was undertaken, have been taken forward for NPS survey, due the fact they are adequately described by PSYM survey for the purpose of this assessment.

Discussion

3.3.91 Ponds Multiple_L5831_PS2_Pond565_250719, Multiple _L6038_PS1_Pond609_161019 and Multiple_L6060_PS1_Pond539_011020 were within the low-quality band for RA as they were found to support no high scoring macro-invertebrate taxa and had a very low taxon richness. Extensive Japanese knotweed (*Reynoutria japonica*) was identified around pond Multiple_L5831_PS2_Pond565_250719. Ponds Multiple_L5970_PS1_Pond553_011020 and Multiple_L6095_PS2_Pond614_300719 were within the moderate quality band for RA and were found to support some higher scoring taxa with a higher taxon richness, whilst pond CH446766-CH614832_L5849_PS1_Pond547_270918 was within the good quality band and was found to support numerous higher scoring taxa.

3.3.92 Pond MAN119953_L5966_PS2_Pond557_250719 was found to support two uncommon species: round-fruited rush, which is considered near threatened and locally rare, and white water-lily. An additional six plant species were recorded, including yellow iris and hairy willowherb, as well as common duckweed and amphibious bistort. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising mostly commonly occurring taxa, though higher scoring caddisflies (Leptoceridae) were also recorded. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.93 Pond Multiple_L5473_PS2_Pond559_250719 was found to support one uncommon species, which was rigid hornwort. An additional six plant species were recorded, including sharp-flowered rush (*Juncus acutiflorus*), soft rush, reedmace and floating-leaved duckweeds. The pond supported a macro-invertebrate assemblage of fairly low taxon richness, comprising commonly occurring waterbugs, beetles, mayflies and water louse. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.94 Pond GM932657_L5178_PS2_Pond573_250719 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Four plants were recorded: soft rush, bittersweet, reed canary grass and common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising scavenger beetles, pond snails and ramshorn snails (Planorbidae). The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.95 Pond GM932657_L5178_PS2_Pond578_250719 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data

List or listed as a Species of Principal Importance. One plant species was recorded, which was common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising scavenger beetles, water louse and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.96 Pond GM932762-MAN140976_L5473_PS2_Pond 577_180718 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Thirteen plant species were recorded, including hairy willowherb, yellow iris, water pepper, common duckweed and fennel pondweed. The invasive species Himalayan Balsam was present. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising broad-winged damselflies (Calopterygidae), narrow-winged damselflies, dragonflies and caddisflies, as well as commonly occurring waterbugs, beetles, mayflies, alderflies, water snails, leeches and worms present. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.97 Pond Multiple_L5934_PS2_Pond622_060820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Twelve plant species were recorded, including New Zealand pygmyweed, water mint, reed canary grass and branched burr-reed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising caddisflies, as well as commonly occurring waterbugs, beetles, water louses, leeches and worms present. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

Risley to Bamfurlong (MA05)

Scoping

3.3.98 For the Risley to Bamfurlong area (MA05), the desk study identified a total of 183 ponds, of which:

- 70 were either within or immediately adjacent to the area of land required for the construction of the Proposed Scheme; and
- 113 were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

Of these:

- 72 have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- 43 ponds have been identified as requiring PSYM survey, but could not be surveyed due to access constraints within the survey season;
- 41 ponds have been surveyed using RA having met screening requirements;

- 27 ponds have been surveyed using PSYM having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.99 Table 52 identifies the ponds where rapid assessment methodology has been undertaken in the Risley to Bamfurlong area (MA05).

Table 52: Summary of the results of the RA surveys for MA05[9]

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple_L7070_PS1_Pond1260_171019	Large pond in Woodland Trust nature reserve. Dense bramble and rank vegetation, some emergent but otherwise open water and high clarity.	1	0, 0, 0	1	1	0	1	1	1	1	28	Moderate	92m south SJ6694093043
U207207_L4856_PS1_Pond895_290920	Pond in sheep grazed field surrounded by marshland and boggy margins.	0	0, 0, 0	0	0	0	0	0	0	1	1	Low	97m west SJ6728193606
CH510589_L4979_PS1_Pond638_031018	Large pond with anoxic sediment and heavy macrophyte coverage.	1	0, 0, 0	1	0	0	0	1	1	1	23	Moderate	16m south SJ6598494042
U2009895_L6110_PS1_Pond680_171019	Garden pond with fair amount of vegetation and buffer around pond.	1	0, 0, 0	1	1	1	0	0	1	1	27	Moderate	2m north-west SJ6489294821
CH609697_L58	Ditch along footpath rather	0	0, 0, 0	0	0	0	1	1	0	1	7	Low	16m north

