

Environment Agency Biodiversity Net Gain



Left: Rochester Riverside; Right: River Dour

Presentation contents

- The Rivers Metric tool – an overview
- Environment Agency requirements/targets for BNG



Rivers & Streams: What's included?

- Includes:
 - 'Main River' and 'Ordinary Watercourses'
 - Canals, canalised rivers and ephemeral watercourses (e.g. winterbournes & headwaters)
 - Ditches - “*artificially created linear water-conveyancing features <5m wide*” (not assessed using MoRPh survey)
 - Can not be 'traded' with other habitats
- Does not include:
 - Coastal, or estuarine reaches.



Rivers & Streams: Assessment

Existing river type			Habitat distinctiveness		Habitat condition		Strategic significance			Watercourse encroachment		Riparian encroachment		Suggested action	Ecological baseline
Baseline ref	River type	Length KM	Distinctiveness	Score	Condition	Score	Strategic significance	Strategic significance	Strategic position multiplier	Extent of encroachment	Multiplier	Extent of encroachment	Multiplier		Total river units
1															
2															
3															

Various elements contribute to the calculation of the Rivers & Stream Biodiversity Units (RBUs):

1. Distinctiveness
 2. Condition
 3. Strategic Significance
 4. Spatial Location
 5. Time to target condition
 6. Difficulty of creation / enhancement
 7. Watercourse encroachment
 8. Riparian encroachment
- Distinctiveness & Condition scores have the heaviest weighting in determining the overall RBU value.

Rivers & Streams: Distinctiveness

The distinctiveness assessment is desk-based & uses the **Priority Habitats** classification, as defined under **Section 41 of the Natural Environmental and Rural Communities Act, 2006**.

Priority River Habitats:

- High hydro-morphological / ecological status
- **Chalk rivers**
- Watercourses with water crowfoot assemblages (Habs Directive Annex I)
- Active shingle rivers
- **Headwater streams**

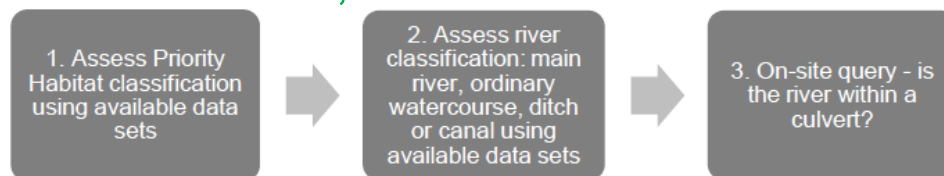


FIGURE 8-1: Recommended stages to follow when assessing Distinctiveness⁵⁶

TABLE 8-2: Distinctiveness categories for rivers and streams

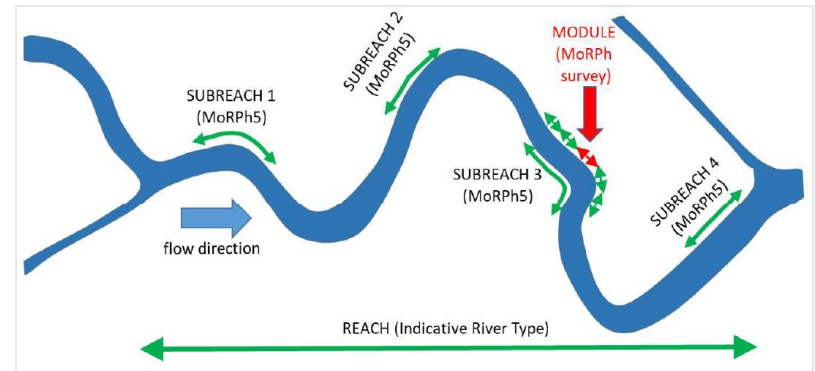
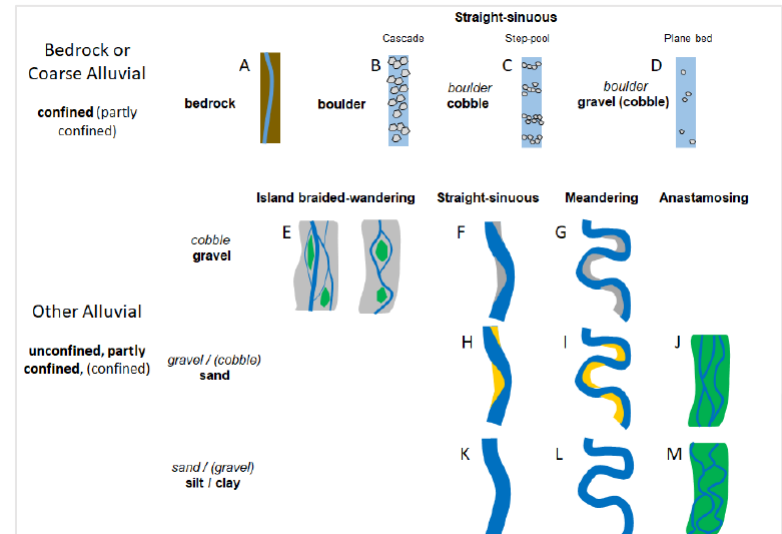
Distinctiveness	Metric Description	Weighting	Description
Very High	Is on the Priority Habitat Rivers map	8	Rivers – Priority Habitat Rivers and streams of high hydro-morphological & ecological status
High	Rivers and streams (Other)	6	All other rivers streams that are not classified as Priority River Habitat
Medium	Canals Ditch	4	Canal Ditch (see above)
Low	Culvert	2	A covered channel or pipe designed to prevent the obstruction of a watercourse or drainage path by an artificial construction ⁵⁷ .

