Biodiversity Net Gain Practitioner (Reviewer) Training:

The Watercourse Metric

Lucy Shuker (Cartographer Studios)

March 2023

Environment Agency

Content

1. **Introductions**
2. **Learning outcomes**
3. **BNG and watercourses in the wider context**
4. **The Watercourse Metric: a checklist for reviewers**
5. **Case studies:** good and bad practice
6. **Where to go for more information**
7. **Q&A**
8. **Closing messages**

NOTE - This training is for attendees with a basic understanding of Biodiversity Net Gain and the Biodiversity Metric.

Environment Agency

Learning outcomes

By the end of this training, attendees will:

1. Understand the Biodiversity Net Gain Watercourse Metric and the rules and principles underpinning its use

2. Be able to confidently review Watercourse Metric information submitted as part of a planning application

3. Understand the opportunities arising from the Watercourse Metric in the context of BNG and wider environmental policy

4. Be able to identify mis-use, poor or non-optimal use of the Watercourse Metric *(e.g. missed opportunities and bad practices,).*

Environment Agency

Biodiversity Net Gain wider context

BNG for watercourses is integral to:

Nature recovery

- rivers and streams, canal and ditch networks all provide connectivity within wider natural landscapes

Climate resilience

- river and stream networks provide essential cooling, refuge and sustenance to ecological and human communities

Sustainable water management

- making space for water reduces flood risk and drought extremes; and increases habitat diversity

Environment Agency

Biodiversity Net Gain wider context

BNG policy alignment:

Nature recovery

- Nature Recovery Networks
- Local Nature Recovery Strategies
- *Watercourses = network connectivity*

Climate resilience

- Blue and Green Infrastructure *provides vital cooling*
- Well-designed SuDS *provide biodiversity and wider benefits*

Sustainable water management

- Nature Based Solutions *help to reduce flood risk:* NPPF para 120(a)
- River Basin Plan measures *can contribute towards Net Gain:* NPPF 174(e)

Increasing watercourse connectivity and improvements provides Multiple Benefits

Environment Agency

Biodiversity Net Gain wider context

BNG policy alignment:

Nature recovery

- Nature Recovery Networks

120a

Planning policies and decisions should... encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains - such as developments that would enable new habitat creation or improve public access to the countryside.

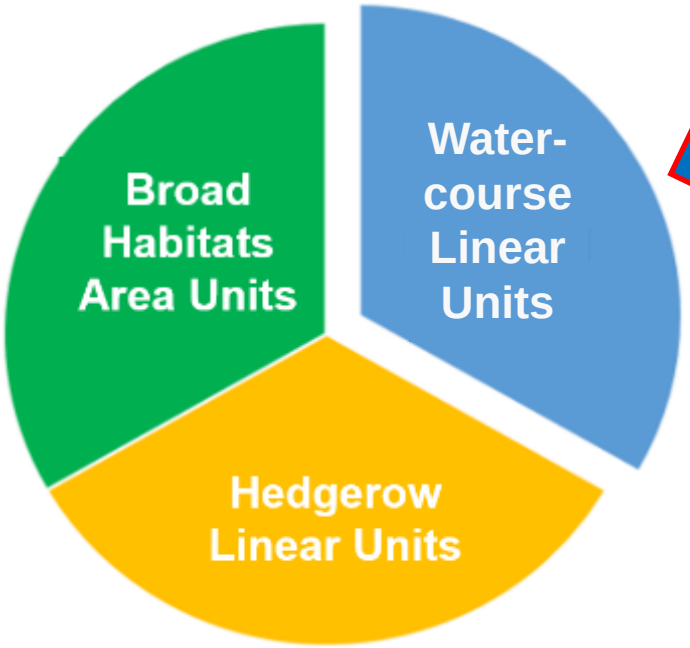
NPPF Paragraph 120(a)

Increasing watercourse connectivity and improvements provides Multiple Benefits

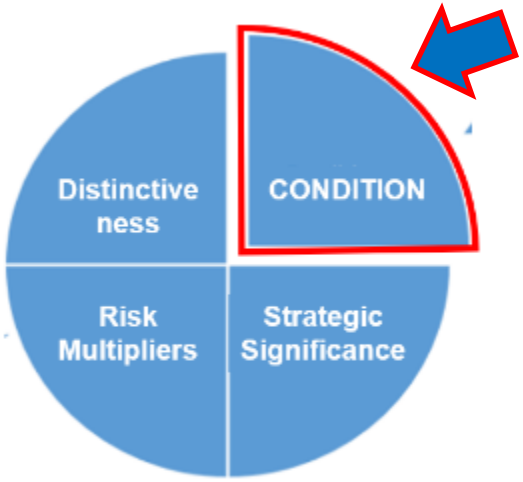
Environment Agency

Biodiversity Metric and Watercourses

Biodiversity Metric



Watercourse Metric



River Condition Assessment (RCA)*
- Priority rivers & streams
- Other rivers & streams
- Canals

- **Ditch Condition Assessment**
  - Ditches

- **Pre-set Condition**
  - Culverts

BM User guides, technical supplements & Calculation Tool

http://publications.naturalengland.org.uk/

* http://modularriversurvey.org/

Modular River Survey

The Watercourse Metric

Why a separate metric?

- Watercourses = Linear
- River condition is process driven
- A different Condition Assessment approach is required
- **What is the same?**
- BNG principles and rules
- BNG limitations

What is different?

- Watercourse Metric calculations:
  - *Distinctiveness types*
  - *Condition assessments*
  - *Encroachment multipliers*

Environment Agency

Top 10 Biodiversity Metric principles & rules - significance for rivers, streams & all watercourses

		Significance …
1	**Apply the Mitigation Hierarchy**	On-site Net Gain = primary aim; Off-site Net Gain => deliver measures identified in Local Strategy/Catchment Action Plan
2	**Avoid losing biodiversity that cannot be offset elsewhere**	Priority river habitats are assigned to 'very high distinctiveness' band: all losses should be avoided and impacts from development will require bespoke compensation
3	**Be inclusive and equitable**	Connect with and/or consider CaBA* NGO partners & local river action groups especially for legacy elements
4	**Address risks**	Consider risks and uncertainties for design, implementation and management
5	**Make measurable Net Gains**	Are predicted conditions are achievable for river or watercourse type?

		Significance …
6	**Achieve the best outcomes for biodiversity**	Watercourses are integral elements flowing through the wider landscape. Wildlife depend upon healthy river and wetland systems
7	**Be additional**	Build upon and complement other CaBA* activities. Working with natural processes adds wider benefits
8	**Create a Net Gain legacy**	River or watercourse recovery may require more or less management. Monitoring and inclusion is key to sustainable outcomes
9	**Optimise sustainability**	Consider wider factors in sustaining physical habitats onsite as part of a healthy river system
10	**Be transparent**	Consider local and reach scale information as a minimum, ideally (sub)catchment wide information should be considered

*CaBA = Catchment Based Approach

Top 3 Biodiversity Metric limitations - significance for rivers, streams & all watercourses..

		Significance …
1	**Putting a 'single number' on nature is impossible**	The biodiversity metric is based on proxy indicators For watercourses, habitat features not indicator species are used for condition assessment
2	**Metric output interpretation requires professional expertise & common sense**	Watercourse condition assessments depend upon surveyor expert judgement.
		The River Condition Assessment (RCA) method provides a standard tool that accredited surveyors should apply appropriately to specific contexts
3	**Different habitats require different approaches**	All types of watercourse metric applications require appropriate expertise & evidence

Environment Agency

The Watercourse Metric

Why a separate metric?

- Watercourses = Linear
- River condition is process driven
- A different Condition Assessment approach is required
- **What is the same?**
- BNG principles and rules
- BNG limitations

What is different?

- Watercourse Metric calculations:
  - *Distinctiveness types*
  - *Condition assessments*
  - *Encroachment multipliers*

Environment Agency

Reviewing the Watercourse Metric

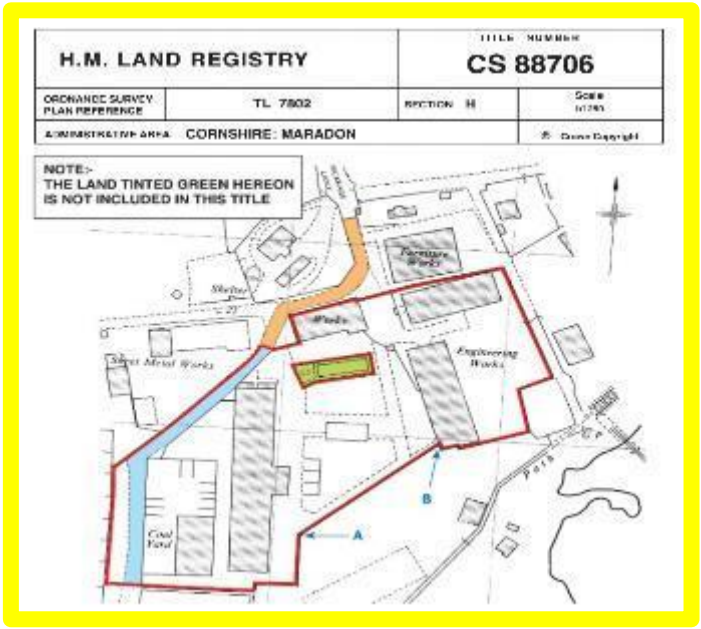
Broad considerations:

PRELIMINARY REVIEW STAGE

- Does the development need to apply the watercourse metric?