[9] 1= present, 0 = absent

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
45_PS1_Pond681_230920	than pond. Sample taken in small pool next to outfall.												SJ6598494042
CH96746_L5938_PS1_Pond682_230920	Artificial pond, quite turbid with a possible artificial mixing system and ducks present.	0	0, 1, 0	1	1	0	1	1	0	1	27	Moderate	31m east SJ6428294901
Mutiple_L5357_PS1_Pond695_100919	Pond in woodland strip next to golf course.	0	0, 0, 0	1	1	1	1	1	0	1	22	Moderate	6m north-east SJ6416895410
Multiple_L5357_PS1_Pond696_220920	Shallow, boggy pond with lots or leaf litter and woody debris. Heavily shaded and surrounded by woodland.	0	0, 0, 0	0	0	0	1	1	0	1	7	Low	12m north-west SJ6435095486
Multiple_L5357_PS2_Pond697_310719	Large, shaded pond in deciduous woodland patch within golf course. Established Himalayan balsam	0	0, 0, 0	1	0	0	1	1	0	1	12	Low	54m north-west SJ6430695555
CH380494_L5230_PS1_Pond699_100919	Pond in a grassland field within copse of dense shrub vegetation and some mature trees. No emergent and very	0	0, 0, 0	1	1	1	0	1	0	1	17	Low	61m north-west SJ6352695720

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
	turbid water.												
CH380494_L5230_PS1_Pond707_100919	Pond in a grassland field within copse of dense shrub vegetation and some mature trees. No emergent and very turbid water.	0	0, 0, 0	1	1	0	0	0	0	1	11	Low	9m west SJ6362595920
CH526376_L5770_PS1_Pond711_100919	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	46m west SJ6315495980
CH382722_L5132_PS1_Pond712_220920	Heavily shaded pond with fly tipping at edge of pond. Dense Himalayan balsam and bankside vegetation.	0	0, 0, 0	1	0	0	1	1	1	1	13	Low	34m west SJ6349695980
MAN221207_L5398_PS1_Pond716_110919	Pond in arable field surrounded by several mature trees.	0	0, 0, 0	0	0	0	0	1	0	1	2	Low	20m north-west SJ6320396357
MAN221207_L5398_PS1_Pond717_240718	Heavily dredged fishing pond.	0	0, 0, 1	1	1	0	0	0	0	1	26	Moderate	40m north-west SJ6330796371
CH422183_L4993_PS1_Pond724_220920	Large pond with marginal shading from mature trees. Oil sheen on surface and	0	0, 0, 0	1	1	0	0	0	0	1	11	Low	5m west SJ6393096519

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
	rubbish in pond.												
Multiple_L4843_PS1_Pond726_220920	Muddy hollow in ground in horse field with some aquatic plants.	0	0, 0, 0	1	1	0	0	0	0	1	11	Low	45m north-east SJ6394996616
Multiple_L5331_PS1_Pond728_170920	Moderately shaded pond in arable land with moderate turbidity and some aquatic vegetation.	0	0, 0, 0	0	0	1	0	1	1	1	13	Low	67m west SJ6376896686
Multiple_L5331_PS1_Pond729_170920	Moderately shaded pond with emergent reeds, herbs and duckweed.	0	0, 0, 0	1	1	0	1	1	1	1	18	Moderate	98m south SJ6377096791
Multiple_L5398_PS1_Pond731_240718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2m south SJ6311196831
MAN171798_L5909_PS1_Pond737_160920	Unshaded pond choked with macrophytes and deep, silty substrate.	1	0, 0, 0	1	0	0	1	1	1	1	23	Moderate	93m west SJ6276297878
GM886606_L5890_PS1_Pond889_110919	Very polluted pond with significant runoff from chicken coop. No vegetation and a lot of dead material in pond.	0	0, 0, 0	0	0	0	1	0	0	1	6	Low	32m south-east SJ6257498293

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
GM785913_L5199_PS1_Pond762_010818	Small pond on arable field boundary.	0	0, 0, 0	1	1	1	1	1	1	1	23	Moderate	24m south-west SJ6266698296
GM194689_L5121_PS1_Pond768_120919	Enclosed and well-maintained pond with fish present.	1	0, 0, 1	1	1	0	0	0	0	1	36	Good	10m north SJ6234898434
GM705836_L5109_PS1_Pond769_160920	Moderately shaded pond surrounded by trees, with extensive leaf litter, turbid water and silty substrate	0	0, 0, 0	1	1	0	1	1	1	1	18	Moderate	45m east SJ6269398556
Multiple_L4159_PS1_Pond770_170920	Very shallow and mostly terrestrialised pond.	0	0, 0, 0	1	1	0	0	0	0	1	11	Low	22m south SJ6226298564
GM705836_L5109_PS1_Pond771_160920	Clay substrate, steep sides and extensive leaf litter.	0	0, 0, 0	0	1	0	1	1	1	1	13	Low	42m east SJ6272998566
Multiple_L5256_PS1_Pond775_150920	Ditch adjacent to pond which may be seasonally inundated.	0	0, 0, 0	1	0	0	1	1	1	1	13	Low	3m south SJ6176698664
Multiple_L21164_PS1_Pond886	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2m west

