

Selection Process for Local Management Areas for Implementation of The River Basin Management Plans

This paper sets out options for the prioritisation of work on delivering the River Basin Management Plans and to facilitate discussion on the LMA selection process.			
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Introduction

In order to give direction on the way forward in delivering the objectives of the Water Framework Directive as set out in the River Basin Management Plans (RBMPs), it is considered necessary to select areas for action in order to better target the resources available to deal with the situation. Although a substantial amount of knowledge is available at water body level, it is considered that a catchment level approach needs to be adopted to be consistent with the aims of the Directive. To address improvements in water quality at such a level in a manageable manner, it is proposed to work on a Local Management Area (LMA) basis (see Annex 5 for map of LMAs) and to prioritise around these areas. This requires the assessment of 26 LMAs and a procedure to prioritise resources between these areas on the basis of the environmental impact. It is proposed to select nine for detailed assessment in the first year of the plan. A further nine will be selected for detailed attention in the second year and the remaining eight in the third year. Progress with the first group of nine will be reviewed in the fourth year of the plan and the others in subsequent years.

Selection Process Methodology

To determine a suitable selection process for freshwater a number of assessments were carried out to evaluate the impact on the management areas and this includes lakes as well as rivers. A separate selection exercise for coastal and estuarine waters was carried out but the number of coastal and transitional water bodies per LMA ranged from zero to a maximum to 4. Also the vast majority of these water bodies are in the North Eastern RBD so the process is very skewed and it was not considered a useful exercise. It is considered more practical to work with the freshwater selection out come and use the marine selection process to inform the detailed assessment studies. Initial thoughts on the selection methodology involved employing a range of factors including:

- The percentage of water bodies that are at Moderate, Poor or Bad status.
- The length or area (as appropriate) of water bodies that are Moderate, Poor or Bad status.
- The presence of an SAC and whether it is at favourable status or not.
- The presence of an SPA and whether it is at favourable status or not.
- Whether a water body is a Drinking Water Protected area.

- Whether the sewerage infrastructure complies with the requirements of the Urban Waste Water Treatment Directive.
- Whether a water body is passing or failing the Freshwater Fish Directive.

Following consultation with the Implementation Working Group (IWG) it was agreed to base the assessment only the ecological elements; invertebrates, macrophytes and fish. In addition as Freshwater Pearl Mussel is sensitive to ecological conditions and as this has been included in the ecological quality classification scheme as a status element it was subsequently agreed with the IWG that this element should be included in the selection process.

SELECTION PROCESS

- (1) The starting point of the methodology is the percentage of water bodies failing to achieve good status for the elements used in classification, within each LMA, and the level of failure. The assessment was carried out for each River Basin District, by setting out the reason for failure for each element per water body, using the status information for the 2009 final plan, as shown in Annex 1. The lowest status achieved between the four ecological elements invertebrates, macrophytes, fish and pearl mussel was used to create an overall eco status. That is lowest score dictates the final eco status, for example; Woodburn R

Where:

Invertebrates score	3
Macrophytes score	3
Fish score	4
Pearl Mussels score	0

The overall eco status is = 4

This is employed to derive a percentage Eco Failure for those water bodies in the LMA that fail to achieve good status as a percentage of the number of water bodies in that LMA. This is repeated for those less than moderate status and those at bad status. Using the percentage Eco Failures generated for each LMA, an Eco Score is derived by the addition of the Eco percentages such that the risk of not achieving good status was taken to be represented by:

$$\% < \text{Good} + \% < \text{Moderate} + \% \text{ Bad} = \text{Eco Score}$$

The Eco Score is then employed in ranking the LMAs in the selection process.

- (2) In a number of cases there was no ecological information available due to, (a) no monitoring point being available and classification was based on pressure and impact information or, (b) the water body is cross border and the classification was based on Republic of Ireland data only. In such cases the classification assessment was employed to derive the Eco Score, see Annex 1.

(3) **Selection Scoring Process**

The results of the selection process using the Eco Score is set out in Annex 3 and a number of options have been presented.