Rivers & Streams: Condition

Describes on-site physical habitat diversity.

Condition is assessed via the **River Metric Survey** – which is split into:

1. A reach-scale desk-based assessment to determine 'River Type'.
2. A sub reach-scale field-based assessment (based on MoRPh methodology), in which various river features that have been assigned pre-determined weightings (both positive and negative) are recorded.



Rivers & Streams: Condition

The survey captures: sediment, vegetation, morphology and the extent and severity of physical modification to the channel, banks and 10m riparian zone.



Rivers & Streams: Condition

1. Range of condition scores (weightings) has been aligned with the area metric (1-3 instead of 1-5).

Classification	Weighting
Good	3
Fairly Good	2.5
Moderate	2
Fairly Poor	1.5
Poor	1

2. A default condition score of 1 (**Poor**) is entered where the river is in a **culvert**.

3. **Ditches** have a separate (non-MoRPh) condition assessment sheet



Rivers & Streams: Riparian encroachment

Riparian zone is defined as a 10m zone from top of the riverbank.

It would naturally be periodically flooded, and directly influences the hydrological, geomorphological and biological functions and processes within the river channel.

Table 8-6 Description of riparian encroachment bands

Riparian encroachment band	Multiplier	Description
No encroachment	1.00	No development within 10m of bank top
Minor	0.95	Any development 8-10m from bank-top (up to 100% of area) or where development footprint occupies 0-10% of the riparian zone area 4-10m from bank-top.
Moderate	0.85	Any development where footprint occupies between 10-25% of the riparian zone area 4-10m from bank-top.
Major	0.75	Any development 0-4m from bank-top (<i>except a maximum of 5% footprint for amenity features</i>) or where development footprint occupies >25% of the total riparian zone area.



Rivers & Streams: Watercourse encroachment

Watercourse encroachment multiplier helps recognise when structures act as an impediment to natural river morphology and ecological mobility within the watercourse.

Interventions to improve the 'condition' of the river (e.g. woody material), are **excluded** from in-watercourse encroachment multipliers.

TABLE 8-7 Description of in-watercourse encroachment bands.

In-watercourse encroachment band	Multiplier	Description	Examples
No encroachment	1.0	<5% bank length comprising an engineered bank revetment and no encroachment into channel	
Minor	0.8	5%-20% bank length comprising engineered bank revetment or encroachment up to 10% channel width	Small headwalls, jetties, pontoons
Major	0.5	>20% bank length comprising an engineered bank revetment or encroachment >10% of the channel width	Weirs, large headwalls, bank revetment.



Rivers Metric take home messages

- Watercourses will need full assessment for both ecology and the BNG Rivers metric, to provide both ecology advice and BNG baseline
- Developments within 10m of the 'top of bank' will be encouraged to
 - Place development at least 10m from the bank top
 - Create more diverse riverside habitats and natural banks
 - Restore more in-channel features
 - Aim for a general reduction in man-made environments in the watercourse corridor



BNG

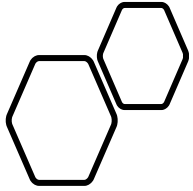
What is the EA contribution?

- Capital schemes to protect property from flooding – includes a presumption to consider Natural Flood Management
- The EA has an ambition to achieve at least 20% net gain through its capital programme
- Also looking at achieving BNG through our revenue programme
- Environment Programme and Flood Risk Programme integrated
- Carbon Net Zero - EA ambition by 2030
- WFD targets and Catchment Partnership projects
- A refreshed focus on chalk streams

Capital schemes

- Large repairs or replacements of embankments
- Rebuild of walls or larger urban defences





Capital schemes

- Replacing or rebuilding pumping stations and outfall
- Weirs and other flow control structures



Capital schemes

- Natural Flood Management
- Managed Realignment
- Freshwater habitat creation as compensatory habitat



Capital Schemes Contribution to Kent Nature Targets

- Will require a minimum of 20% net gain along rivers – which will push for significant improvements.
- Will require modest terrestrial net gains, but significantly more habitat if we aim to achieve carbon net zero.
- Opportunity to integrate ours and partner objectives to help deliver projects