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
_021018													SJ6192798706
Multiple_L5134_PS1_Pond777_150920	Fishing pond surrounded by unimproved grassland.	0	1, 0, 1	1	1	1	1	1	1	1	48	Good	2m south SJ6273598730
MAN44131_L5134_PS1_Pond778_120919	Shallow pond in grazed field of short grassland.	0	0, 0, 0	1	1	1	1	0	0	1	26	Moderate	1m east SJ6254398750
GM587528_L5868_PS1_Pond799_201020	Moderately shaded pond with emergent reeds and rushes.	1	0, 0, 1	1	0	1	1	1	0	1	37	Good	66m east SJ6200999261
Multiple_L5050_PS1_Pond888_201020	Heavily shaded pond with lots of lead litter and woody debris.	0	0, 0, 0	0	0	0	1	1	0	1	7	Low	1m north SJ6189399332
GM707354_L5233_PS1_Pond802_061020	Pond802 and Pond803 connected, high rush and reed cover with moderating shading and high water level.	0	0, 0, 0	1	0	0	1	0	1	1	12	Low	65m east SJ6037699563
GM707354_L5233_PS1_Pond804_061020	Heavily shaded pond with moss covered earth banks and earthy substrate.	0	0, 0, 0	1	0	0	1	1	0	1	12	Low	48m east SJ6036599577
GM707354_L5233_PS1_Pond80	Moderately shaded pond with moderate turbidity and	0	0, 0, 0	1	1	0	0	1	0	1	17	Low	2m east

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
5_061020	leaf litter. Connected to ditch which connects Pond802 to Pond805.												SJ6032799585
GM707354_L5233_PS1_Pond809_061020	Drainage ditch at edge of field opens up to wider section where the pond is located. Very high sweet canary grass and Himalayan balsam coverage.	0	0, 0, 0	1	0	0	1	0	0	1	11	Low	2m west SJ6023599765
Multiple_L6100_PS1_Pond813_221020	Shallow pond completely colonised by reeds and wetland grasses.	0	0, 0, 0	1	0	1	0	0	0	1	11	Low	18m east SD6059400323
Multiple_L5332_PS1_Pond822_221020	Large pond fringed by reeds and some overhanging vegetation. Dense reedbeds on one side but open in middle.	0	0, 1, 1	1	1	1	1	1	1	1	48	Good	49m south-east SD6038701363
Multiple_L5332_PS1_Pond881_221020	Large marshy area with low water level but deep silt.	0	0, 0, 0	1	0	0	1	1	1	1	13	Low	12m north SD6026001624
Multiple_L5908_PS1_Pond825_	Very shaded pond with anoxic sediment and almost	0	0, 0, 1	1	0	0	0	1	0	1	17	Low	27m east SD5995102022

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
260919	100% coverage of common duckweed.												

Predictive System for Multimetrics (PSYM)

3.3.100 PSYM survey was conducted on 27 ponds in the Risley to Bamfurlong area (MA05), see Table 53.

Table 53: Summary of the results of the PSYM surveys for MA05

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
Multiple_L4513_PS2_Pond623_300719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6777493434
Multiple_L4513_PS2_Pond624_300719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6786893466

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH103951_L080_PS2_Pond636_190718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6679894059
CH510589_L5485_PS2_Pond640_190718	10,000m² Large, open pond in grassland.	15	7.9	3 Chara sp. (unidentified) Common club-rush (*Schoenoplectus lacustris*) White water-crowfoot	5.0	2	3	Moderate	Within SJ6623694148
CH510589_L5095_PS2_Pond642_190718	8,000m² Shallow, large, open pond in grassland.	12	9	3 Chara sp. (unidentified) White water-crowfoot Horned pondweed (*Zannichellia palustris*)	4.6	2	4	Good	Within SJ6669694174
Multiple_L21169_PS2	1,320m²	5	8.2	0	3.5	0	0	Very poor	Within