Options for Selection

The table in Annex 3 compares a number of options for selecting the LMAs for detailed assessment in the first and subsequent years of the 6 year cycle using ranking system developed.

Option 1 The top nine LMAs ranked in order of the **ECO Score** to be examined in detail in the first year and the next nine in the second year, with the remainder in the third..

Option 2 Separating the LMAs into their respective RBDs ranked by the **ECO Score** and slicing off the top three in each RBD to be examined in the first year. Alternatively the two top scoring LMAs for each RBD can be selected in combination with a lower scoring LMA. The lower scoring LMA may be more readily achievable in delivering improvements and may offer a 'quick win'. The next three would be done in subsequent years.

Option 3 Sorting the LMAs into their respective Catchment Stakeholder Groups (CSGs) (see Annex 4 for map of CSG areas) ranked by the **ECO Score** and selecting the highest scoring LMA in each CSG. This works well in the first two years but in the third year there is a substantial focus on the Neagh Bann RBD over the North Eastern RBD.

Comment

In Option 1 there are no North Western LMAs in the top nine and no LMAs in the Bush & Glens CSG would be assessed in the first year. There are also a couple of notable LMAs not included in this top set, i.e. Six Mile and Owenkillew.

The spread of the LMAs across the CSGs in Option 2 in the first year is limited but more even in the next two. It would mean that no LMAs in the Upper Foyle, Carlingford & Mourne and the Bush & Glens would be assessed in the first year.

Using the Option 2 does produce an even spread between the RBDs and offers the alternative of selecting a lower score in conjunction with a higher score, this could assist with the spread across the CSGs.

Option 3 spreads the load between the RBDs and the CSGs but the actual score becomes more critical in selecting which LMA should be tackled next. It also pushes most of the effort on the Neagh Bann system into the third year with 3 LMAs in the Lower Neagh Bann requiring detailed assessment in the third year.

Next Steps

Having received comment from the IWG the preferred option is Options 3. This option results in an LMA in each CSG being addressed in each year of the first two years. In year 3 only Larne in the North East RBD would require detailed assessment as the remainder have been commenced and there would be three in the Lower Neagh Bann CSG to be assessed.

In the first year of the plan the work of the Water Management Unit would be focused on the nine LMA areas that are selected by the preferred option. However, draft plans would be drawn up for all 26 areas by April of 2010. The assessments and measures that have been identified for the 9 selected LMAs will proceed and continue through the life of the plan to deliver good or improved ecological quality. Some of the measures may take some years to deliver the required objectives and this will be assessed by the established monitoring procedures.

In the second year of the plan attention will focus on the next set of nine LMAs to develop the assessments and measures needed to deliver the required objectives. The measures and actions developed will continue through the life of the plan in parallel with those already commenced.

In the third year the remaining eight LMAs will be targeted and the approach will be the same as for year two.

In the fourth year the first set of nine LMAs will be reviewed and progress will be assessed and the prioritisation reviewed in the light of updated or new assessment information. Using a three year review period will also mean that any revised classification, will be with a totally revised set of data, as 3 years data is employed in carrying out the classification assessment for status. In addition by this time all programmes of measures should be operational.

