River Habitat Survey (AfA286)

Dataset Description

River Habitat Survey (RHS) is the Environment Agency standard for collecting data on the physical character and quality of river habitats across the UK.

RHS is a standard field survey of a 500m stretch of river where data is collected in a replicable manner. At 50m intervals a 'spot-check' is conducted to record specific details about bank and channel physical attributes, man-made modifications, land uses and vegetation structure.

Since 1994 approximately 24,000 surveys have been carried out. The bulk of surveys were carried out between 1994 to 1997 and 2006 to 2008. Surveys are still carried out for specific drivers, for example assessing habitat availability and Water Framework Directive.

Surveys conducted prior to 2003 should not be compared with surveys conducted after 2003 as survey methodology changed significantly in 2003.

River names may be in English, Welsh or Gaelic.

Dimensions are intended to provide context for these habitat surveys. They should not be used for other purposes.

The following information has been excluded from the survey data supply because there is a risk that we might be disclosing personal data. If a customer has a particular interest in a particular site/survey we may be able to provide further details.

- General description of the survey
- Surveyors name
- Weirs/sluices, culverts, outfalls/intakes, dams, abstractions, hydroelectric power
- Where channel is choked by vegetation or a debris dam impeding flow
- Tipped materials and landfill
- Presence of sewage and pollution
- Gravel extraction

Price Category: EA Open Data

Attribute Name	Attribute Description
Table 1: Survey Details	
Survey ID	A survey is data collected in the field at an RHS site at a particular time. Each survey is designated a unique survey identification number. A RHS site can have one or more surveys associated with it.
Survey Status	Accepted survey.
Site ID (Site)	Unique site ID. A site is the actual geographical location of the 500m reach that a RHS survey covers.
NGR Site	10 figure National Grid Reference mid-point of reach.
Survey Date	Date and time of survey.
River (Site)	River name where RHS site is located.
Survey Form ID	RHS Survey form used to record survey information. The versions used are: 1994,1995,1996,1997 and 2003.

Attribute Name	Attribute Description
Spot One Is At	Spot check is either Upstream End (UE) or Downstream End (DE) of the site.
Surveyor ID	Accredited surveyor unique identifier.
Adverse Conditions	Indicates whether adverse conditions were present that prevented surveyor carrying our survey to best of his/her ability.
Site Surveyed From Description	Area surveyed e.g. left bank.
Bed is Visible Description	Description of river bed visibility e.g. partially.
Valley Form Description	Description of valley form e.g. no obvious valley sides.
Dist Flat Valley Bottom	Indicates if a distinct flat valley bottom is present.
Natural Terraces	Indicates if there are natural terraces present.
Predom Channel Description	In general this attribute is not populated.
Predominant Flow Type	In general this attribute is not populated.
No Pools	Number of pools.
No Riffles	Number of riffles.
No Unvegetated Point Bars	Number of unvegetated point bars.
No Vegetated Point Bars	Number of vegetated point bars.
Realigned Channel Description	Indicates if channel is obviously realigned and by what percentage of its length. Options are: No, Yes <33% or Yes ≥ 33%.
OverDeepened Channel Description	Indicates if channel is obviously over-deepened and by what percentage of its length. Options are: No, Yes <33% or Yes ≥ 33%.
Water Impounded Description	Indicates if channel is impounded by weir/dam and by what percentage of its length Options are: No, Yes <33% or Yes ≥ 33%.
Trees Left Description	Presence of trees on left bank e.g. continuous.
Trees Right Description	Presence of trees on left bank e.g. occasional clumps.
Left Banktop Height	In metres. Banktop is the first major break in slope above which cultivation or development is possible.
Left Bth Equals Bfh	Left banktop height is also bankfull height. Answer is either yes or no. Bankfull is the point where river first spills on the floodplain.
Left Embanked Height	In metres.
Channel Bankfull Width	In metres.
Channel Water Depth	In metres.
Channel Water Width	In metres.
Right Banktop Height	In metres.
Right Bth Equals Bfh	Right banktop height is also bankfull height. Answer is either yes or no.
Right Embanked Height	In metres.
Trashline Height	Height above water level where trashline is lower than banktop (m).
Trashline Width	Width from bank to bank where trashline height can be estimated (m).
Trashline - Bed Material Description	Either consolidated or unconsolidated.
Trashline - Location of Measure Description	Location where measurement was taken e.g. pool.
Notable Nuisance plants – bankface	(1) Giant hogweed (2) Japanese Knotweed (3) Himalayan Balsam (4) Other.
Notable Nuisance plants – banktop to 50m	(1) Giant hogweed (2) Japanese Knotweed (3) Himalayan Balsam (4) Other. Options are: Present, not present or extensive.
Alders	Options are: Present, not present or extensive.
Diseased Alders	Options are: Present, not present or extensive.