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
_Pond660_250820	Large, straight, rectangular fishing pond.								SJ6456794485
Multiple_L21169_PS2_Pond662_250820	2,820m^2 Large fishery pond.	6	7.3	0	3.8	0	0	Poor	Within SJ6470694541
Multiple_L21169_PS2_Pond665_250820	314m^2 Small pond located within fishery.	4	8.35	1 White water-lily	4	0	0	Very poor	Within SJ6469794626
Multiple_L21169_PS2_Pond673_250820	2,830m^2 Large, straight, rectangular fishery pond with very turbid. Fished from one side but opposite bank undisturbed.	7	8.6	0	4.25	1	0	Poor	Within SJ6458494644
Multiple_L5938_PS2_Pond689_060820	13m^2 Small pond in unimproved pasture field with minimal water and terrestrial vegetation.	1	0	1 Soft hornwort (*Ceratophyllum submersum*)	5	0	0	Very poor	Within SJ6407595223

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
Multiple_L21191_PS2_Pond1614_310719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6391395570
CH380494_L5230_PS2_Pond700_010819	160m^2 Two ponds within dense copse.	0	0	0	3.3	0	2	Very poor	Within SJ6369695836
CH380494_L5230_PS2_Pond702_010819	130m^2 Shaded pond with turbid water and significant layer of woody debris and leaf litter.	0	0	0	4	0	2	Very poor	Within SJ6367995855
Multiple_L4997_PS2_Pond720_010819	310m^2 Large pond within grassland, partially shaded. Damselfly and dragonfly identified at site.	3	0	0	2.6	0	1	Very poor	Within SJ6352896451
Multiple_L5398_PS2_Pond725_240718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6340696542
Multiple_L5398_PS2_Pond730_110919	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6321696799

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
GM785913_L5199_PS2_Pond761_010818	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ6280098247
Multiple_L4943_PS2_Pond765_050820	1,017m^2 Pond situated in garden surrounded by grass and wildflower meadow. Large mature island in centre of pond.	8	8.7	1 Round-fruited rush	5	0	0	Poor	Within SJ6257398373
Multiple_L5134_PS2_Pond1615_050820	314m^2 Fully poached pond in middle of horse field.	0	9	0	4	0	1	Very poor	Within SJ6266698673
Multiple_L5134_PS2_Pond779_050820	50m^2 Fully poached pond in middle of horse field.	1	0	0	4	0	1	Very poor	Within SJ6266798800
MAN44131_L5134_PS2_Pond781_130819	120m^2 Small depression in horse grazing field.	0	0	0	5	0	1	Very poor	Within SJ6256898822
GM917075_L5298_PS2_Pond794_260820	254m^2 Large heavily	2	7.3	0	3	0	1	Poor	Within SJ6173599210

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	shaded pond in an unmanaged field, surrounded by mature trees.								
GM917075_L5298_PS2_Pond796_260820	78m^2 Shallow heavily shaded pond in wild field, surrounded by mature trees, with minimal water.	5	8.6	0	4.5	0	0	Poor	Within SJ6178699220
GM917075_L5298_PS2_Pond797_260820	314m^2 Shallow heavily shaded pond in wild field, surrounded by mature trees, with minimal water but heavily vegetated.	5	9.17	0	3.4	0	1	Very poor	Within SJ6182799236
Multiple_L6100_PS2_Pond812_150818	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SD6034000239
Multiple_L6100_PS2_Pond814_060820	452m^2 Pond situated between arable and unimproved pasture	4	8.5	1 Blunt-leaved pondweed (*Potamogeton*	3.86	1	0	Poor	Within SD6040700567

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	field, with heavy tree cover and detritus.			*obtusifolius*)					
Multiple_L5332_PS2_Pond819_060820	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SD6015501184

National Pond Survey (NPS)

3.3.101 None of the ponds that are likely to be significantly affected by the Proposed Scheme, i.e. those for which PSYM survey was undertaken, have been taken forward for NPS survey, due the fact they are adequately described by PSYM survey for the purpose of this assessment.

Discussion

3.3.102 Ponds GM194689_L5121_PS1_Pond768_120919, Multiple_L5134_PS1_Pond777_150920, GM587528_L5868_PS1_Pond799_201020 and Multiple_L5332_PS1_Pond822_221020 were within the good quality band for RA and were found to support higher scoring macro-invertebrate taxa and had a higher taxon richness. Ponds Multiple_L7070_PS1_Pond1260_171019, CH510589_L4979_PS1_Pond638_031018, U2009895_L6110_PS1_Pond680_171019, CH96746_L5938_PS1_Pond682_230920, Mutiple_L5357_PS1_Pond695_100919, MAN221207_L5398_PS1_Pond717_240718, Multiple_L5331_PS1_Pond729_170920, MAN171798_L5909_PS1_Pond737_160920, GM785913_L5199_PS1_Pond762_010818, GM705836_L5109_PS1_Pond769_160920 and MAN44131_L5134_PS1_Pond778_120919 were within the moderate quality band for RA and were found to support some higher scoring macro-invertebrate taxa and had moderate taxon richness. The remaining pond surveys undertaken in MA05 were within the low-quality band for RA. These ponds had fewer high scoring taxa and lower taxon richness.