Reason for Failure and Percentage Failure Spreadsheet

Annex 1

RWBID	Name WB		Overall Eco Status	Invertebrates	Macrophytes	Fish	Pearl Mussel	Diatoms	Phytoplankton	DO	Phosphorus	Hydrology	MORPH SITE VISIT	P+I status	SURFACE WATER STATUS
GBNI1NE050501004	Copeland Water	Belfast Lough	3									2		3	3
GBNI1NE050501118	Three Mile Water	Belfast Lough	4	4				4			3		3		4
GBNI1NE050501120	Woodburn River	Belfast Lough	4	3	3	4		3				2			4
GBNI1NE050502083	Crawfordsburn River	Belfast Lough	4	4							3				4
GBNI1NE050502084	Ballyholme River	Belfast Lough	5	5		5					3		3		5
GBNI3NE0028	Mourne	Belfast Lough	3		3				3		4	2	3		4
	Total No. WBs 7	No. <Good	6	4	2	2		2	1	0	4	0	3	1	6
	Rivers plus Lakes	No. <Mod	4	3	0	2		1	0	0	1	0	0	0	5
		No. Bad	1	1	0	1		0	0	0	0	0	0	0	1
		% < Good	85.7%	57.1%	28.6%	28.6%	0.0%	28.6%	14.3%	0.0%	57.1%	0.0%	42.9%	14.3%	85.7%
		% < Mod	57.1%	42.9%	0.0%	28.6%	0.0%	14.3%	0.0%	0.0%	14.3%	0.0%	0.0%	0.0%	71.4%
		% Bad	14.3%	14.3%	0.0%	14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	14.3%

