River Basin Management Plans

Angiosperms - Seagrass - Transitional and Coastal Waters

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SUMMARY
PROFORMA FOR WATER FRAMEWORK DIRECTIVE

The purpose of this proforma is to summarise the tool

1. Project Details

Classification Tool	Marine Angiosperms - Intertidal and Subtidal Seagrass
Project Reference Number/s	EMC/WP16/042 & 086
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	Marine Angiosperms
Pressures the tool is sensitive to	General Disturbance and 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><tr><th>Boundary</th><th>EQR</th></tr><tr><td>High – Good</td><td>0.8-1.0</td></tr><tr><td>Good - Moderate</td><td>0.6-0.79</td></tr><tr><td>Moderate – Poor</td><td>0.4-0.59</td></tr><tr><td>Poor – Bad</td><td>0.2-0.39</td></tr><tr><td></td><td>0.0-0.19</td></tr></table> Final EQR boundaries for the whole seagrass tool kit are show above. The EQR values for the individual intercalibrated sub-metrics are not shown above. The intercalibrated boundaries for the sub-metrics are mid-points values (H/G – 0.9 and G/M – 0.7). The intercalibrated sub-metrics are combined to give an overall Seagrass assessment in UK waters, using the final EQR ranges above.
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 Other Member states may be included in seagrass intercalibration in Phase II
3)) Summary description and/or map of the types (please provide reference to more complex explanation, if necessary; page number specific!)	The basic indices are: • Taxonomic composition – seagrass species present • Shoot density – measured as the estimated percentage cover of seagrass using ≤1m^2 quadrates in a sampling grid • Bed extent – measured as area cover in m^2 of the continuous bed (deemed to be at >5% shoot density) and, where possible, the whole bed (<5% shoot density). All of these are field measurements together with observations on the state of the bed (e.g. disturbance

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	due to anchors or bait digging). These seagrass metrics have been developed and tested at individual beds and water bodies and the results published in scientific journals. Members of the North East Atlantic Geographical Intercalibration Group (NEAGIG) Marine Plants Expert group have agreed a common matrix for allocating status to intertidal seagrass assessments. This matrix combines both losses of species and degradation in the % cover (measured as % cover of seagrass within a quadrat, as shoot counting is not practical in intertidal environment). The intercalibration matrix covers both situations where naturally either two or three species of seagrass are found within either a type or where there are differences within types in specified geographic areas. Seagrass bed extent is assessed separately for intercalibration.
4) Method used to establish the type-specific reference conditions for the tool	A combination of historic data, best available sites and expert judgement
5) Is the tool covered by an existing CEN/ISO standards - if so, which one? Does it comply with the standard?	Yes General quality assurance of biological and ecological assessment in aquatic environments EN 14996: 2006.

Classification Tool Criteria	Response
6) Why was the good/moderate boundary set at that level?	In "natural" (ref/High) waters we would expect that, when they occur, seagrasses often occur in monospecific stands with 1 of up to 4 potential UK (3 in Scotland) species, on shores or shallow sub-littoral. Occasionally an inter-tidal bed will have 2 species in it; a large waterbody may have 2 or more taxa. Where present, high status seagrass beds healthy & dense with no loss of historic taxa and the beds maintain their size or are growing (within natural variation). As stress on existing seagrass beds increase we would expect to see a decrease in bed size and shoot density: a loss in bed extent >30% and shoot density >15% (or 30% in a single year) would threaten the integrity of a bed (more space for opportunistic algae) and would indicate moderate status, similarly a loss of ½ the taxa (usually 1 taxa in UK waters) would also indicate moderate status as diversity has decreased.

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7) Please provide an "implications" of the classification, based on the best available data for any non-intercalibrated G/M EQRs Depending on the tool, this may include: • 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)	Draft Classifications will not be available before the end of March 2008.

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