3.3.103 Pond CH510589_L5485_PS2_Pond640_190718 was found to support *Chara* sp. (unidentified). This genus covers a number of designated species, from the near threatened *Chara rudis* to several species designated as priority under Section 41 of the NERC Act: *Chara intermedia*, *Chara baltica*, *Chara canescens* and *Chara connivens*. *C. baltica*, *C. connivens* and *C. canescens* are brackish species and thus unlikely to be found in freshwater ponds. The remaining species of Principal Importance are not commonly distributed in the north of England. However, *C. rudis*, which is found in freshwater lakes and occasionally in smaller waters, ditches and small pools, is more commonly widespread across England. It is possible that this near threatened *Chara* species is present within this pond. The pond was also found to support another two uncommon plant species, which were common club-rush (*Schoenoplectus lacustris*) and white water-crowfoot. An additional 13 plant species were recorded, including the invasive New Zealand pygmyweed, compact rush, water mint, water blinks (*Montia fontana*) and Canadian pondweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising caddisflies, dragonflies and narrow-winged damselflies, as well as more commonly occurring waterbugs, beetles, mayflies, alderflies, water snails, leeches and worms present. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as moderate.

3.3.104 Pond CH510589_L5095_PS2_Pond642_190718 was found to support *Chara* sp and, as discussed above, it is possible that the near threatened *Chara rudis* was present. The pond was also found to support two other uncommon plant species, which were white water-

crowfoot and horned pondweed (*Zannichellia palustris*). An additional 11 plant species were recorded, including yellow iris, compact rush, water mint, star duckweed and fennel pondweed. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising caddisflies, dragonflies and narrow-winged damselflies, as well as more commonly occurring waterbugs, beetles, mayflies, alderflies, water snails, leeches and worms. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.105 Pond Multiple_L21169_PS2_Pond660_250820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Five emergent plant species were recorded, which were *Carex* sp., reed sweet grass, hairy willowherb, water mint and common reed (*Phragmites australis*). The pond supported a macro-invertebrate assemblage of low taxon richness, comprising waterbugs, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.106 Pond Multiple_L21169_PS2_Pond662_250820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Six emergent plant species were recorded: *Carex* sp., yellow iris, soft rush, hairy willowherb, water mint and common reed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising waterbugs, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.107 Pond Multiple_L21169_PS2_Pond665_250820 was found to support one uncommon plant species, which was white water-lily. An additional four emergent plant species were recorded, which were reed sweet grass, yellow iris, soft rush and hairy willowherb. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising waterbugs, water louse, non-biting midge and leeches. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.108 Pond Multiple_L21169_PS2_Pond673_250820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Several emergent plant species were recorded, including marsh bedstraw, reed sweet grass and soft rush. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising narrow-winged damselflies, as well as commonly occurring waterbugs, leeches and non-biting midge. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.109 Pond Multiple_L5938_PS2_Pond689_060820 was found to support one uncommon species, which was soft hornwort (*Ceratophyllum submersum*). The pond did not support any other plant species. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising two waterbugs. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.110 Pond CH380494_L5230_PS2_Pond700_010819 did not support any plant species, which was likely due to heavy shading. The pond supported a macro-invertebrate assemblage of fairly low taxon richness, comprising waterbugs, beetles, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.111 Pond CH380494_L5230_PS2_Pond702_010819 did not support any plant species, which was likely due to heavy shading. The pond supported a macro-invertebrate assemblage of fairly low taxon richness, comprising waterbugs, beetles, water louse and non-biting midge. The ASPT score suggested probable severe pollution and the PSYM quality category was assessed as very poor.

3.3.112 Pond Multiple_L4997_PS2_Pond720_010819 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Three emergent plant species were recorded, which were yellow iris, soft rush and hairy willowherb. The pond supported a macro-invertebrate assemblage of fairly low taxon richness, comprising beetles, water snails, water louse and non-biting midge. The ASPT score suggested probable severe pollution and the PSYM quality category was assessed as very poor.