Summary of Failing Water Bodies and Eco Score

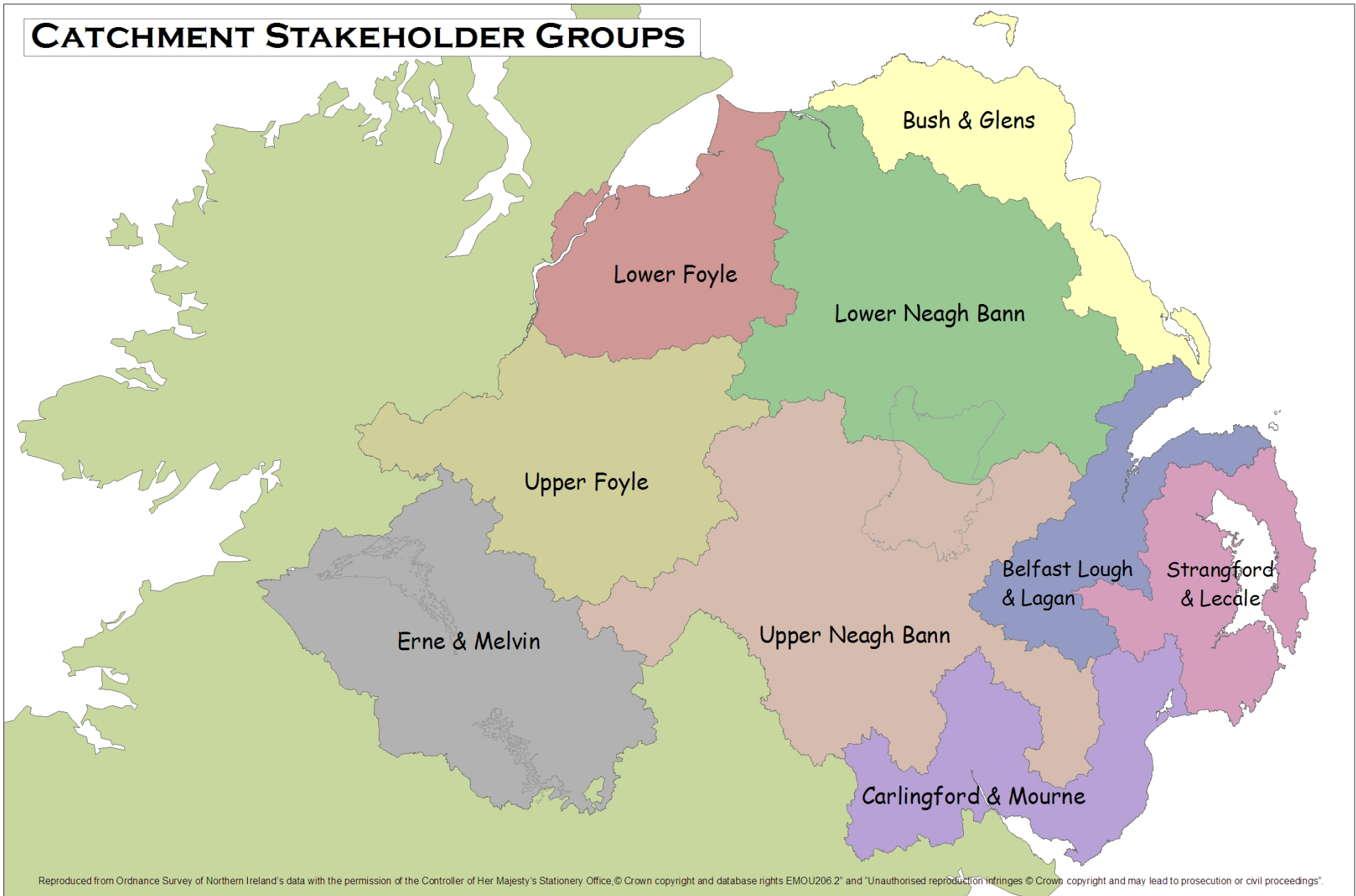
Annex 2





NW Assessment Rating												
Man Area	% <Good	Invertebrates	Macrophytes	FISH	Pearl Mussel	P & I	Number WBs <Mod	% <Mod	Number WBs <Bad	%Bad	Eco Score	Number of WBs
Upper Lough Erne	58.1%	27.9%	18.6%	0.0%	4.7%	16.3%	6	14.0%	0	0.0%	72.1	43
Strule	42.5%	22.5%	32.5%	0.0%	0.0%	0.0%	1	2.5%	0	0.0%	45.0	40
Roe	55.0%	55.0%	5.0%	5.0%	0.0%	0.0%	1	5.0%	0	0.0%	60.0	20
Owenkillew	50.0%	33.3%	5.6%	5.6%	27.8%	0.0%	0	0.0%	0	0.0%	50.0	18
Lower Lough Erne	66.7%	36.4%	30.3%	15.2%	3.0%	9.1%	7	21.2%	0	0.0%	87.9	33
Faughan	30.0%	20.0%	0.0%	10.0%	0.0%	0.0%	0	0.0%	0	0.0%	30.0	10
Derg& Mourne	47.1%	29.4%	5.9%	0.0%	0.0%	17.6%	0	0.0%	0	0.0%	47.1	17
Burdenet & Foyle	66.7%	55.6%	0.0%	11.1%	0.0%	22.2%	3	33.3%	0	0.0%	100.0	9
Arney	28.6%	14.3%	10.7%	10.7%	0.0%	3.6%	3	10.7%	0	0.0%	39.3	28
NB Assessment Rating												
Man Area	% <Good	Invertebrates	Macrophytes	FISH	Pearl Mussel	P & I	Number WBs <Mod	% <Mod	Number WBs <Bad	%Bad	Eco Score	Number of WBs
Ballinderry	91.7%	79.2%	29.2%	8.3%	16.7%	4.2%	11	45.8%	0	0.0%	137.5	24
Braib Main	45.7%	34.3%	28.6%	2.9%	0.0%	0.0%	2	5.7%	0	0.0%	51.4	35
Carlingford & Newry	68.6%	42.9%	14.3%	14.3%	0.0%	25.7%	7	20.0%	1	2.9%	91.4	35
Lough Neagh	95.2%	42.9%	33.3%	9.5%	0.0%	19.0%	4	19.0%	2	9.5%	123.8	21
Lower Bann	67.5%	57.5%	30.0%	0.0%	0.0%	7.5%	10	25.0%	2	5.0%	97.5	40
Moyola	68.4%	42.1%	42.1%	10.5%	0.0%	5.3%	2	10.5%	0	0.0%	78.9	19
Blackwater	82.4%	64.7%	35.3%	7.8%	0.0%	15.7%	16	31.4%	4	7.8%	121.6	51
Six Mile	66.7%	58.3%	8.3%	8.3%	0.0%	0.0%	1	8.3%	0	0.0%	75.0	12
Upper Bann	89.3%	60.7%	60.7%	7.1%	0.0%	7.1%	6	21.4%	0	0.0%	110.7	28
NE Assessment Rating												
Man Area	% <Good	Invertebrates	Macrophytes	FISH	Pearl Mussel	P & I	Number WBs <Mod	% <Mod	Number WBs <Bad	%Bad	Eco Score	Number of WBs
Glen & Rathlin	47.6%	33.3%	0.0%	4.8%	0%	9.5%	1	4.8%	0	0.0%	52.4	21
Bush	100.0%	88.2%	0.0%	0.0%	0%	5.9%	2	23.5%	0	0.0%	123.5	17
Larne	50.0%	0.0%	0.0%	0.0%	0%	0.0%	1	0.0%	1	0.0%	50.0	2
Belfast L	85.7%	57.1%	28.6%	28.6%	0%	14.3%	1	57.1%	0	14.3%	157.1	7
Lagan	100.0%	81.8%	27.3%	4.5%	0%	13.6%	1	40.9%	1	18.2%	159.1	22
Quoile	72.7%	54.5%	27.3%	9.1%	0%	9.1%	2	27.3%	0	0.0%	100.0	11
Strangford	100.0%	86.7%	26.7%	13.3%	0%	0.0%	11	73.3%	3	20.0%	193.3	15
South Down	78.9%	63.2%	31.6%	5.3%	0%	0.0%	2	21.1%	0	5.3%	105.3	19