FULL REVIEW STAGE:

- Has the applicant presented adequate information for all watercourses needing assessment?
- Are you confident in the results?
- Are the criteria for suitable offsite options met?

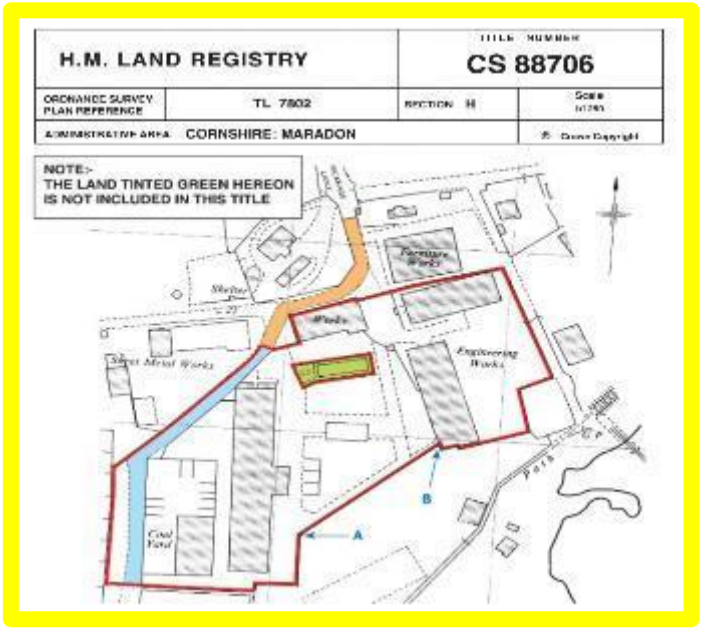


Watercourse Metric checklist : 10 review questions

Environment Agency

The Watercourse Metric - checklist

Broad Considerations	Qs	Yes/No
Does the watercourse metric need to be applied?	*1*	
	2	
Has adequate information been presented for all watercourse types?	*3*	
	4	
	5	
	6	
Are you confident in the results?	*7*	
	8	
	9	
Criteria met for offsite options?	*10*	



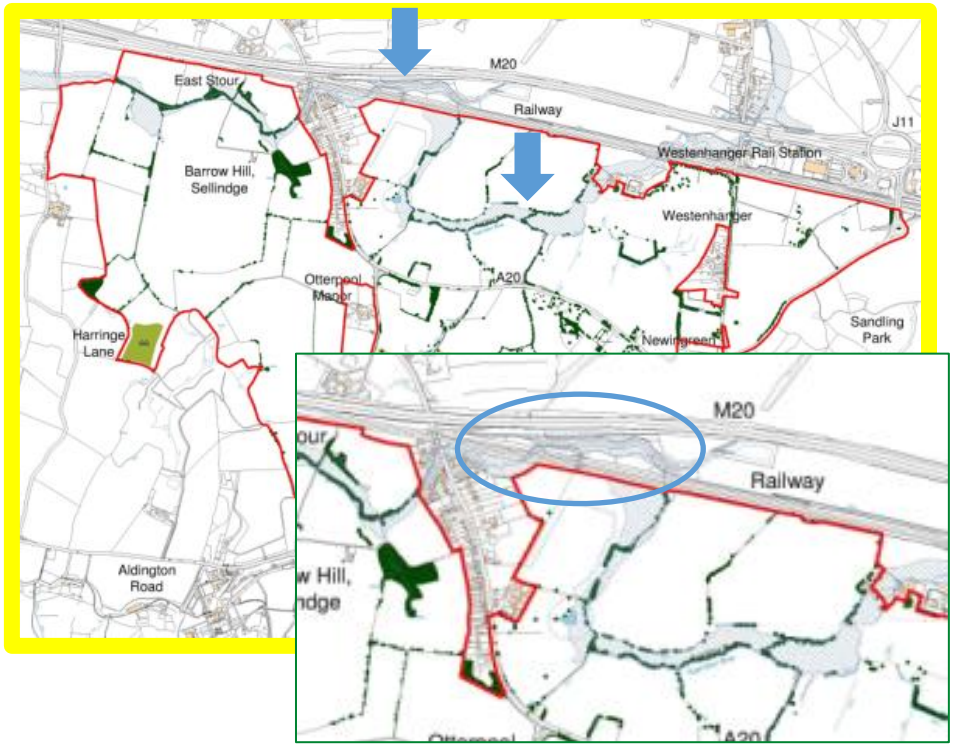
Environment Agency

The Watercourse Metric - checklist

Does the watercourse metric need to be applied?

Q1. Is there a watercourse on site or nearby?

- Within 10m of the development site Red Line Boundary (RLB) *including the riparian zone*



What do I need to check?

- ❑ ***Submitted Biodiversity Metric Information: project maps***

External sources to help identify watercourses at on-site & off-site locations:

- ❑ *Main River network GIS*
- ❑ *Ordinary watercourses GIS*
- ❑ *TRaC waterbodies GIS*
- ❑ *Priority river habitat GIS*

=> **Identify and note the watercourse type(s)**

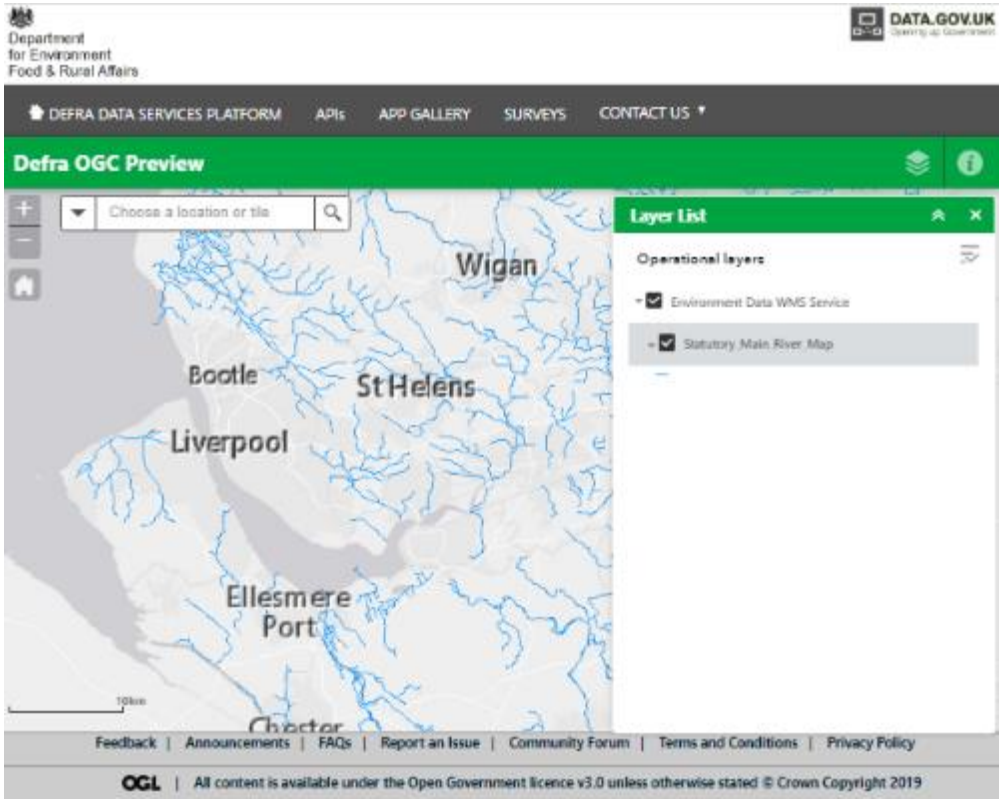
NB – check for outfall(s) draining from site to nearby watercourses

Environment Agency

The Watercourse Metric - checklist

Does the watercourse metric need to be applied?

Q1. Is there a watercourse on site or nearby? - Main Rivers



What do I need to check?

- ❑ *Submitted Biodiversity Metric Information: project maps*

External sources to help identify watercourses at on-site & off-site locations:

- ❑ ***Main River network GIS***

Statutory Main River Map viewer & download options:
https://environment.data.gov.uk/dataset/25dde009-ba7d-40de-8380-c5c3bb32ccdc

=> **Identify and note the watercourse type(s)**

NB – check for outfall(s) draining from site to nearby watercourses

Environment Agency

The Watercourse Metric - checklist

Does the watercourse metric need to be applied?

Q1. Is there a watercourse on site or nearby? – Ordinary Watercourses

What do I need to check?