3.3.113 Pond Multiple_L4943_PS2_Pond765_050820 was found to support one uncommon species, which was round-fruited rush. Several additional emergent plant species were also recorded, including yellow iris, purple loosestrife (*Lythrum salicaria*) and reedmace, as well as common duckweed. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising two waterbugs. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.114 Pond Multiple_L5134_PS2_Pond1615_050820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Only one floating-leaved plant species was recorded, which was common duckweed. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising two waterbug taxa and non-biting midges. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.115 Pond Multiple_L5134_PS2_Pond779_050820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Only one floating-leaved plant species was recorded, which was an unidentified species of water starwort. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising two waterbug taxa and non-biting midges. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.116 Pond MAN44131_L5134_PS2_Pond781_130819 did not support any aquatic plant species, which was likely due to the pond being dry most of the time. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising scavenger beetles and

hoverflies (Syrphidae), which are not considered in PSYM assessment. The ASPT score suggested probable clean water, though this is considered unreliable as the number of scoring taxa was so low, and the PSYM quality category for the pond was assessed as very poor.

3.3.117 Pond GM917075_L5298_PS2_Pond794_260820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Two emergent plant species were recorded, which were soft rush and common reed. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising beetles and non-biting midges. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.118 Pond GM917075_L5298_PS2_Pond796_260820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Five emergent plant species were recorded, which were soft rush, water horsetail, bittersweet, common reed and reedmace. The pond supported a macro-invertebrate assemblage of very low taxon richness, comprising shrimps and water louse. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as poor.

3.3.119 Pond GM917075_L5298_PS2_Pond797_260820 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Five emergent plants species were recorded, which were soft rush, water horsetail, hemp-agrimony (*Eupatorium cannabinum*), bittersweet and reedmace, as well as common duckweed. The pond supported a macro-invertebrate assemblage of low taxon richness, comprising shrimps, waterbugs, water louse, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as very poor.

3.3.120 Pond Multiple_L6100_PS2_Pond814_060820 was found to support one uncommon plant species, which was blunt-leaved pondweed (*Potamogeton obtusifolius*). An additional three emergent plant species were recorded, which were soft rush, hairy willowherb and reedmace, as well as common duckweed and broad-leaved pondweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising commonly occurring beetles, waterbugs, mayflies, water snails, water louse, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

Hulseheath to Manchester Airport (MA06)

Scoping

3.3.121 For the Hulseheath to Manchester Airport area (MA06), the desk study identified a total of 138 ponds, of which:

- 51 were either within or immediately adjacent to the area of land required for the construction of the Proposed Scheme; and
- 87 were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

3.3.122 Of these:

- 73 ponds have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- 40 ponds have been identified as requiring PSYM survey, but could not be surveyed due to access constraints within the survey season;
- 15 ponds have been surveyed using RA having met screening requirements;
- 11 ponds have been surveyed using PSYM having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.123 Table 54 identifies the ponds where rapid assessment methodology has been undertaken in the Hulseheath to Manchester Airport area (MA06).

Table 54: Summary of the results of the RA surveys for MA06[10]

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
CH480792_L5149_PS1_Pond425_211020	Large fishing pond with rushes, reeds, overhanging vegetation and lilies. Fish and ducks in pond.	0	0, 0, 1	1	1	1	1	1	0	1	32	Moderate	25m west SJ7936083746
CH480792_L5149_PS1_Pond1801_211020	Moderately shaded and turbid pond with muddy substrate and emergent reeds and rushes.	0	0, 0, 0	1	0	0	1	1	0	1	12	Low	61m south SJ7925383812
CH561505_L5425_PS1_Pond431_081020	Densely vegetated pond with lots of balsam and woody debris, mostly dry.	0	0, 0, 0	1	0	0	0	1	1	1	8	Low	68m west SJ7621683820
CH561505_L5425_PS1_Pond434_081020	Shallow pond with boggy margins and soft substrate. Fully shaded with surrounding woodland and heavy duckweed cover.	0	0, 0, 0	1	0	0	0	1	0	1	7	Low	92m south SJ7617383851

[10] 1= present, 0 = absent

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
CH561505_L5425_PS1_Pond457_101019	Pond within copse within arable field with lots of woody debris and heavily shaded.	0	0, 0, 0	1	1	1	0	0	0	1	21	Moderate	59m east SJ7560684242
Multiple_L5040_PS1_Pond459_221019	Large pond in copse at edge of rough pasture nature reserve.	0	0, 0, 0	0	0	0	1	1	1	1	8	Low	6m east SJ7971284290
Multiple_L6097_PS1_Pond460_231019	Pond with a lot of mud and duckweed and effluent pipe from horse stables entering pond	0	0, 1, 0	1	0	1	1	1	1	1	28	Moderate	71m west SJ7858084294
Multiple_L6097_PS1_Pond462_231019	Small pond with extremely anoxic sediments, duckweed and leaf litter.	0	0, 0, 0	1	0	1	1	1	0	1	17	Low	90m west SJ7855584299
Multiple_L6097_PS1_Pond463_231019	Ditch feeding into pond which has heavy leaf litter and rank bankside vegetation.	0	0, 0, 0	0	1	1	1	1	0	1	17	Low	87m west SJ7853184302
Multiple_L6097_PS1_Pond473_211020	Open pond in arable field fringed by rushes and fed by outfall.	1	0, 1, 1	1	1	1	0	1	1	1	53	Excellent	90m west SJ7893484428