LMA Implementation Plan Selection 2009 Monitoring Update

Annex 3

Option 1		Option 2		Option 3		CSG Area
Local Management Area	Eco Score	Local Management Area	Eco Score	Local Management Area	Eco Score	
Strangford	193.3	Burdennet & Foyle	100.0	Lower Lough Erne	87.9	Erne & Melvin
Lagan	159.1	Lower Lough Erne	87.9	Upper Lough Erne	72.1	
Belfast L	157.1	Upper Lough Erne	72.1	Arney	39.3	
Ballinderry	137.5	Roe	60.0	Owenkillew	50.0	Upper Foyle
Lough Neagh	123.8	Owenkillew	50.0	Derg& Mourne	47.1	
Bush	123.5	Derg & Mourne	47.1	Strule	45.0	
Blackwater	121.6	Strule	45.0	Burdennet & Foyle	100.0	Lower Foyle
Upper Bann	110.7	Arney	39.3	Roe	60.0	
South Down	105.3	Faughan	30.0	Faughan	30.0	
Quoile	100.0	Ballinderry	137.5	Ballinderry	137.5	Upper Neagh Bann
Burdennet & Foyle	100.0	Lough Neagh	123.8	Blackwater	121.6	
Lower Bann	97.5	Blackwater	121.6	Upper Bann	110.7	
Carlingford & Newry	91.4	Upper Bann	110.7	Lough Neagh	123.8	Lower Neagh Bann
Lower Lough Erne	87.9	Lower Bann	97.5	Lower Bann	97.5	
Moyola	78.9	Carlingford & Newry	91.4	Moyola	78.9	
Six Mile	75.0	Moyola	78.9	Six Mile	75.0	
Upper Lough Erne	72.1	Six Mile	75.0	Braid & Main	51.4	
Roe	60.0	Braid & Main	51.4	South Down	105.3	
				Carlingford & Newry	91.4	Carliford & Mourne
Glen & Rathlin	52.4	Strangford	193.3			
Braid & Main	51.4	Lagan	159.1	Strangford	193.3	Strangford & Lecale
Owenkillew	50.0	Belfast L	157.1	Quoile	100.0	
Larne	50.0	Bush	123.5	Lagan	159.1	Belfast & Lagan
Derg& Mourne	47.1	South Down	105.3	Belfast L	157.1	
Strule	45.0	Quoile	100.0	Bush	123.5	Bush & Glens
Arney	39.3	Glen & Rathlin	52.4	Glen & Rathlin	52.4	
Faughan	30.0	Larne	50.0	Larne	50.0	



LEGEND	
	Neagh Bann
	North Eastern
	North Western
	LMA