- ❑ *Submitted Biodiversity Metric Information: project maps*

External sources to help identify watercourses at on-site & off-site locations:

- ❑ *Main river network GIS*
- ❑ ***Ordinary watercourses GIS***

https://beta.ordnancesurvey.co.uk/products/os-open-rivers

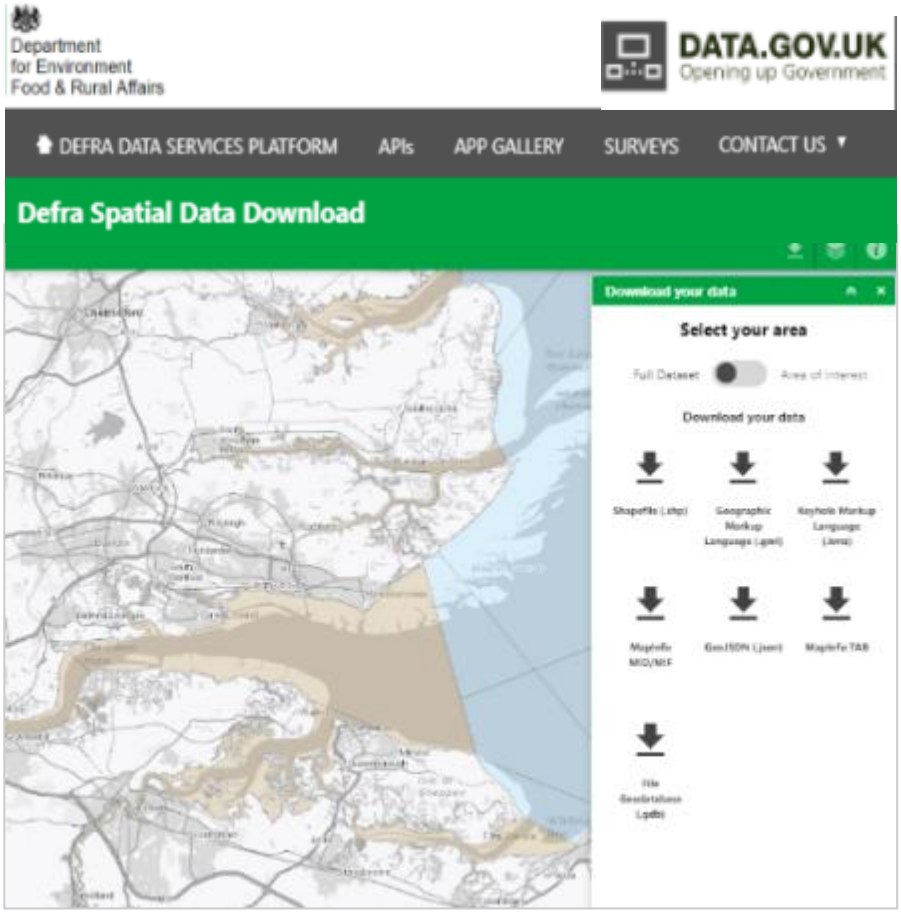
- Free to download under Open Government Licence
- Includes:144,000 km of water bodies and watercourses map data: freshwater rivers, tidal estuaries and canals

=> **Identify and note the watercourse type(s)**

NB – check for outfall(s) draining from site to nearby watercourses

Environment Agency

Q1. Is there a watercourse on site or nearby? – Tidal rivers (Transitional Waters)



What do I need to check?

- ❑ *Submitted Biodiversity Metric Information: project maps*

External sources to help identify watercourses at on-site & off-site locations:

- ❑ *Main river network GIS*
- ❑ *Ordinary watercourses GIS*
- ❑ ***TRaC waterbodies GIS***

*https://www.data.gov.uk/dataset/3a75ec5f-a361-475c-80e3-52d93bbc5dbe/**wfd-transitional-and-coastal-waterbodies-cycle-2***

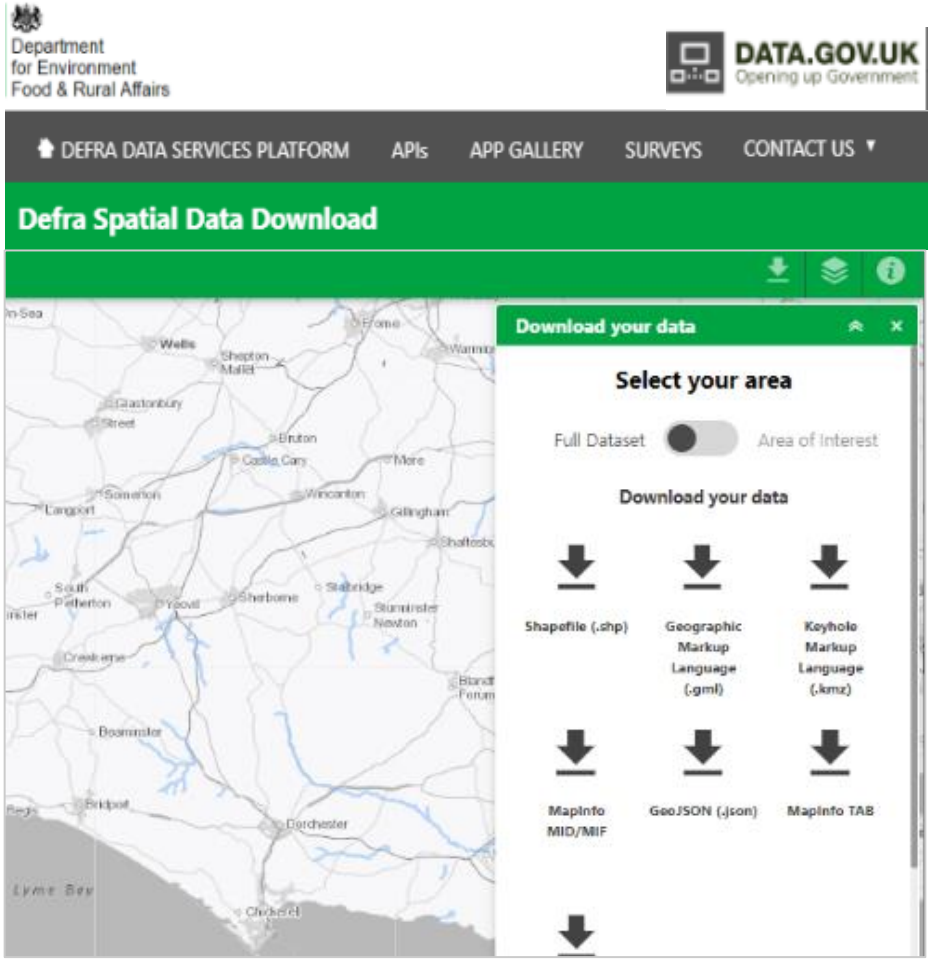
SELECT (SHOW MORE): WFDTransitionalAndCoastalWaterBodiesCycle2_Download

=> Identify and note the watercourse type(s)

NB – check for outfall(s) draining from site to nearby watercourses

Environment Agency

Q1. Is there a watercourse on site or nearby? – Priority rivers



What do I need to check?

- ❑ *Submitted Biodiversity Metric information: project maps*

External sources to help identify watercourses at on-site & off-site locations:

- ❑ *Main river network GIS*
- ❑ *Ordinary watercourses GIS*
- ❑ *TRaC waterbodies GIS*
- ❑ ***Priority river habitat GIS***

Missing a priority river? …go to: https://priorityhabitats.org/

www.data.gov.uk/dataset/20019cdb-9fef-4024-81af-daf1d1b74762/priority-river-habitat-rivers

SELECT: priority_river_habitat_rivers_england_DOWNLOAD

=> Identify and note the watercourse type(s)

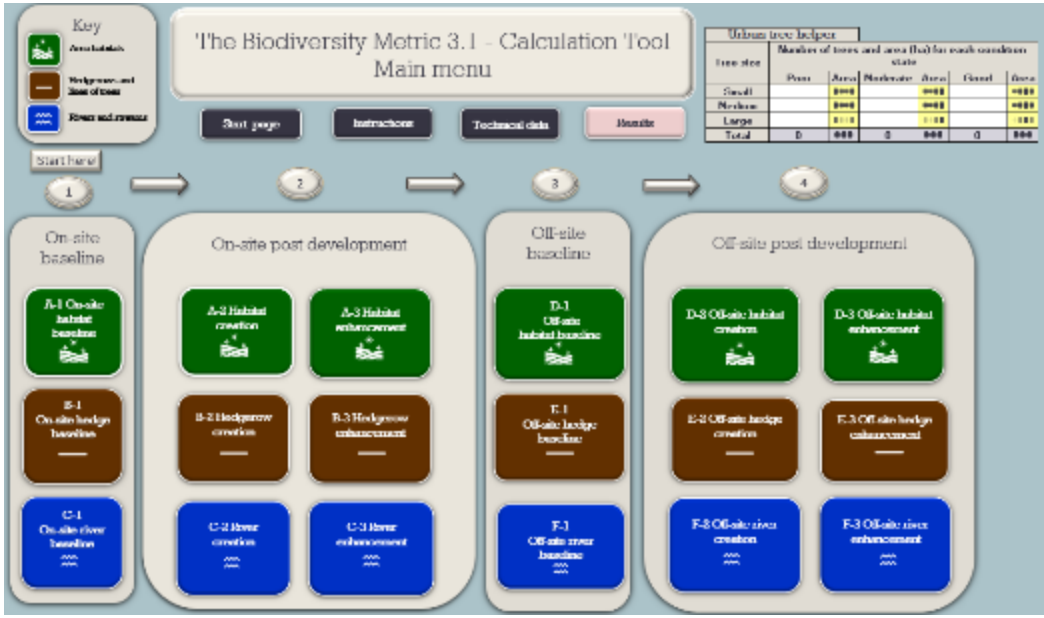
NB – check for outfall(s) draining from site to nearby watercourses

Environment Agency

The Watercourse Metric - checklist

Does the watercourse metric need to be applied?

Q2. Are all eligible watercourse types identified and their **length(s) represented correctly**?



Annex B: Biodiversity gain plan template (working draft)

Section A: Status of biodiversity gain plan

Status	Purpose	Relevant sections to be completed prior to submission for each status
Biodiversity Gain Information	To inform the planning application	A, B, C, D and E – **mandatory** F, G, H and I – **optional**, applicant should aim to complete as far as possible
Biodiversity Gain Plan	For approval by the relevant planning authority before development can commence	A, B, C, D, E, F, G and H – **mandatory** I – **optional**, applicant should aim to complete as far as possible

Section C: Summary of proposed biodiversity net gain

Biodiversity unit type	Baseline units		Post-development units			% net gain
	On-site	Off-site	On-site (development site)	Off-site (or market-provided)	Statutory biodiversity credits (government-provided)	
Area habitat						
Linear habitat – rivers and streams						
Linear habitat –						

What do I need to check?