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damesflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple_L6082_PS1_Pond872_151019	Large pond with emergent trees joined to Pond493 through flooding in field of rough pasture.	0	0, 0, 0	1	1	1	0	1	1	1	18	Moderate	24m east SJ8027884798
Multiple_L6082_PS1_Pond493_151019	Large pond with emergent trees joined to Pond872 through flooding in field of rough pasture.	0	0, 0, 0	1	1	1	0	1	1	1	18	Moderate	32m east SJ8025784802
Multiple_L6082_PS1_Pond502_151019	Shaded pond in rough pasture next to construction site.	0	0, 0, 0	1	1	1	0	1	0	1	17	Low	18m east SJ8033884896
CH363792_L5852_PS1_Pond509_071020	Very turbid artificial pond with lots of waterfowl and goats on banks.	0	0, 0, 0	0	1	0	0	0	0	1	6	Low	47m east SJ7255785072
CH325341_L5032_PS1_Pond511_071020	Heavily shaded pond in woodland with heavy duckweed cover, leaf litter and earthy substrate.	0	0, 0, 0	1	0	0	0	0	0	1	6	Low	78m west SJ7308585118

Predictive System for Multimetrics (PSYM)

3.3.124 PSYM survey was conducted on 11 ponds in the Hulseheath to Manchester Airport area (MA06), see Table 55.

Table 55: Summary of the results of the PSYM surveys for MA06

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
CH594233_L5342_PS2_Pond433_230719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7837683794
GM742096_L5884_PS2_Pond993_170718	306m² Clay lined pond.	6	8.7	2 Flowering rush (*Butomus umbellatus*) Lesser reedmace	4.6	1	3	Good	Within SJ7978484413
GM742096_L5884_PS2_Pond992_170718	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7980084413
Multiple_L5884_PS2_Pond1786_210720	620m² Large pond dominated by water solider (*Stratiotes*	9	9.5	3 Cyperus sedge Greater duckweed Water soldier	3.75	0	2	Poor	Within SJ7982184553

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	aloides) and shaded by willows. Fenced off within a field of unimproved grassland.								
CH561486_L5494_PS2_Pond482_101019	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7516084627
Multiple_L5045_PS2_Pond485_240719	200 m^2 Heavily shaded pond with thick, anoxic sediment. Located between grassland and road.	0	9	0	3.9	0	1	Poor	Within SJ8005284701
CH561486_L5494_PS2_Pond495_230719	30m^2 Pond in grazing field,	4	8.8	0	3.7	0	2	Poor	Within SJ7476684814

Ecology survey code	Pond/canal description	Plants			Invertebrates			General Quality Assessment (GQA)	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Number of submerged and emergent plant species	Trophic ranking score for submerged and emergent plants	Number and species of uncommon plant species	Average Score Per Taxon (ASPT)	Number of dragonfly (Odonata) and alderfly (Megaloptera) families	Number of beetle (Coleoptera) families		
	with 3m buffer of tall ruderal vegetation.								
CH561486_L5494_PS2_pond500_230719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ7475384863
GM506853_L43411_PS2_Pond528_240820	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ8047785671
GM506853_L43411_PS2_Pond529_240820	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ8048785683
GM79805_L5213_PS2_Pond530_240719	Pond dry	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Within SJ8016585885

National Pond Survey (NPS)

3.3.125 None of the ponds that are likely to be significantly affected by the Proposed Scheme, i.e. those for which PSYM survey was undertaken, have been taken forward for NPS survey, due the fact they are adequately described by PSYM survey for the purpose of this assessment.

Discussion

3.3.126 Pond Multiple_L6097_PS1_Pond473_211020 was within the excellent quality band for RA as it was found to support higher scoring macro-invertebrate taxa, such as caddisflies, dragonflies and damselflies, and a high taxon richness.

3.3.127 Ponds CH480792_L5149_PS1_Pond425_211020, CH561505_L5425_PS1_Pond457_101019, Multiple_L6097_PS1_Pond460_231019, Multiple_L6082_PS1_Pond872_151019 and Multiple_L6082_PS1_Pond493_151019 were within the moderate quality band for RA and were found to support some higher scoring macro-invertebrate taxa and had moderate taxon richness. The remaining pond surveys undertaken in MA06 were within the low-quality band for RA. These ponds had fewer high scoring taxa and lower taxon richness.

