# A proposed quantitative method for assessing the impact of river regulation on its hydromorphological status

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**Table S1.** The example of forecast of expected river morphological features changes induced by regulation summary table

| No. | Expected changes in river morphological features induced by regulation | | | $HQA_*$ value | $HMS_*$ value |
|---|---|---|---|---|---|
| | left bank | channel | right bank | | |
| 1' | 1) land use within 5 m of banktop: semi-improved grassland 2) land use within 50 m of banktop: broadleaf woodland (semi-natural) 3) bankface and banktop vegetation structure: uniform 4) trees: regulatory spaced, single | = | 1) land use within 5 m of banktop: semi-improved grassland 2) bankface and banktop vegetation structure: uniform | ↓ | = |
| 2' | 1) predominant bank material: gabion 2) bank modification: resectioned 3) land use within 5 m of banktop: wetland 4) land use within 50 m of banktop: broadleaf woodland (semi-natural) 5) bankface vegetation structure: simple 6) banktop vegetation structure: uniform | 1) channel modification: resectioned | 1) land use within 5 m of banktop: semi-improved grassland 2) bankface and banktop vegetation structure: uniform | ↓ | ↑ |
| 3' | 1) predominant bank material: bio-engineering materials 2) bank modification: resectioned 3) land use within 5 m of banktop: tall herbs 4) land use within 50 m of banktop: wetland 5) bankface vegetation structure: simple 6) banktop vegetation structure: uniform | = | 1) land use within 5 m of banktop: semi-improved grassland 2) bankface and banktop vegetation structure: uniform | ↓ | ↑ |

| No. | Expected changes in river morphological features induced by regulation | | | $HQA_*$ value | $HMS_*$ value |
|---|---|---|---|---|---|
| | left bank | channel | right bank | | |
| 4' | 1) predominant bank material: bio-engineering materials<br>2) bank modification: resectioned<br>3) land use within 5 m of banktop: tall herbs<br>4) land use within 50 m of banktop: wetland<br>5) bankface and banktop vegetation structure: simple | 1) channel vegetation type: emergent broad-leaved herbs, floating-leaved (rooted); submerged linear-leaved | 1) land use within 5 m of banktop: semi-improved grassland<br>2) bankface and banktop vegetation structure: uniform | ↑ | ↑ |
| 5' | 1) predominant bank material: bio-engineering materials<br>2) bank modification: resectioned<br>3) land use within 5 m and 50 m of banktop: tall herbs<br>4) bankface and banktop vegetation structure: simple | 1) channel vegetation type: emergent broad-leaved herbs, floating-leaved (rooted); submerged linear-leaved | 1) predominant bank material: cobble<br>2) bank modification: embanked<br>3) land use within 5 m of banktop: semi-improved grassland<br>4) bankface and banktop vegetation structure: uniform | ↑ | ↑ |
| 6' | 1) predominant bank material: bio-engineering materials<br>2) bank modification: resectioned<br>3) land use within 5 m of banktop: tall herbs<br>4) land use within 50 m of banktop: wetland<br>5) bankface and banktop vegetation structure: simple | 1) channel vegetation type: emergent broad-leaved herbs, floating-leaved (rooted); submerged linear-leaved | 1) predominant bank material: cobble<br>2) bank modification: embanked<br>3) land use within 5 m of banktop: semi-improved grassland<br>4) bankface and banktop vegetation structure: uniform | ↑ | ↑ |
| 7' | 1) bank modification: resectioned<br>2) land use within 5 m of banktop: semi-improved grassland<br>3) land use within 50 m of banktop: wetland<br>4) bankface vegetation structure: simple<br>5) banktop vegetation structure: uniform | 1) channel vegetation type: emergent broad-leaved herbs, floating-leaved (rooted); submerged linear-leaved | 1) predominant bank material: cobble<br>2) bank modification: embanked<br>3) land use within 5 m of banktop: semi-improved grassland<br>4) bankface and banktop vegetation structure: uniform | ↑ | ↑ |
| 8' | 1) land use within 5 m of banktop: semi-improved grassland<br>2) land use within 50 m of banktop: broadleaf woodland (semi-natural)<br>3) bankface and banktop vegetation structure: uniform | 1) channel modification: weir<br>2) flow type: upwelling | 1) land use within 5 m of banktop: semi-improved grassland<br>2) land use within 50 m of banktop: semi-improved grassland<br>3) bankface and banktop vegetation structure: uniform | ↓ | ↑ |

| No. | Expected changes in river morphological features induced by regulation | | | $HQA_*$ value | $HMS_*$ value |
|---|---|---|---|---|---|
| | left bank | channel | right bank | | |
| 9' | 1) land use within 50 m of banktop: broadleaf woodland (semi-natural)<br>2) bankface and banktop vegetation structure: uniform | = | 1) land use within 5 m of banktop: semi-improved grassland<br>2) bankface and banktop vegetation structure: uniform | = | = |
| 10' | = | = | = | = | = |
| The whole reach | | 1) weir (intermediate impact)<br>2) gabion (intermediate impact)<br>3) water impounded by weir <33% of a site<br>4) channel vegetation type: emergent broad-leaved herbs, floating-leaved (rooted), submerged linear-leaved, submerged broad and fine leaved<br>5) features of special interest: side channel<br>6) overall characteristics: bank mowing<br>7) animals: otter, dragonflies | | ↑ | ↑ |

Explanations: $HQA_*$ = Habitat Quality Assessment after regulation, $HMS_*$ = Habitat Modification Score after regulation.

Source: own elaboration.