- ❑ *Submitted Biodiversity Metric Information – Calculation tool - watercourse section*
- ❑ *Biodiversity Gain Plan (BGP) if available*
- ❑ *On-site and off-site channel lengths within 10m of the development site boundary*

Note – the new BM4.0 guidance will clarify what information needs to be submitted when

https://consult.defra.gov.uk/defra-net-gain-consultation-team/consultation-on-biodiversity-net-gain-regulations/supporting_documents/

Environment Agency

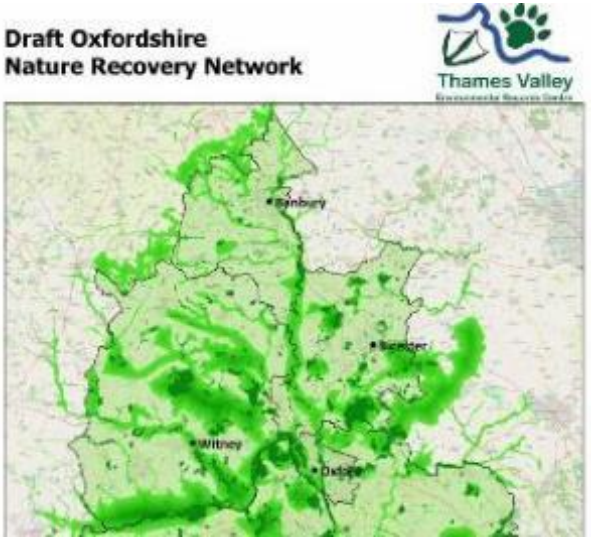
The Watercourse Metric - checklist

Broad Considerations	Questions	Yes/ No
Does the watercourse metric need to be applied?	*(1)* ***Is there a watercourse on site or nearby?*** *i.e. inside or within 10m of the development site boundary AND including the riparian zone*	✓
	(2) Are all eligible ***watercourse types and lengths correctly identified and represented*** *in Biodiversity Metric submissions?*	✓
Has adequate information been presented for all watercourse types?	*3*	
	4	
	5	
	6	
Are you confident in the results?	*7*	
	8	
	9	
Criteria met for offsite options?	*10*	

Environment Agency

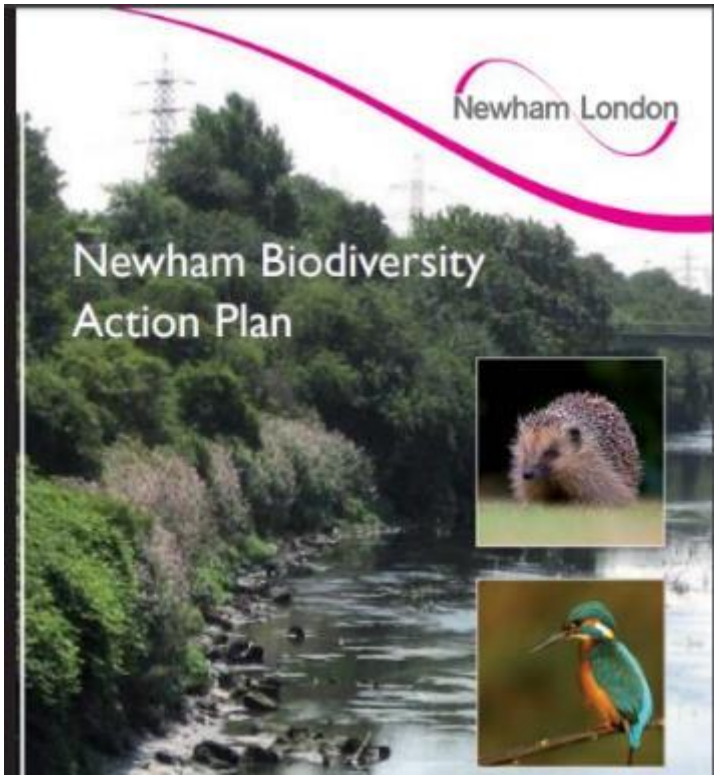
The Watercourse Metric - checklist

Is the information adequate for all watercourses?



Q3. Are the watercourses strategically significant?

Is evidence of strategic significance included?



What do I need to check?

- ❑ *Submitted Biodiversity Metric Information – Calculation tool - watercourse section*
- ❑ *Biodiversity Gain Plan (BGP) if available*

External sources to help identify significance at on-site & off-site locations:

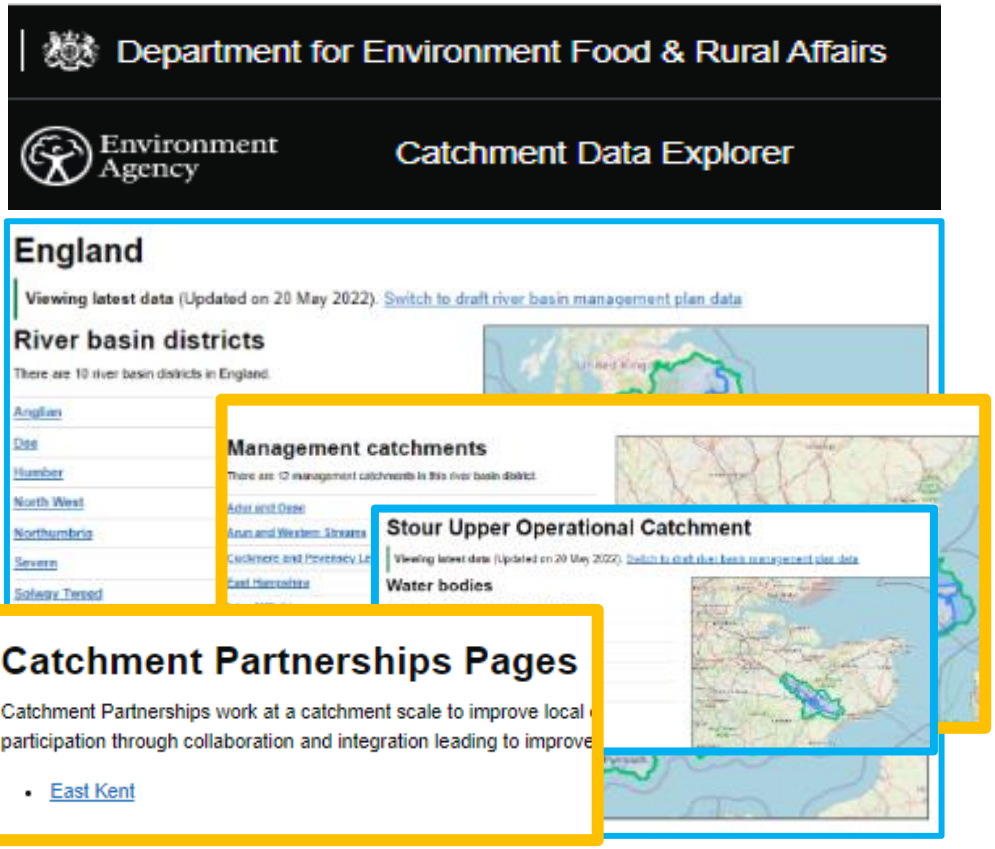
- ❑ *Local Biodiversity Action Plan*
- ❑ *Nature Recovery Strategy*
- ❑ *River Basin Management Plan*
- ❑ *Catchment Action Plan*

Environment Agency

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

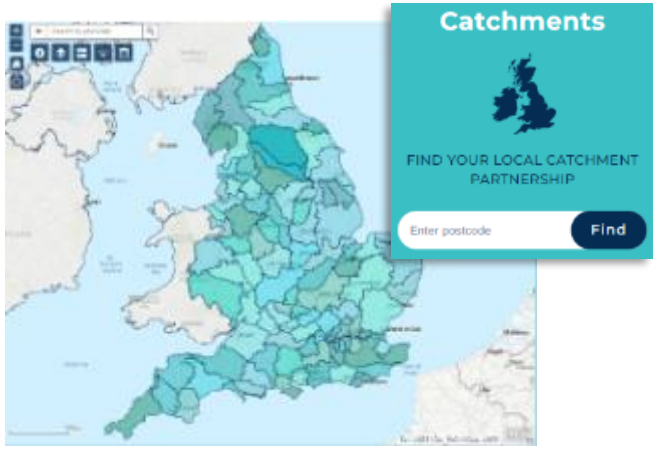
Q3. Are the watercourses strategically significant?



https://environment.data.gov.uk/catchment-planning/

https://environment.data.gov.uk/catchment-planning/v/c3-plan/CatchmentPartnerships

Catchment Based Approach



https://catchmentbasedapproach.org/

What do I need to check?

- ❑ *Submitted BM Information*
- ❑ *Biodiversity Gain Plan (BGP) if available*

On-site & off-site locations in:

- ❑ *Local Biodiversity Plan*
- ❑ *Nature Recovery Strategy*
- ❑ ***River Basin Management Plan***
- ❑ ***Catchment Action Plan***

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

Q4. Are riparian and in-channel encroachment identified and entered correctly at baseline and proposal stages?

Where does the bank top begin?
Where does the 10m riparian zone end?
Is the correct extent of encroachment entered?

