

Instructions for calculating the Habitat Quality Assessment Score using River Habitat Survey data

These rules were derived by the Environment Agency in 1998 and were adapted to account for changing survey formats over the years.

The HQA score for a site is the total of all the component scores in the categories listed below.

FLOW TYPES

Each predominant flow-type recorded scores 1; if it occurs at 2 - 3 spot-checks, it scores 2; if it occurs at 4 or more spot-checks, it scores 3. If only one type occurs at all 10 spot-checks, the score will be 3. Dry channel scores 0.

If recorded in the sweep-up (section K), score 1 for each of the flow features provided that the equivalent flow-type has not been recorded in any spot-check:

Score 1 for marginal deadwater recorded as present or extensive in the sweep-up.

CHANNEL SUBSTRATES

Each predominant natural substrate type (i.e. bedrock, boulder, cobble, gravel/pebble, sand, silt, clay, peat) recorded scores 1; if it occurs at 2 - 3 spot-checks it scores 2; if it occurs at 4 or more spot-checks, it scores 3.

If only one predominant type is recorded at all 10 spot-checks, the score will be 3.

Extra substrate(s) recorded (on the 1997-2003 forms) do not count.

“Not visible” does not score, unless recorded at 6 or more spot-checks, when it scores 1.

CHANNEL FEATURES

Each ‘natural’ channel feature (i.e. exposed bedrock/boulders, unvegetated mid-channel bar, vegetated mid-channel bar, mature island) recorded scores 1; if it occurs at 2-3 spot-checks, it scores 2; if it occurs at 4 or more spot-checks, it scores 3. *[NB: more than one feature can occur at a single spot-check.]*

If any of these features are not recorded in the spot-checks, but occur as present or extensive in the sweep-up, then they score 1 each.

BANK FEATURES

Each bank is scored separately.

Each natural feature (i.e. eroding earth cliff, stable earth cliff, unvegetated point bar, vegetated point bar, unvegetated side-bar, vegetated side-bar) recorded scores 1; if it occurs at 2 - 3 spot checks, it scores 2; if it occurs at 4 or more spot-checks, it scores 3. *[NB: more than one feature can be recorded at a single spot-check. Do not record natural berms]*

If any of unvegetated point bar, vegetated point bar, unvegetated side bar or vegetated side bar are not recorded in the spot-checks, but appear in the sweep-up, then they will score 1 each.

BANK VEGETATION STRUCTURE

Only simple and complex vegetation structure score. Both score equally.

Each bank is scored separately. Bankface and banktop are scored separately.

Bankface

If simple or complex is recorded at one spot-check it scores 1; if simple and/or complex recorded at 2 – 3 spot-checks, score 2; if simple and/or complex occur at 4 or more spot-checks, the score will be 3.

Banktop

If simple or complex is recorded at one spot-check it scores 1; if simple and/or complex recorded at 2 – 3 spot-checks, score 2; if simple and/or complex occur at 4 or more spot-checks, the score will be 3.

POINT BARS

Add together the total number of unvegetated and vegetated point bars (*front page of form*).

Score 1 if the total is 3 - 8; score 2 for 9 or more.

IN-STREAM CHANNEL VEGETATION

In-stream channel vegetation types are grouped into six categories for scoring purposes: (i) liverworts and mosses; (ii) emergent broad-leaved herbs; (iii) emergent reeds/rushes/sedges; (iv) floating-leaved, free-floating and amphibious; (v) submerged broad-leaved; and (vi) submerged linear and fine-leaved.

Score 1 for each category recorded within the site, and 2 for those categories recorded either as present or extensive at 4 or more spot-checks.

Filamentous algae do not score.

LAND-USE WITHIN 50m

Each bank is scored separately. Only the sweep-up information is used.

Only broadleaf woodland (or native pinewood), moorland/heath, and wetland score.

Broadleaf woodland, moorland/heath and wetland each score 1 if present, and score 2 if extensive.

If broadleaf woodland (or native pinewood) or wetland, alone or together are the only land-use categories recorded, then score 7 for that bank. For naturally treeless sites, moorland/heath or equivalent qualifies.

TREES AND ASSOCIATED FEATURES

Trees

Each bank is scored separately.

Score 1 if trees are isolated/scattered; score 2 if regularly-spaced or occasional clumps; score 3 if semi-continuous or continuous.

Associated features

Overhanging boughs, exposed bankside roots, underwater tree roots, coarse woody debris and fallen trees each score 1 if present. Extensive exposed bankside roots and underwater tree roots each score 2. Extensive coarse woody debris score 3. Extensive fallen trees score 5.

SPECIAL FEATURES

Score 5 if any of the following have been recorded: waterfall more than 5m high, braided or side channel, debris dams, natural open water, fen, carr, flush, bog. *[Score 5 regardless of number of special features present.]*

HABITAT QUALITY ASSESSMENT ADJUSTED FOR 1994 DATA.

The data recorded in the 1994 survey is different from the data recorded in the subsequent year for flow-types, channel vegetation and special features.

To enable the comparison of 1994 sites to the rest of the reference network, new rules for flow-types and channel vegetation were derived and applied to all reference sites. The resulting score is called HQA adjusted for 1994 data.

FLOW-TYPES 1994 ADJUSTED

For 1995, 1996, 1997 and 2003 data, convert all flow-types according to the following rules:

Convert from	To	Description
CA, FF, CH	CA	Cascading flow
TW, BW, CF, UP	TW	Torrential whitewater flow
RF, UW	RF	Riffle flow
AL, RP, SM	AL	Approximately laminar flow
ST, PO, PD, NP	NP	No perceptible flow
DR, NO	DR	Dry (no flow)

Each predominant recoded flow-type scores 1; if it occurs at 2 - 3 spot-checks, it scores 2; if it occurs at 4 or more spot-checks, it scores 3. If only one type occurs at all 10 spot-checks, the score will be 3.

Dry channel scores 0.

If recorded in the sweep-up, score 1 for each of the following channel features provided that an equivalent flow-type has not been recorded in any spot-check. Use the table below as a help.

If the following features are present in the sweep-up				AND This flow-type is not in the spot-checks	THEN Score
1994	1995	1996/97	2003		
Wat/Cas	Wat or Cas	Wat or Cas	Free fall or Chute	CA	1
Torr. Flow	Rapids	Rapids	Brok. stand. wave	TW	1
Laminar	Glide or run	Glide or run	Ripp. or smooth	AL	1
No riffles	No riffles	No riffles	No riffles	RF	1
No pools	No pools	No pools	No pools	NP	1

CHANNEL VEGETATION 1994 ADJUSTED

Apply the same rules as for the normal assessment of channel vegetation but group submerged broad-leaved, fine-leaved and linear-leaved into a single category. To do so, choose the highest value for any of the category represented.

Final HQA adjusted score: add the previous scores to the 95-97 HQA score and subtract the values for 95-97 Flow-Types, 95-97 Channel Vegetation and 95-97 Special Features.

Important note: HQA scores should only be used when comparing sites of similar river type or character. For instance, sites in naturally treeless exposed or mountain areas should not be compared with those in lowland wooded valleys.