

River Basin Management Plans

Fish Classification Index - Transitional Waters

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Northern Ireland
Environment
Agency

SUMMARY

PROFORMA FOR WATER FRAMEWORK DIRECTIVE

The purpose of this proforma is to summarise the tool

1. Project Details

Classification Tool	Transitional Fish Classification Index (TFCI)
Project Reference Number/s	
Sponsor (task team/agency/project)	Northern Ireland Environment Agency
Water category	Transitional
Biological element	Fish
Pressures the tool is sensitive to	General Disturbance

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"> <thead> <tr> <th>Boundary</th><th>EQR</th></tr> </thead> <tbody> <tr> <td>High – Good</td><td>High ≥ 0.8</td></tr> <tr> <td>Good - Moderate</td><td>$0.8 > \text{Good} \geq 0.6$</td></tr> <tr> <td>Moderate – Poor</td><td>$0.6 > \text{Mod} \geq 0.4$</td></tr> <tr> <td>Poor – Bad</td><td>$0.4 > \text{Poor} \geq 0.2$</td></tr> <tr> <td></td><td>Bad < 0.2</td></tr> </tbody> </table>	Boundary	EQR	High – Good	High ≥ 0.8	Good - Moderate	$0.8 > \text{Good} \geq 0.6$	Moderate – Poor	$0.6 > \text{Mod} \geq 0.4$	Poor – Bad	$0.4 > \text{Poor} \geq 0.2$		Bad < 0.2
Boundary	EQR												
High – Good	High ≥ 0.8												
Good - Moderate	$0.8 > \text{Good} \geq 0.6$												
Moderate – Poor	$0.6 > \text{Mod} \geq 0.4$												
Poor – Bad	$0.4 > \text{Poor} \geq 0.2$												
	Bad < 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?	No - ongoing due to each member state having different sampling programmes and classification tools, which are still in development. Intercalibration Phase II will be undertaken over the period 2007 to 2011. Further tool testing & intercalibration assessment is proposed throughout 2008/9.												
3)) Summary description and/or map of the types (please provide reference to more complex explanation, if necessary; page number specific!)	<p>The Transitional Fish Classification Index (TFCI) has been developed to assess the ecological status of fish within transitional waters.</p> <p>TFCI is a multi-metric index that combines both structural and functional attributes of estuarine fish communities and integrates these to provide a robust and sensitive method for assessing the ecological condition of estuarine systems. It uses 10 ecological measures or metrics to analyse fish populations in relation to species diversity and composition (species composition, presence of indicator/disturbance sensitive taxa), species abundance (species relative abundance, species dominance), nursery function (number of estuarine resident taxa, number of estuarine-dependent marine taxa, number of functional guilds), and trophic integrity (number of benthic invertebrate feeding taxa, number of piscivorous taxa, number of feeding functional guilds). The overall assessment is based on a</p>												

Classification Tool Criteria	Response
	comparison of each metric to a reference state derived from historic data and from survey data.
4) Method used to establish the type-specific reference conditions for the tool	<p>Reference conditions for each metric were established primarily using available survey data; the metric measuring disturbance sensitive taxa also included historical records.</p> <p>Transitional waters in Northern Ireland, the Republic of Ireland, Wales, the west coast of Scotland, and the south and west coasts of England fall within Ecoregion 1 (Atlantic). Preliminary analyses of the data, however, suggest some regional (bio-geographic) differences. To account for this the data used to derive reference conditions were restricted to Northern Ireland and the Republic of Ireland only.</p> <p>While only one type transitional water (TW2) is identified in both Northern Ireland and the Republic of Ireland, initial analyses of the data suggest the existence of sub-types based on size. In the current classification however, a single transitional waterbody type reference condition was established and used for the first round of classifications.</p>
5) Is the tool covered by an existing CEN/ISO standards - if so, which one? Does it comply with the standard?	The sampling protocol follows the CEN Standard EN 14962: Water quality – Guidance on the scope and selection of fish sampling methods

Classification Tool Criteria	Response
6) Why was the good/moderate boundary set at that level?	Each metric within the TFCI is assigned a score, which ranges between 1 and 5, depending on the degree of deviation from the reference condition. The TFCI is then calculated by summing the scores of the various metrics; each metric has the same weighting and the TFCI ranges between 10 and 50. The TFCI is then converted into an EQR with values lying within the range 0-1. The EQR boundaries are based on a mathematically even distribution of the EQR range. The good/moderate boundary is therefore set at EQR 0.6.
<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>While the TFCI is based on sound ecological principles, there has been very little data to fully test and develop the index. This classification therefore must be considered a draft classification.</p> <p>Because fishes are relatively long-lived, they are good long-term integrators of ecosystem health.</p>

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