What information do I need to check?

- ❑ *Submitted Biodiversity Metric Information – Calculation tool*
- ❑ *Biodiversity Gain Plan (BGP) if available*
- ❑ *Proposed works: on-site and off-site*
- ❑ *Images*

Environment Agency

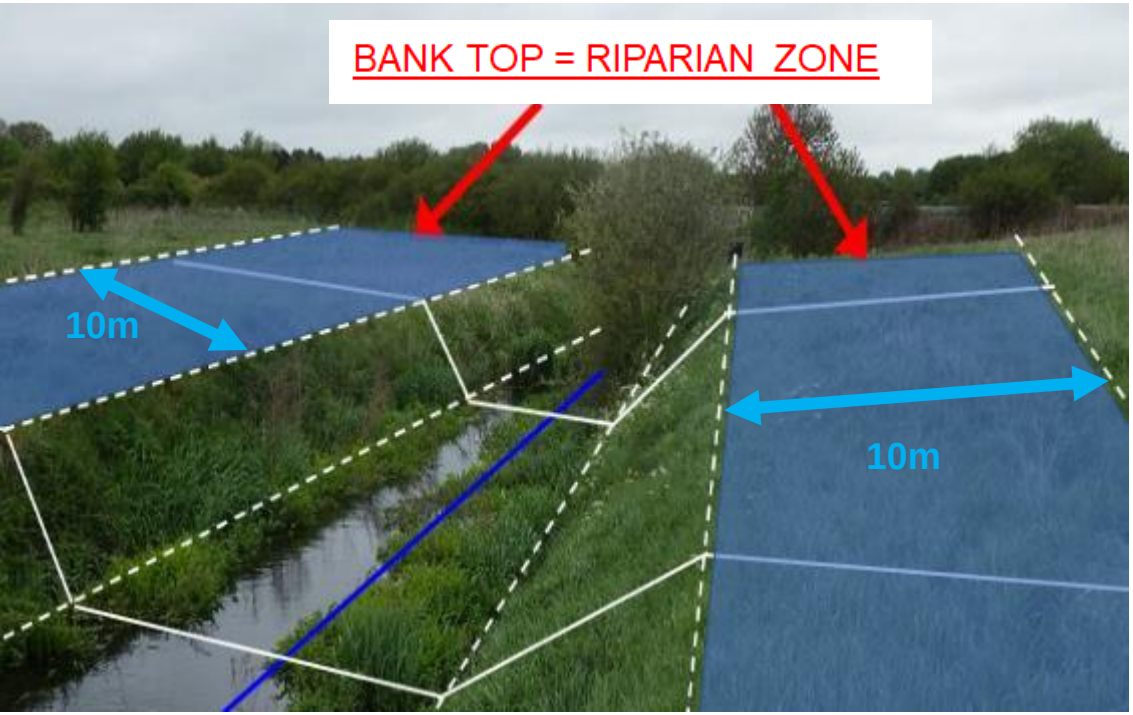
The Watercourse Metric - checklist

Is the information adequate for all watercourses?

Q4. Are riparian and in-channel encroachment identified and entered correctly at baseline and proposal stages? – Riparian Zone

Where does the bank top begin?

Where does the 10m riparian zone end?



What information do I need to check?

- ❑ *Submitted Biodiversity Metric Information – Calculation tool*
- ❑ *Biodiversity Gain Plan (BGP) if available*
- ❑ *Proposed works: on-site and off-site*
- ❑ *Images*

Environment Agency

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

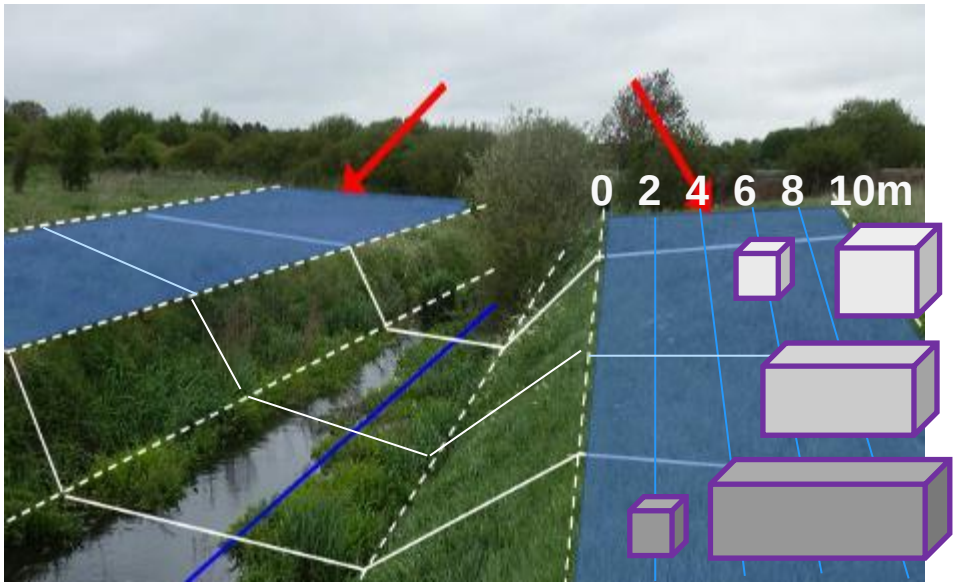
Q4. Are riparian and in-channel encroachment identified and entered correctly at baseline and proposal stages? – Riparian Zone

Is the correct extent value applied - for each bank?

Riparian encroachment band	Description *(% of RZ area (LB+RB), distance into RZ)*
None	0% in 0-10 m
Minor	Any encroachment in 8-10 m **OR** > 0-10% in 4-10 m
Moderate	10-25% in 4-10m **IF** Any is in 4-8 m
Major	Any encroachment in 0-4 m **OR** > 25% in 0-10 m.

EXCEPTIONS => No Encroachment

- Canal / River navigation towpaths*
- Existing river crossings*
  (include in RCA / MoRPh survey)*
- MAJOR only: exclude amenity (5% Max) & small utility features



Environment Agency

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

Q4. Are riparian and in-channel encroachment identified and entered correctly at baseline and proposal stages?

Is the correct extent value applied - for each bank?

EXCEPTIONS => No Encroachment

- Canal / River navigation towpaths*
- Existing river crossings*
  (include in RCA / MoRPh survey)*
- MAJOR only: exclude amenity (5% Max) & small utility features

Watercourse encroachment		Riparian encroachment	
Extent of encroachment	Multiplier	Extent of encroachment	Multiplier
Major	0.5	No Encroachment	1

Environment Agency

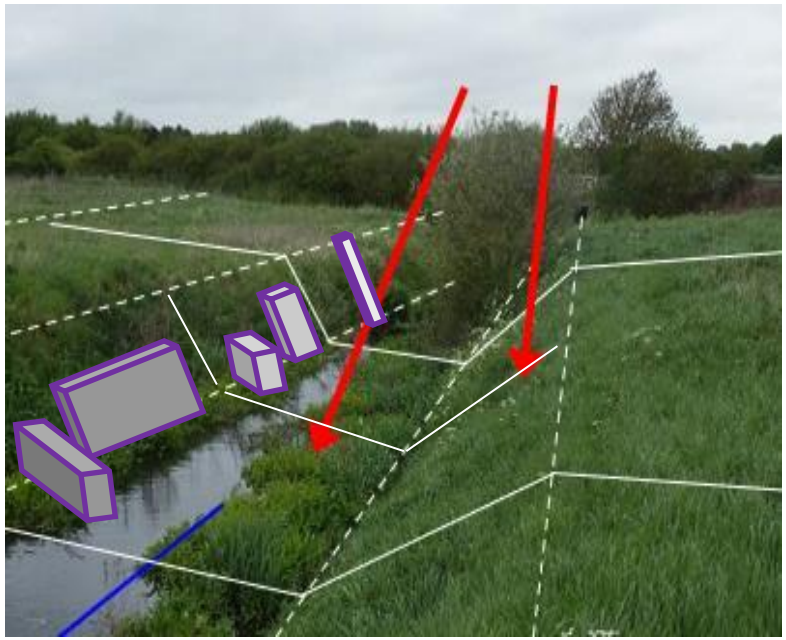
The Watercourse Metric - checklist

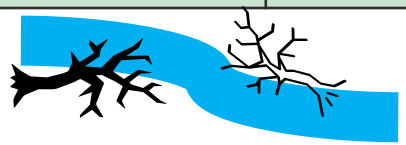
Is the information adequate for all watercourses?

Q4. Are riparian and in-channel encroachment identified and entered correctly at baseline and proposal stages?

Is the correct extent value applied?

In-watercourse encroachment band	Description *(% total channel length, distance into channel)*	Multiplier
None	< 5% bank revetment ONLY	1.0
Minor	5 – 20% bank revetment **OR** >0-10% of width	0.8
Major	> 20% bank revetment **OR** > 10% of channel width	0.5





EXCEPTION => No Encroachment

- River restoration interventions

Environment Agency

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

Q4. Are riparian and in-channel encroachment identified and entered correctly at baseline and proposal stages?

BANK AND / OR BED REINFORCEMENT
= IN-CHANNEL ENCROACHMENT

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

Q5. Do the headline & detailed results reflect all watercourses present?