Table 2: Spotcheck Results

Key for physical attributes*:* AR artificial - BE bedrock – BI bio-engineering material – BM artificial berm - BO boulder - BR brick/laid stone - BW broken standing waves (white water) - CC concrete – CF chaotic flow - CH chute – CL clay - CO cobble – DR no flow (dry) – EB exposed bedrock - EC eroding cliff is sandy substrate - EA earth (crumbly) – EM embanked – FA fabric – FF free fall – FO ford (man-made) - G gravel - GA gabion – GP gravel/pebble - GS gravel/sand – MB unvegetated mid-channel bar – MI mature island - NB natural berm - NK not

Attribute Name	Attribute Description
known - NO none – NP no perceptible flow - NV not visible – P pebble - PB unvegetated point bar – PC poached - PCB poached (bare) - PE peat - RI reinforced – RO exposed boulders - RP rippled - RR rip-rap - RS resectioned – SA sand - SB unvegetated side bar - SC sandy cliff is sandy substrate – SI silt - SM smooth – SP sheet piling – UP upwelling - UW unbroken standing waves – VB vegetated mid-channel bar - VP vegetated point bar - VR vegetated rock – VS vegetated side bar - WP wood piling Key for land-use and vegetation structure: AW artificial open water - B bare - BL broadleaf/mixed woodland – BP broadleaf/mixed plantation - C complex – CP coniferous plantation - CW coniferous woodland - IG improved/semi-improved grassland – IL irrigated land - MH moorland/heath - NV not visible – OR orchard – OW natural open water - PG Parkland or gardens – RD rock, scree or sand dunes - RP rough unimproved grassland/pasture - S simple - SH scrub & shrubs - SU suburban/urban development - TH tall herb/rank vegetation - TL tilled land - U uniform – WL wetland Key for channel vegetation types: E (extensive - channel vegetation type must occupy at least 33% of the channel area within the 10m wide transect); N (not present); NV (not visible - water is very turbid and identification is impeded.); P (present - channel vegetation type must occupy at least 1% of the channel area within the 10m wide transect).	
Survey ID	Unique survey identification number.
Survey Status	Accepted survey.
Left bank	
Left Material	BE – BR – CC – CO - EA – GA – GS – NV – PE – RR
Modification	NK – NO – RI - RS
Marginal and Bank Features	EC – NO – NV – SB – SC - VP
Channel	
Channel Substrate	AR - BE - BO – CO - G - NV – P – PE – SI
Flow type	BW - CH - DR – NP - NV – RP – SM – UW
Channel Modifications	NO – RS
Channel Features	EB – NO – NV - RO – VR
Number of Sub-channels	Number of sub-channels for braided rivers only
Right bank	
Right Material	BE – BR – CO – EA – GA – GS – NV – PE – RR
Right Bank Modification	EM - NK – NO - PCB – RI – RS
Marginal and Bank Features	EC – NO – NV - PB - SB – SC - VP
Banktop Land Use and Vegetation Structure	
Land Use within 5m of Left Banktop	BL – IG – NV – PG – RP – SH – SU – TH - TL
Left Banktop Structure Within 1m	B - C - NV - S - U
Left Bank-face Structure	B – C – NV – S - U
Right Bank-face Structure	B – C – NV – S - U
Right Banktop Structure Within 1m	B – C – NV – S - U
Land Use within 5m of Right Banktop	BL – CW – IG – NV – PG – RP – SH – SU - TH
Channel vegetation types	
None or None Visible	None (✓) or Not Visible (NV)
Liverworts Mosses Lichens	Options: E; N; NV; P
Emergent Broad-leave Herbs	Options: E; N; NV; P
Emergent Reeds Sedges Rushes Grass Horsetails	Options: E; N; NV; P
Floating leaved (Rooted)	Options: E; N; NV; P
Free-floating	Options: E; N; NV; P
Amphibious	Options: E; N; NV; P
Submerged Broad-leaved	Options: E; N; NV; P
Submerged Linear-leaved	Options: E; N; NV; P
Submerged Fine-leaved	Options: E; N; NV; P