3.3.128 Pond GM742096_L5884_PS2_Pond993_170718 was found to support two uncommon plant species, which were flowering rush (*Butomus umbellatus*) and lesser reedmace. An additional four plant species were recorded, including yellow iris, rushes and the Canadian pondweed. The pond supported a macro-invertebrate assemblage of moderate taxon richness, comprising dragonflies and more commonly occurring shrimp, waterbugs, beetles and leeches. The ASPT score suggested probable moderate pollution and the PSYM quality category for the pond was assessed as good.

3.3.129 Pond Multiple_L5884_PS2_Pond1786_210720 was found to support three uncommon plant species: cyperus sedge, greater duckweed and water soldier. Several additional emergent plant species were also recorded, including yellow iris, soft rush and hairy willowherb, as well as floating leaved common duckweed and an unidentified species of submerged water starwort. The pond supported a macro-invertebrate community of fairly high taxon richness, comprising commonly occurring shrimp, beetles, waterbugs, mayflies, water snails, water louse, non-biting midge, leeches and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.130 Pond Multiple_L5045_PS2_Pond485_240719 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Only one plant species was recorded, which was common duckweed. The pond supported a macro-invertebrate community of moderate taxon richness, comprising caddisflies (Limnephilidae), as well as more commonly occurring shrimp, scavenger beetles, water snails, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

3.3.131 Pond CH561486_L5494_PS2_Pond495_230719 did not support plant species of conservation concern, as listed within the Cheshire VC58 Rare Plant Register, the Vascular Plant Red Data List or listed as a Species of Principal Importance. Seven plant species were recorded, including common water-plantain, hairy willowherb and broad-leaved pondweed, as well as floating-leaved duckweeds. The pond supported a macro-invertebrate assemblage of moderate to high taxon richness, comprising waterbugs, beetles, mayflies, water snails, water louse, non-biting midge and worms. The ASPT score suggested probable severe pollution and the PSYM quality category for the pond was assessed as poor.

Davenport Green to Ardwick (MA07)

Scoping

3.3.132 For the Davenport Green to Ardwick area (MA07), the desk study identified a total of eight ponds, of which:

- one was immediately adjacent to the area of land required for the construction of the Proposed Scheme; and
- seven were within a 100m buffer of the area of land required for the construction of the Proposed Scheme.

3.3.133 Of these:

- six ponds have been identified as requiring RA survey, but could not be surveyed due to access constraints within the survey season as described in Table 43;
- one pond was identified as requiring PSYM survey, but could not be surveyed due to access constraints within the survey season;
- one pond has been surveyed using RA having met screening requirements;
- no ponds have been surveyed using PSYM having met screening requirements; and
- no ponds have been surveyed using NPS methodology.

Rapid Assessment methodology

3.3.134 Table 56 identifies the ponds where rapid assessment methodology has been undertaken in the Davenport Green to Ardwick community area (MA07).

Table 56: Summary of the results of the RA surveys for MA07

Ecology survey code	Pond description	Invertebrates									Quality score	Quality band	Approximate distance from land required for the construction of the Proposed Scheme (m) and NGR (centrepoint)
		Caddis (Tricoptera)	Alderflies (Megaloptera), Dragonflies and Damselflies (Odonata)	Water Beetles (Coleoptera)	Water bugs (Hemiptera)	Mayflies (Ephemeroptera)	Shrimps (Amphipoda)	Waterlouse (Isopoda)	Water snails (Gastropoda)	Worms (Oligochaeta), Fly Larvae (Diptera) and Leeches (Hirudinea)			
Multiple _L51517_PS1 _Pond545_15 1019	Flooded pond at time of survey surrounded by pathway and fishing platforms.	0	0, 1, 1	1	1	1	1	1	1	1	48	Good	81m west SJ8084286910

Discussion

3.3.135 Pond Multiple _L51517_PS1_Pond545_151019 was within the good quality band for RA and was found to support higher scoring macro-invertebrate taxa such as dragonflies and damselflies and had a higher taxon richness. No other surveys have been conducted in the Davenport Green to Ardwick area (MA07).

Manchester Piccadilly Station (MA08)

Scoping

3.3.136 For the Manchester Piccadilly Station area (MA08), the desk study identified no ponds. As such, map series EC-11 does not include any pond data for MA08.

Discussion

3.3.137 No surveys have been conducted in the Manchester Piccadilly Station area (MA08).

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