- *Do the results reflect submitted supporting evidence?*
- *Does supporting evidence agree with reviewer searches?*

Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.00
	Hedgerow units	0.00
	River units	3.09
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	*Habitat units*	0.00%
	Hedgerow units	0.00%
	River units	48.63%

Headline Results

On site change by river type						
	Baseline		Post development on		Onsite Change	
River type	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	1.6	6.4	1.6	9.4	0.0	3.1
Ditches	0.0	0.0	0.0	0.0	0.0	0.0
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

Detailed Results

What information do I need to check?

- ❑ *BM Calculation tool – watercourse results*
- ❑ *Biodiversity Gain Plan - if available*
- ❑ *Supporting evidence*

Environment Agency

The Watercourse Metric - checklist

Is the information adequate for all watercourses?

Q6. Are the trading rules applied correctly?

Distinctiveness type must be 'like for like' or better – *ie ditch enhancement cannot compensate for river loss*

Priority Habitats – will require bespoke compensation

Culverts CAN change distinctiveness by 'daylighting'

Trading Summary		
Distinctiveness Group	Trading Rule	Trading Satisfied?
Very High	Bespoke compensation likely to be required 🛠	Yes ✓
High	Same habitat required =	Yes ✓
Medium	Same broad habitat or a higher distinctiveness habitat required (>)	Yes ✓
Low	Same distinctiveness or better habitat required ≥	Yes ✓

Trading Summary

What information do I need to check?

- ❑ *BM Calculation tool - watercourse results for types*
- ❑ *Biodiversity Gain Plan - if available*
- ❑ *Supporting evidence*

Up to BM3.1 - you will need to check this manually

In BM4.0 - the 'like for like' checks will be automated

Environment Agency

The Watercourse Metric - checklist

Broad Considerations	Questions	Yes/No
Does the watercourse metric need to be applied?	*(1) **Is there a watercourse on site or nearby?** i.e. inside or within 10m of the development site boundary AND including the riparian zone*	✓
	*(2) Are all eligible **watercourse types and lengths correctly identified and represented** in Biodiversity Metric submissions?*	✓
Has adequate information been presented for all watercourse types?	*(3) Are the **watercourses strategically significant?***	✓
	*(4) Is **riparian or in-channel encroachment** correctly identified **at baseline or proposal stages AND is the extent correct**?*	✓
	*(5) Do the **headline and detailed results** reflect all of the watercourses present?*	✓
	*(6) Are the **trading rules** correctly applied?*	✓
Are you confident in the results?	*7*	
	8	
	9	
Criteria met for offsite options?	*10*	

The Watercourse Metric - checklist

Confidence in the results?

Q7. For all rivers and streams: is evidence of River Condition Assessment accreditation AND river knowledge demonstrated?

Condition Report Sheet: RIVERS and STREAMS

River Condition Assessment (RCA) results for: Priority rivers, Other Rivers and Streams, Canals

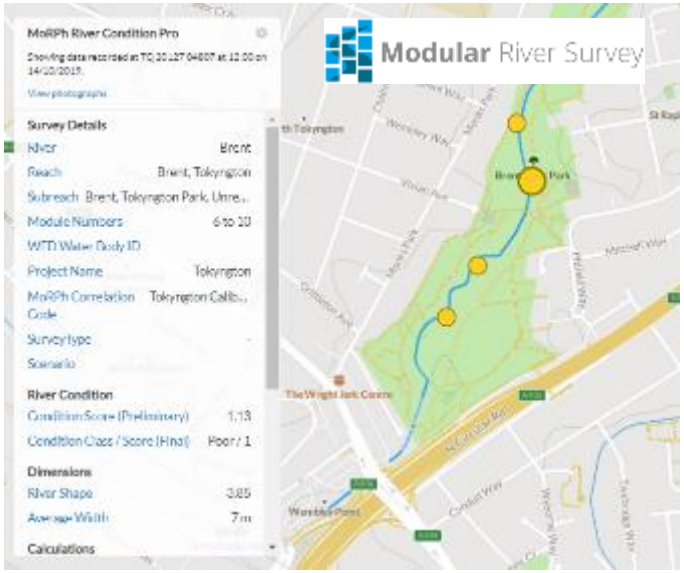
Site name/location:		Unique river section reference:	
GPS of MoRPh5		River section length:	

RCA River Type and Habitat Description for full river section (from walkover survey)

Rivers and streams form naturally draining networks within the wider landscape.
A long history of channel modification and artificial water body creation has led to widespread loss of naturally formed and functioning habitats.
The River Condition Assessment (RCA) methodology provides a sub-reach sample of a longer length of channel - or river/(canal) section that is represented by a single line within the Biodiversity Metric tool.
This sheet is to provide information about the full river section length based on a site walkover plus the

THE RESULTS OF THE 32 RCA INDICATORS FOR EACH RIVER SECTION SHOULD BE INSERTED BELOW WITH NOTES

Condition Assessment Criteria		RCA Index values	Notes / Justification
RCA INDEX ID	RCA INDEX NAME	Insert values -4 to 0 OR 0 to 4; Highlight those > 2 OR < -2	Explain where significant, the influence of high/low RCA indices on overall river condition
BANK TOP			
B1	Bank top vegetation structure		
B2	Bank top tree feature richness		
B3	Bank top water-related features		



Overview of RCA and river section assessment

River Condition Assessment PRELIMINARY SCORE:		River Type and class bands:	
River Shape index:		Is the river channel OVERDEEP? *If yes, what supporting evidence is provided?*	
River Condition Assessment FINAL CLASS:		IS THE RCA FINAL CLASS MODIFIED ? *If yes, why and what supporting evidence is provided?*	

Suggested enhancement interventions to improve the river condition score

Notes e.g. reference to supporting evidence etc.

What do I need to check?

- ❑ *BM Calculation tool - assessor's comments*
- ❑ *Biodiversity Gain Plan - if available*
- ❑ *River Condition Assessment report*
- ❑ *Output from Cartographer*
- ❑ *Habitat Monitoring and Management Plan*

Environment Agency

The Watercourse Metric - checklist

Confidence in the results?

Q8. For ditches: is evidence of aquatic ecology knowledge provided?

Condition Sheet: DITCH Habitat Type

UKHab Habitat Type(s)

Rivers and streams - Ditches

Site name/location		On-site/offsite	
Central grid reference of habitat		Unique polygon reference	
Limitations (if applicable)		Metric 3.0 survey reference (if condition assessment of this polygon relates to a wider habitat survey)	

Habitat Description

Artificially created, linear water-conveyancing features that are less than 5 m wide and likely to retain water for more than 4 months of the year. Their hydraulic function is primarily for land drainage, and although partially or fully connected to a river system, they would not have been present without human intervention

[Note: some heavily engineered ditches may actually be part of the river system (usually part of the headwater system). If there is uncertainty, consult historic maps, LiDAR data and riverine specialists]

Condition Assessment Criteria		Condition Achieved (Y/N)	Notes/Justification
1	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.		
2	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants in a 20 m ditch length.		
3	There is less than 10% cover of filamentous algae and/or duckweed (these are signs of eutrophication).		
4	A fringe of marginal vegetation is present along more than 75% of the ditch.		
6	Physical damage evident along less than 5% of the ditch, such as		

Condition Assessment Result	Condition Assessment Score	Number of criteria passed Score Achieved x/√
Passes 8 of 8 criteria	Good (3)	
Passes 6 or 7 of 8 criteria	Moderate (2)	
Passes 0, 1, 2, 3, 4 or 5 of 8 criteria	Poor (1)	

Suggested enhancement interventions to improve condition score

Notes

Footnote 1 - Any species included on the Water Framework Directive UKTAG GB High Impact Species List should be absent.

- Frequently occurring non-native plant species include water fern *Azolla* spp., Australian swamp stonecrop *Crassula helmsii*, parrot's feather *Myriophyllum aquaticum*, floating pennywort *Hydrocotyle ranunculoides*, Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* (on the bank).

- Frequently occurring non-native animals include signal crayfish *Pacifastacus leniusculus*, zebra mussels *Dreissena polymorpha*, killer shrimp *Dikerogammarus villosus*, demon shrimp *Dikerogammarus haemobaphes*, carp *Cyprinus carpio*.

www.geograph.org.uk/photo/777299

What do I need to check?

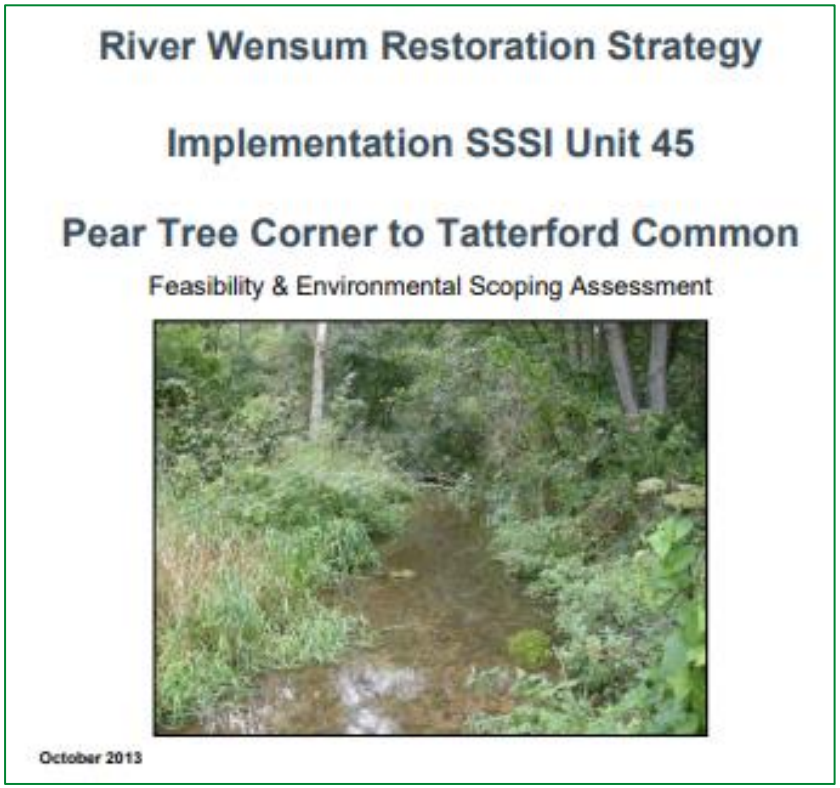
- ❑ *BM Calculation tool assessor's comments*
- ❑ *Biodiversity Gain Plan - if available*
- ❑ *Ditch condition assessment report*
- ❑ *Habitat Monitoring and Management Plan*

