

draft RIVER BASIN MONITORING PLAN

# CLASSIFICATION PAMPHLET

## Coastal Waterbody Mourne Coast

22<sup>nd</sup> December 2008



An Agency within the Department of the  
**Environment**  
[www.doeni.gov.uk](http://www.doeni.gov.uk)



INVESTOR IN PEOPLE



Northern Ireland  
**Environment**  
Agency  
[www.ni-environment.gov.uk](http://www.ni-environment.gov.uk)

## MOURNE COAST

### Water body Information

- River Basin District: NE, NBIRBD
- Water body type: CW5
- Water body characteristics: Euhaline, mesotidal, moderately exposed
- Water body area: 47.38 km<sup>2</sup>
- Heavily Modified Water Body: No

**OVERALL WATERBODY CLASSIFICATION. (H/G/M/P/B): GOOD  
(PASS/FAIL): PASS**

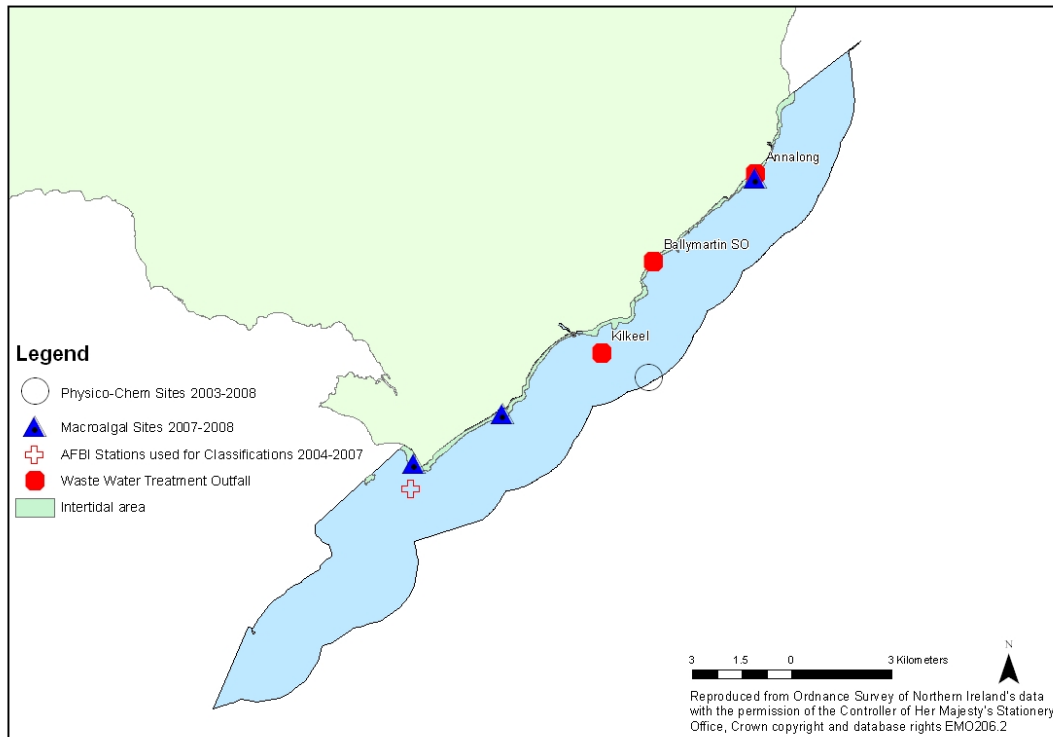


Figure showing pressures and monitoring points within Mourne Coast (Coastal Water).