Attribute Name	Attribute Description
Filamentous algae	Options: E; N; NV; P
Table 3: Sweep-Up Feature Results	
Survey ID	Unique survey identification number.
Survey Status	Accepted survey.
Artificial Features	Numbers of major, intermediate and minor: Bridges; fords; deflectors/groynes/croys.
Land Use within 50 M of Banktop	For left bank and right bank: Broadleaf or Mixed Woodland Semi-Natural - broadleaf or mixed plantation - coniferous woodland - coniferous plantation - scrub and shrubs – orchard – wetland - moorland or heath - artificial open water - natural open water - rough unimproved grassland or pasture - improved or semi-improved grassland - tall herbs or rank vegetation - rock, scree or sand dunes - suburban or urban development - tilled land - irrigated land - parkland or gardens - not visible. Options: E; N; NV; P
Bank Profiles	For left bank and right bank: Vertical or undercut - vertical with toe - steep >45 degrees – gentle – composite - natural berm - resectioned or reprofiled - reinforced whole - reinforced top only - reinforced toe only - artificial two-stage - poached– embanked - set-back embankment. Options: E; N; NV; P
Tree Features	Shading of channel - overhanging boughs - exposed bankside roots - underwater tree roots - fallen leaves - large woody debris. Options: E; N; NV; P
Extent of Channel & Bank Features	Free fall flow - chute flow - broken standing waves - unbroken standing waves - rippled flow – upwelling - smooth flow - no perceptible flow - no flow (dry) - marginal deadwater - eroding cliffs - stable cliffs - exposed bedrock - exposed boulders - vegetated bedrock or boulders - unvegetated mid-channel bars - vegetated mid-channel bars - mature islands - unvegetated side bars - vegetated side bars - unvegetated point bars - vegetated point bars - unvegetated silt deposits - discrete unvegetated sand deposits - discrete unvegetated gravel deposits. Options: E; N; NV; P
Features of Special Interest	An entry is required in this box when no entries are made in any other boxes to confirm that no features of interest were observed. Either ticked or not ticked.
Features of Special Interest 1	Braided channels - side channels - natural waterfalls > 5m high - natural waterfalls < 5m high - Natural cascades - very large boulders - leafy debris - fringing reed banks - quaking banks - sink holes – backwaters - floodplain boulder deposits - water meadows – fens – bogs - wet woodlands – marshes – flushes - natural open water - other. Options: E; N; NV; P
Major Impacts	Presence of any of the following major impacts on the site: Drought - mill - road - rail - industry – housing - mining - quarrying - overdeepening - afforestation - fisheries management - silting –

<table>
<tr><th>Attribute Name</th><th>Attribute Description</th></tr>
<tr><td></td><td>waterlogging.

Y if present.</td></tr>
<tr><td>Recent Management</td><td>Presence of any of the following recent management activities on the site:

Dredging - bank mowing - weed cutting - enhancement - river rehabilitation – other.