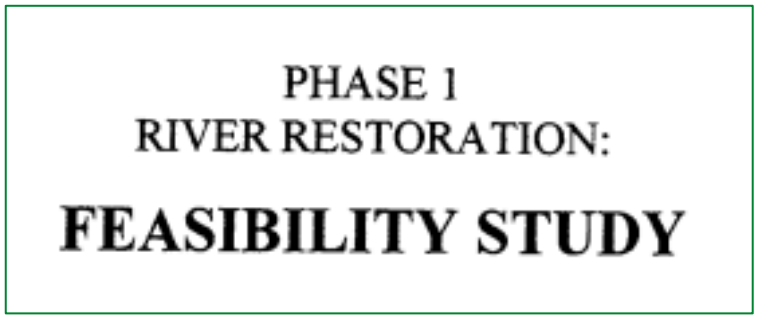
Environment Agency

The Watercourse Metric - checklist

Confidence in the results?

Q9. Is a feasibility report included with supporting evidence?





What do I need to check?

- ❑ *Biodiversity Gain Plan - if available*
- ❑ *Supporting evidence*
- ❑ *Habitat Monitoring and Management Plan*

Environment Agency

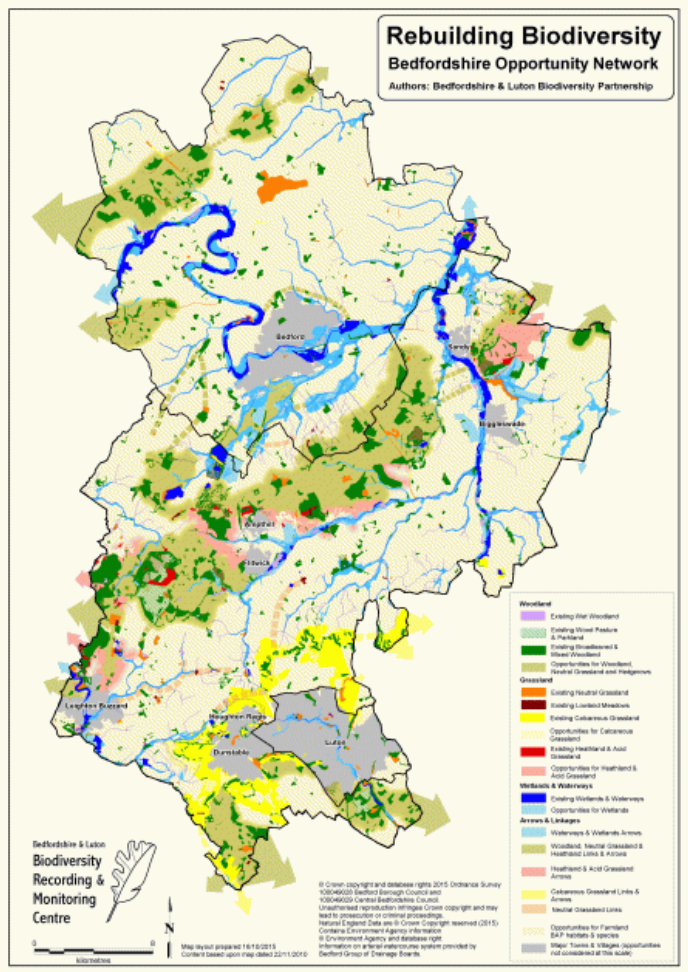
The Watercourse Metric - checklist

Broad Considerations	Questions	Yes/No
Does the watercourse metric need to be applied?	*(1)* ***Is there a watercourse on site or nearby?*** *i.e. inside or within 10m of the development site boundary AND including the riparian zone*	✓
	(2) Are all eligible ***watercourse types and lengths correctly identified and represented*** *in Biodiversity Metric submissions?*	✓
Has adequate information been presented for all watercourse types?	*(3) Are the* ***watercourses strategically significant?***	✓
	(4) Is ***riparian or in-channel encroachment*** *correctly identified* ***at baseline or proposal stages AND is the extent correct****?*	✓
	(5) Do the ***headline and detailed results*** *reflect all of the watercourses present?*	✓
	(6) Are the ***trading rules*** *correctly applied?*	✓
Are you confident in the results?	(7) *For rivers / streams: is evidence of* ***River Condition Assessment accreditation & river habitats knowledge*** *provided? (in comments and/or output from Cartographer),*	✓
	(8) *For ditches: is evidence of* ***aquatic ecology knowledge*** *provided?*	✓
	(9) Is a ***feasibility report*** *included with supporting evidence?*	✓
Criteria met for offsite options?	*10*	

The Watercourse Metric - checklist

Criteria met for offsite options?

Q10. Have local Strategies, Plans and Partnerships been consulted to identify the best local offsite options for net gain?



Devon Local Nature Partnership

Catchment Based Approach

Home / Catchment Management Plans

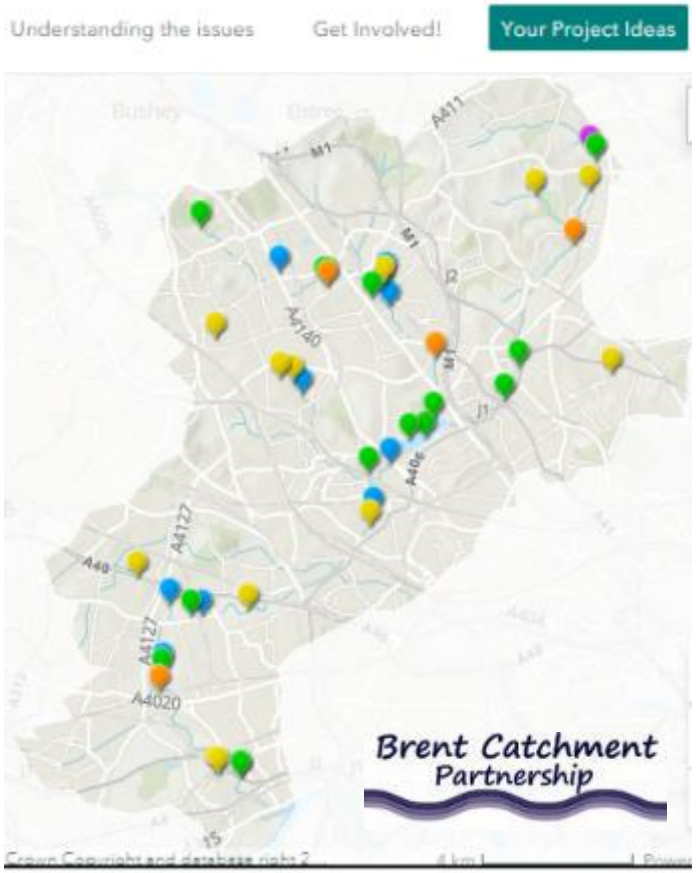
https://catchmentbasedapproach.org/learn/catchment-management-plans/

What do I need to check?

- ❑ *Biodiversity Gain Plan - if available*
- ❑ *Supporting evidence*
- ❑ *Local Nature Recovery Strategies*
- ❑ *Catchment Management Plans*
- ❑ *Local Catchment Partnership Opportunity Mapping*

Environment Agency

River Metric FAQs



How can I identify restoration opportunities locally?

*'How can I find a suitable offsite option to deliver Net Gain for a river where it can't be delivered on site?'**

*'What should I look out for in terms of offset providers for river units?'**

(As received via email enquiries)*

What would you do…?

- ❑ *Local Nature Recovery Strategies*
- ❑ *Local Catchment Action Plans*
- ❑ *Rivers / riparian landownership*
- ❑ *Local opportunity mapping*

Environment Agency

Checklist – quick recap!

