

draft RIVER BASIN MONITORING PLAN

UKTAG SUMMARY PROFORMA

Macroalgae –Macroalgal Blooming Tool Transitional and Coastal Waters

22nd December 2008

SUMMARY PROFORMA FOR WATER FRAMEWORK DIRECTIVE

The purpose of this proforma is to summarise the tool

1. Project Details

| | |
|------------------------------------|--|
| Classification Tool | Macroalgae Blooming Tool (MBT) – Opportunistic Macroalgae |
| Project Reference Number/s | EMC/WP16/041& 051 |
| Sponsor (task team/agency/project) | Marine Plants Task Team/EA, CEFAS, SEPA, FRS, NIEA, DARDNI, Marine Institute, EPA /MTT |
| Water category | Transitional and Coastal Waters |
| Biological element | Macroalgae |
| Pressures the tool is sensitive to | Nutrients |

2. Contact details

| | |
|----------------------|---|
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3. Criteria for assessing WFD classification tools (with respect to future tool adoption)

| Classification Tool Criteria | Response | | | | | | | | | | | | |
|--|--|----------|-----|-------------|-----------------------------------|-----------------|-----------------------------------|-----------------|----------------------------------|------------|-----------------------------------|--|--------------------|
| 1) Please submit your EQRs | <table border="1" style="width: 100%;"> <thead> <tr> <th style="text-align: center;">Boundary</th> <th style="text-align: center;">EQR</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">High – Good</td> <td style="text-align: center;">High ≥ 0.8</td> </tr> <tr> <td style="text-align: center;">Good - Moderate</td> <td style="text-align: center;">Good ≥ 0.6</td> </tr> <tr> <td style="text-align: center;">Moderate – Poor</td> <td style="text-align: center;">Mod ≥ 0.4</td> </tr> <tr> <td style="text-align: center;">Poor – Bad</td> <td style="text-align: center;">Poor ≥ 0.2</td> </tr> <tr> <td></td> <td style="text-align: center;">Bad 0 - 0.2</td> </tr> </tbody> </table> | Boundary | EQR | High – Good | High ≥ 0.8 | Good - Moderate | Good ≥ 0.6 | Moderate – Poor | Mod ≥ 0.4 | Poor – Bad | Poor ≥ 0.2 | | Bad 0 - 0.2 |
| Boundary | EQR | | | | | | | | | | | | |
| High – Good | High ≥ 0.8 | | | | | | | | | | | | |
| Good - Moderate | Good ≥ 0.6 | | | | | | | | | | | | |
| Moderate – Poor | Mod ≥ 0.4 | | | | | | | | | | | | |
| Poor – Bad | Poor ≥ 0.2 | | | | | | | | | | | | |
| | Bad 0 - 0.2 | | | | | | | | | | | | |
| 2) Have the boundaries been intercalibrated in phase 1 – please specify which have/haven't If there are components of the tool that have not been intercalibrated what is their influence with respect to the intercalibrated boundaries? | Yes North East Atlantic GIG | | | | | | | | | | | | |
| 3) Summary description and/or map of the types (please provide reference to more complex explanation, if necessary; page number specific!) | <p>A suite of measures have been developed to fulfil the normative definitions of the WFD TraC opportunistic macroalgae as part of the Macroalgal Biological Element. The Opportunistic Macroalgal Tool is specifically geared towards the monitoring of intertidal sedimentary shores which may be both coastal and transitional.</p> <p>The basic indices are:</p> <ul style="list-style-type: none"> • Total extent of macroalgae bed • % cover of available intertidal habitat at site (derived measure) and at quadrat level, • biomass of opportunistic macroalgal mats (g m^{-2}), • biomass over available intertidal habitat • presence of entrained algae, <p>These are field measurements together with additional observations on the state of the habitat (e.g. worm casts, anoxic sediment and disturbance due to bait digging). It was considered that the effects of weed</p> | | | | | | | | | | | | |

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| Classification Tool Criteria | Response |
|---|--|
| | <p>cover would be greatest on those sites, which are consistently covered by blooms; sites that are impacted only intermittently have greater opportunity to recover, with recycling of sediment-bound nutrients. Evidence from well-studied UK sites demonstrated considerable inter-annual variation in the extent and location of spatial cover (Withers (EA), 2003).</p> <p>These metrics have been developed using published and unpublished literature, and expert opinion. They have been tested at individual beds and water bodies and the results published in scientific journals</p> |
| 4) Method used to establish the type-specific reference conditions for the tool | Expert opinion, published work and best sites |
| 5) Is the tool covered by an existing CEN/ISO standards - if so, which one? Does it comply with the standard? | <p>Yes</p> <p>General quality assurance of biological and ecological assessment in aquatic environments EN 14996</p> |

| Classification Tool Criteria | Response |
|--|---|
| 6) Why was the good/moderate boundary set at that level? | <p>In “natural” (ref/High) waters we would expect no macroalgal blooms, even at good status the cover of the algal mats would be less than 15% with a biomass below 500g/m².</p> <p>As the nutrient pressure increases there is significant cover of macroalgae (up to 25%) and a significant biomass may be detected (over 500g/m²) together with 20% or more of quadrats of algal entrainment – at this level there is likely to be some modification of the sediment and its benthos below the algal mats.</p> |
| <p>7) Please provide an “implications” of the classification, based on the best available data for any non-intercalibrated G/M EQRs</p> <p>Depending on the tool, this may include:</p> <ul style="list-style-type: none"> • an initial estimate of water bodies in each class across the country (map and/or table); • estimates from trials of how the results are likely to compare with expectations (e.g. in relation to results from applying environmental standards) • how the results for the tool are expected to compare with intercalibrated results for other tools sensitive to the same type of pressure (i.e. more or less stringent) | <p>Provisional Classifications will be available in limited areas for 2008. Major work will not be completed until Autumn 2009.</p> |