Y if present.</td></tr>
<tr><td>Animals</td><td>Sightings of the following mammals, birds, insects and other taxa of interest:

Otter - mink - water vole - kingfisher - dipper - grey wagtail - sand martin - heron - dragonflies/damselflies

Y if present.</td></tr>
<tr><td colspan="2">Table 4: Sweep-up Spotcheck Results</td></tr>
<tr><td>Survey ID</td><td>Unique survey identification number.</td></tr>
<tr><td>Validation</td><td>Validation accepted.</td></tr>
<tr><td>Channel</td><td>Channel Substrate.</td></tr>
<tr><td>Channel Vegetation types</td><td></td></tr>
<tr><td>None or None Visible</td><td>None (✓) or Not Visible (NV)</td></tr>
<tr><td>Liverworts Mosses Lichens</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Emergent Broad-leaved Herbs</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Emergent Reeds Sedges Rushes Grass Horsetails</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Floating-leaved (rooted)</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Free-floating</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Amphibious</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Submerged Broad-leaved</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Submerged Linear-leaved</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Submerged Fine-leaved</td><td>Options: E; N; NV; P</td></tr>
<tr><td>Filamentous Algae</td><td>Options: E; N; NV; P</td></tr>
<tr><td colspan="2">Table 5: Survey Scores</td></tr>
<tr><td>Survey ID</td><td>Unique survey identification number.</td></tr>
<tr><td>NGR of Site</td><td>10 figure National Grid Reference.</td></tr>
<tr><td>River</td><td>River name on which survey was taken</td></tr>
<tr><td>HMS Score</td><td>Habitat Modification Score (HMS). Scoring system used to assess the degree of modification associated with a river. Scores are attributed to surveys based on the presence and extent of artificial modifications.</td></tr>
<tr><td>HMS Class</td><td>HMS class descriptions. The following are indicators of the extent to which the habitat has been modified

<table>
<tr><th>HM Class</th><th>HM class description</th><th>HM Score</th></tr>
<tr><td>1</td><td>Pristine/semi-natural</td><td>0-16</td></tr>
<tr><td>2</td><td>Predominantly unmodified</td><td>17-199</td></tr>
<tr><td>3</td><td>Obviously modified</td><td>200-499</td></tr>
<tr><td>4</td><td>Significantly modified</td><td>500-1399</td></tr>
<tr><td>5</td><td>Severely modified</td><td>1400+</td></tr>
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<table>
<tr><th>Attribute Name</th><th>Attribute Description</th></tr>
<tr><td>HQA</td><td>Habitat Quality Assessment (HQA). Scoring system is a broad measure of the diversity of natural habitats of a site. The HQA scores are determined by the presence and extent of habitat features of known wildlife interests that have been recorded during the RHS survey.

<table><tr><th>HQA Class</th><th>Description</th></tr><tr><td>1</td><td>Excellent</td></tr><tr><td>2</td><td>Good</td></tr><tr><td>3</td><td>Moderate</td></tr><tr><td>4</td><td>Poor</td></tr><tr><td>5</td><td>Extremely poor</td></tr></table>
The HQA score for a site is the total of all the component HQA scores.</td></tr>
<tr><td>HQA Adjusted</td><td>Statistical adjustment to bring surveys carried out in 1994 in line with other survey years.</td></tr>
<tr><td>PCA1</td><td>Principle Component Analysis (PCA). Allows surveys to be linked to sites of similar types.</td></tr>
<tr><td>PCA2</td><td>Allows surveys to be linked to sites of similar types.</td></tr>
<tr><td>HMS Sub Scores</td><td>HMS sub scores for: Bank and bed reinforcement – bank and bed resectioning - berms and embankment - bridges – poaching – ford - outfalls/deflectors</td></tr>
<tr><td>HQA Sub Score</td><td>HQA sub scores for: Flow types – channel substrates – channel features - bank features - bank vegetation – in stream channel vegetation – land-use – trees and associated features – special features.</td></tr>
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