

## ECASA indicator

<b>Name</b>	<b>Macrobenthic biomass fractionation index</b>												
<b>DPSIR classe</b>	Impact												
<b>ECASA subgroups</b>	Benthos												
<b>ECASA code</b>	BFI												
<b>Proposed by participant</b>													
<b>Definition, computation,</b>	(Macrofaunal Biomass retained on 0.5mm sieve only / Macrofaunal Biomass retained on 1.0mm+ 0.5mm sieve) 8*100 Macrofauna is sieved sequentially over 1mm and 0.5 mm sieves. The large body-size fraction is retained on 1mm sieve whereas the small body-size fraction (containing the opportunistic species) passes through 1mm and is retained on 0.5mm sieve. The index takes values from 0-100%												
<b>Data required</b>	Wet biomass of macrofauna sieved sequentially over 1mm and 0.5 mm sieves												
<b>Summary, scientific meaning, implementation</b>	As has been noted by Pearson & Rosenberg (1978) and verified in numerous occasions, benthic enrichment results in high abundance of opportunistic species, which are r-selection organisms of small body size, whereas most of the large-body size organisms suffer unfavourable conditions and therefore leave the impacted area or die. This pattern of macrobenthic succession has been found in the vicinity of fish farms by various authors.												
<b>Range of validity</b>	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th style="width: 33%;">BFI</th> <th style="width: 33%;">Disturbance Classification</th> <th style="width: 33%;">EcoQ (<i>sensu</i> WFD)</th> </tr> </thead> <tbody> <tr> <td>0.0 &lt; BFI ≤ 10%</td> <td>Undisturbed</td> <td>High Status</td> </tr> <tr> <td>10 &lt; BFI ≤ 50%</td> <td>Moderately Disturbed</td> <td>Moderate Status</td> </tr> <tr> <td>50 &lt; BFI ≤ 100</td> <td>Heavily Disturbed</td> <td>Poor Status</td> </tr> </tbody> </table>	BFI	Disturbance Classification	EcoQ ( <i>sensu</i> WFD)	0.0 < BFI ≤ 10%	Undisturbed	High Status	10 < BFI ≤ 50%	Moderately Disturbed	Moderate Status	50 < BFI ≤ 100	Heavily Disturbed	Poor Status
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<b>Species concerned (fishes/molluscs)</b>													
<b>Related type of aquaculture</b>	It has been tested for fish farms, but it should be also suitable for other types of benthic enrichment												
<b>Relevant environments for this indicator</b>	<b>ALL</b> types of coastal and estuarine environments, including coastal lagoons. It has been checked in the Eastern Mediterranean so far												
<b>Geographic scale</b>	Local												
<b>Direct relevance to objectives</b>	– <b>A</b> : BFI is quite relevant to the objectives of EIA												
<b>Clarity in design.</b>	– <b>A</b> (it is a straightforward index there is little chance of misinterpretation).												
<b>Realistic collection or development costs</b>	– <b>B</b> (It is very practical and needs no taxonomic expertise in order to obtain the values).												
<b>High quality and reliability</b>	– <b>A</b> (it needs to be tested in different environmental conditions in order to refine the limits. However, the results from 7 fish farms in the Mediterranean are quite encouraging).												
<b>Appropriate spatial and temporal scale</b>	– <b>A</b> (it has not been tested between different seasons. Regarding the spatial scale it provides a good separation of impacted and non-impacted zones with distance from fish cages).												

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<b>Obvious significance</b>	– <b>A</b> (It is very easy to understand by the stakeholders, as the output is a percentage of small opportunistic species in the sample).
<b>advantages</b>	Simple, easy to collect and to interpret
<b>disadvantages</b>	It is not established whether it is specific to aquaculture
<b>references</b>	Pearson, T.; Rosenberg, R. (1978). Macrobenthic succession in relation to organic enrichment and pollution of the marine environment. <i>Oceanography and Marine Biology Annual Review</i> , 16: 229-311..
<b>State of validation</b>	Not validated in the field of aquaculture impacts
<b>recommendations</b>	