Consideration	Questions	Yes/No
Does the watercourse metric need to be applied?	*(1)* ***Is there a watercourse on site or nearby?*** *i.e. inside or within 10m of the development site boundary AND including the riparian zone*	✓
	(2) Are all eligible ***watercourse types and lengths correctly identified and represented*** *in Biodiversity Metric submissions?*	✓
Has the adequate information been presented?	*(3) Are the* ***watercourses strategically significant?***	✓
	(4) Is ***riparian or in-channel encroachment*** *correctly identified* ***at baseline or proposal stages AND is the extent correct****?*	✓
	(5) Do the ***headline and detailed results*** *reflect all of the watercourses present?*	✓
	(6) Are the ***trading rules*** *correctly applied?*	✓
Are you confident in the results?	(7) *For rivers / streams: is evidence of* ***River Condition Assessment accreditation & river habitats knowledge*** *provided? (as comments and/or Cartographer outputs)*	?
	(8) *For ditches: is evidence of* ***aquatic ecology knowledge*** *provided?*	?
	(9) Is a ***feasibility report*** *included with supporting evidence?*	✗
Criteria met for offsite options?	(10) *Have local Strategies, Plans or Partnerships been consulted to identify the* ***best local offsite options*** *for net gain?*	✓

Case Studies

Good practice example

Proposed activity: river enhancement plus deculverting

Information provided:

- BM tool + calculations with no errors and clear notes
- Evidence of River Condition Assessment (RCA) accreditation
- Biodiversity Gain Plan with supporting information for baseline and proposed activities
- Feasibility Report for proposed river works
- Uplift achieved on site
- Additional gain achieved through Catchment Partnership connections that will help deliver unfunded WFD measures

Environment Agency

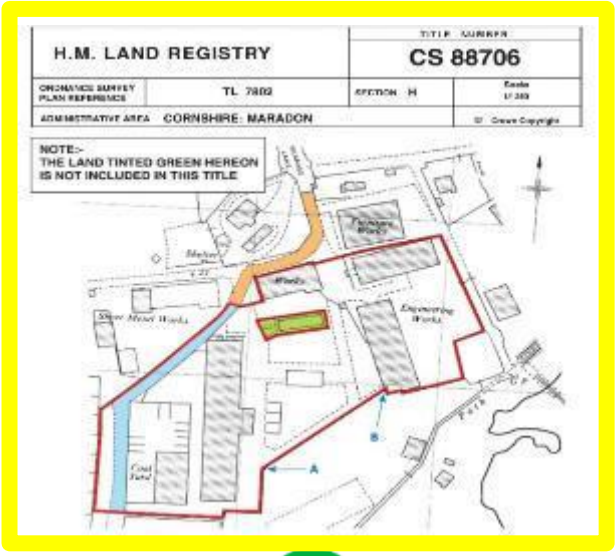
Illustration of case study example & checklist

	Questions	Yes/ No
Does the watercourse metric need to be applied?	*(1)* ***Is there a watercourse on site or nearby?*** *i.e. inside or within 10m of the development site boundary AND including the riparian zone*	✓
	(2) Are all eligible ***watercourse types and lengths correctly identified and represented*** *in Biodiversity Metric submissions?*	✓

C-1 Site River Baseline

Condense / Show Columns | Condense / Show Rows | Main Menu | Instructions

	Existing river type		Habitat distinctiveness	
Baseline ref	River type	Length (km)	Distinctiveness	Score
1	Other Rivers and Streams	0.29	High	6
2	Other Rivers and Streams	0.48	High	6
3	Other Rivers and Streams	0.34	High	6
4	Other Rivers and Streams	0.47	High	6
5				
		1.58		



Environment Agency

Illustration of case study example & checklist

	Questions	Yes/ No
Has the adequate information been presented?	*(3) Are the **watercourses strategically significant?***	✓
	*(4) Is **riparian or in-channel encroachment** correctly identified **at baseline or proposal stages AND is the extent correct**?*	✓
	*(5) Do the **headline and detailed results** reflect all of the watercourses present?*	✓
	*(6) Are the **trading rules** correctly applied?*	✓

Trading Satisfied?
Yes ✓
Yes ✓
Yes ✓
Yes ✓

Total net unit change (including all o	*Habitat units*	0.00
Total on-site (including all o		

Headline Results

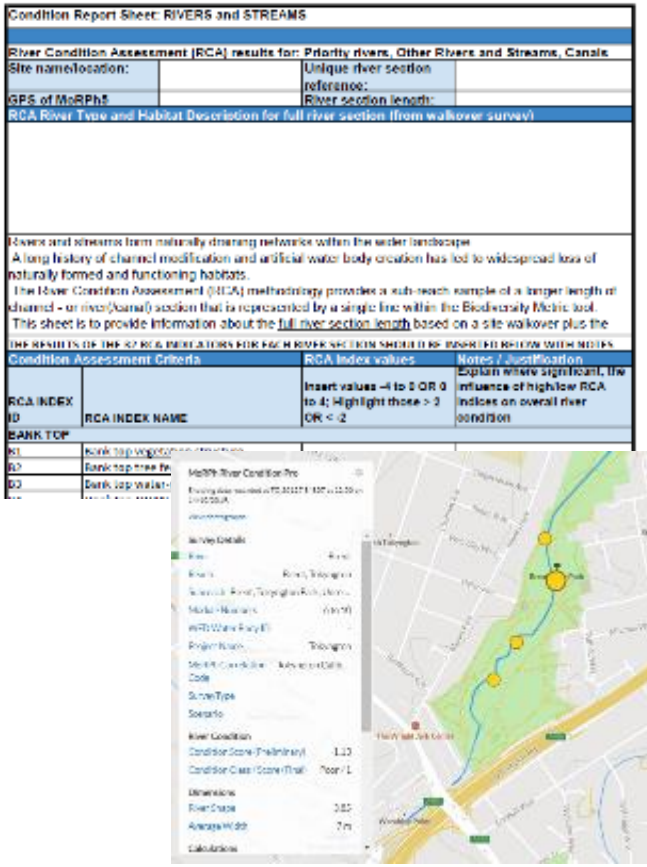
On site change by river type

River type	Baseline		Post development on		Onsite Change	
	Existing length	Existing value	Proposed length	Proposed value	length change	Onsite Unit change
Priority Habitat	0.0	0.0	0.0	0.0	0.0	0.0
Other Rivers and Streams	1.6	6.4	1.6	9.4	0.0	3.1
Ditches	0.0	0.0	0.0	0.0	0.0	0.0
Canals	0.0	0.0	0.0	0.0	0.0	0.0
Culvert	0.0	0.0	0.0	0.0	0.0	0.0

Detailed Results

Illustration of case study example & checklist

	Questions	Yes/ No
Are you confident in the results?	(7) *For rivers / streams: is evidence of* ***River Condition Assessment accreditation & river ecology knowledge*** *provided? (either in assessor's comments on output from Cartographer)*	✓
	(8) *For ditches: is evidence of* ***aquatic ecology knowledge*** *provided?*	*n/a*
	(9) Is a ***feasibility report*** *included with supporting evidence?*	✓



PHASE 1
RIVER RESTORATION:

FEASIBILITY STUDY

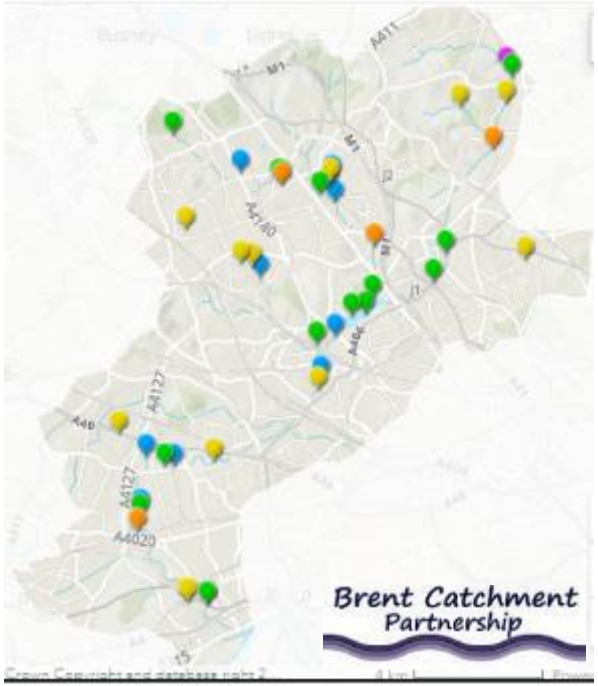
Modular River Survey

Environment Agency

Illustration of case study example & checklist

Catchment Based Approach

Theme	Questions	Yes/No
Criteria met for offsite options?	(10) *Have local Strategies, Plans or Partnerships been consulted to identify the **best local offsite options** for net gain?*	✓



Environment Agency

Case Studies

Bad practice example

Proposed activity: river and ditch enhancement and creation

Information provided (or not…!)

- BM tool with errors in lengths and calculations
- Missed encroachment
- Trading rules not ‘like for like’
- Biodiversity Gain Plan has no supporting information for River Condition Assessment
- No justification for proposed target condition
- No evidence of RCA accreditation
- No uplift / minimal gain on site
- Off-site option via credits or on a different type of watercourse outside catchment

Environment Agency

Where to go for more information?

Online guidance and resources for watercourses to support Biodiversity Net Gain review activities

- Biodiversity Metric User Guide (the most recent version)
- Watercourse Metric community of practise - (TBC via CIEEM)
- Catchment Partnership Pages - https://environment.data.gov.uk/catchment-planning/v/c3-plan/CatchmentPartnerships
- Catchment Based Approach (CaBA) - https://catchmentbasedapproach.org/
- The Rivers Trust - https://theriverstrust.org/
- River Restoration Centre Manual of Techniques - https://www.therrc.co.uk/
- Modular River Survey FAQs / River Condition Assessment information - https://modularriversurvey.org/river-condition/
- PAS FAQs - https://www.local.gov.uk/pas/topics/environment/biodiversity-net-gain-local-authorities/biodiversity-net-gain-faqs

Signposts to further technical training?

- CIEEM Watercourse Metric training - (search 'CIEEM Rivers and Streams Metric training' to add name to waiting list for BM4.0 updated course)

PAS planning advisory service

CIEEM

Environment Agency

Thank you!

Q&A via Slido...

Final comments & wrap up

Environment Agency