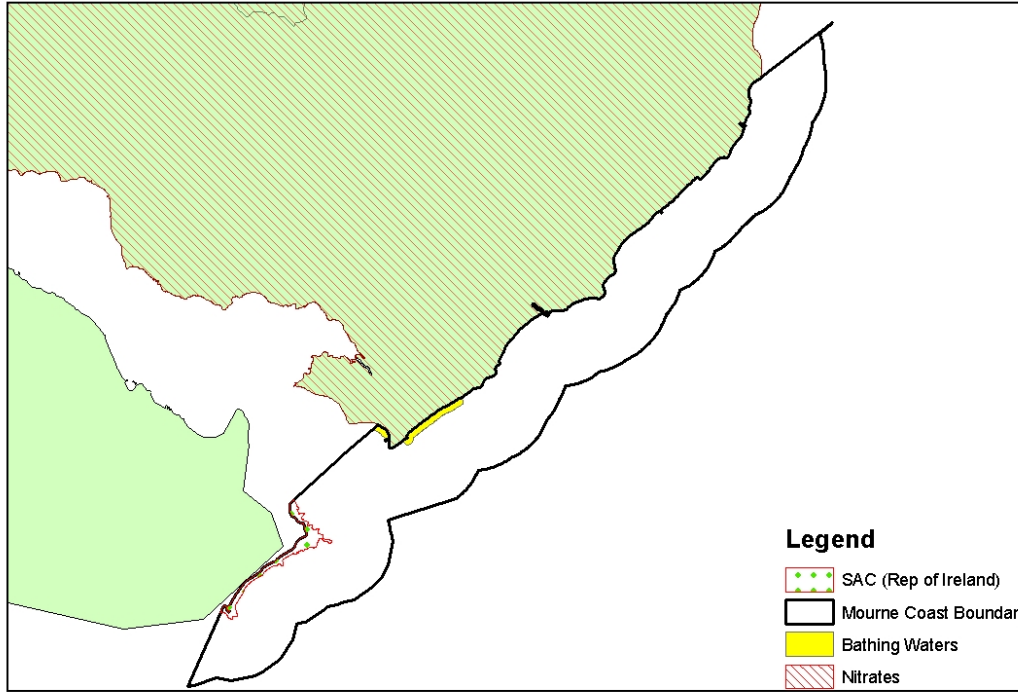
draft RIVER BASIN MANAGEMENT PLAN



WFD COASTAL WATER BODY CLASSIFICATION  
Mourne Coast

Version Date: 22/12/08


MARINE ASSESSMENT AND LICENSING TEAM



Reproduced from Ordnance Survey of Northern Ireland's data with the permission of the Controller of Her Majesty's Stationery Office, Crown copyright and database rights EMO206.2

Figure showing protected areas within Mourne Coast (Coastal Water), see Annex F.

draft RIVER BASIN MANAGEMENT PLAN

	<b>WFD COASTAL WATER BODY CLASSIFICATION</b>	
	Mourne Coast	
	<b>Version Date:</b>	22/12/08
<b>MARINE ASSESSMENT AND LICENSING TEAM</b>		

PARAMETERS TABLE

(Parameters for which classification systems are available and have been used in the first round of classification. Note: for some parameters data is not yet available hence the tools have not been applied).

<b>Ecological Quality Element</b>			
<b>Main Element</b>	<b>Sub-Element</b>	<b>Applied</b>	<b>Comment</b>
<b>Plants</b>	Macro Algae	✓	
	-Opportunistic Macroalgae	☒	Tool Not Applicable
	-Reduced Species List	✓	
	Angiosperms	☒	Tool Not Applicable
	Phytoplankton	✓	
<b>Benthic Invertebrates</b>	Infauanal Quality Index	☒	No data available
	Imposex	☒	No data available
<b>Fish</b>	Transitional Fish Classification Index		
<b>Physico-Chemical</b>	General Conditions	✓	
	-Dissolved Oxygen	✓	
	-Nutrients	☒	No data available
	Specific Pollutants ( Annex VIII subs)	☒	No data available
<b>Hydromorphological Quality Elements</b>	SEPA Rapid Designation	✓	
	TraC MIMAS	✓	
<b>Chemical Status</b>			
<b>Priority Hazardous Substances (Annex X)</b>	Annex X Substances	☒	No data available

**Waterbody Classification**

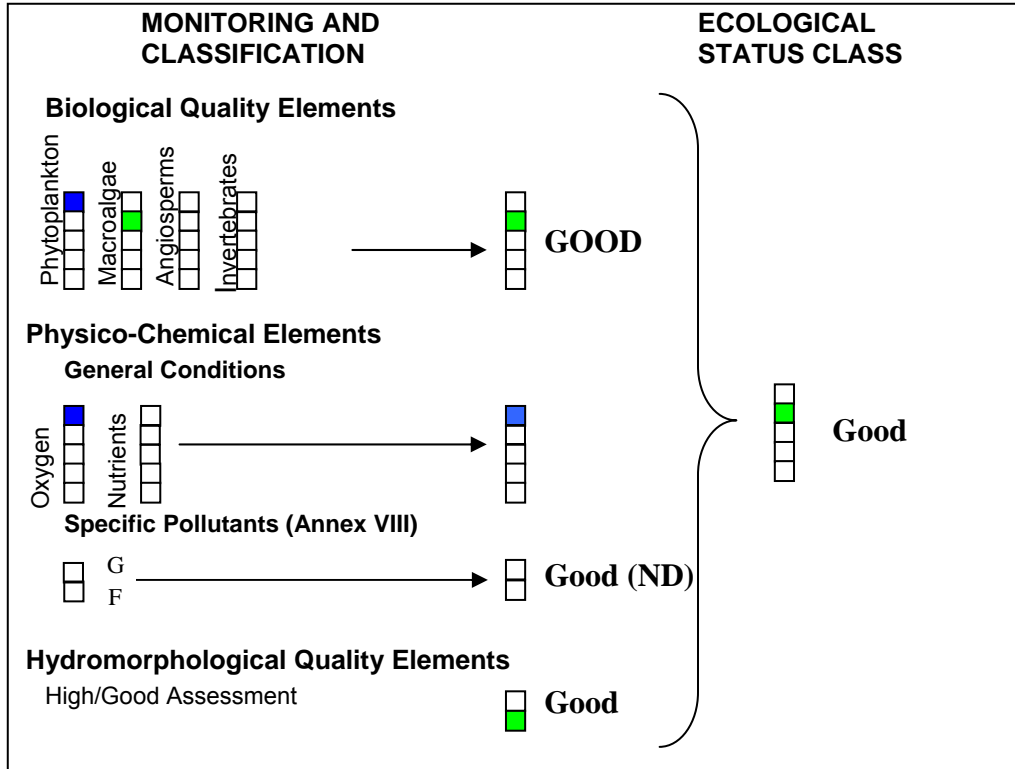


Figure showing ecological classification of Mourne Coast (Coastal Water)

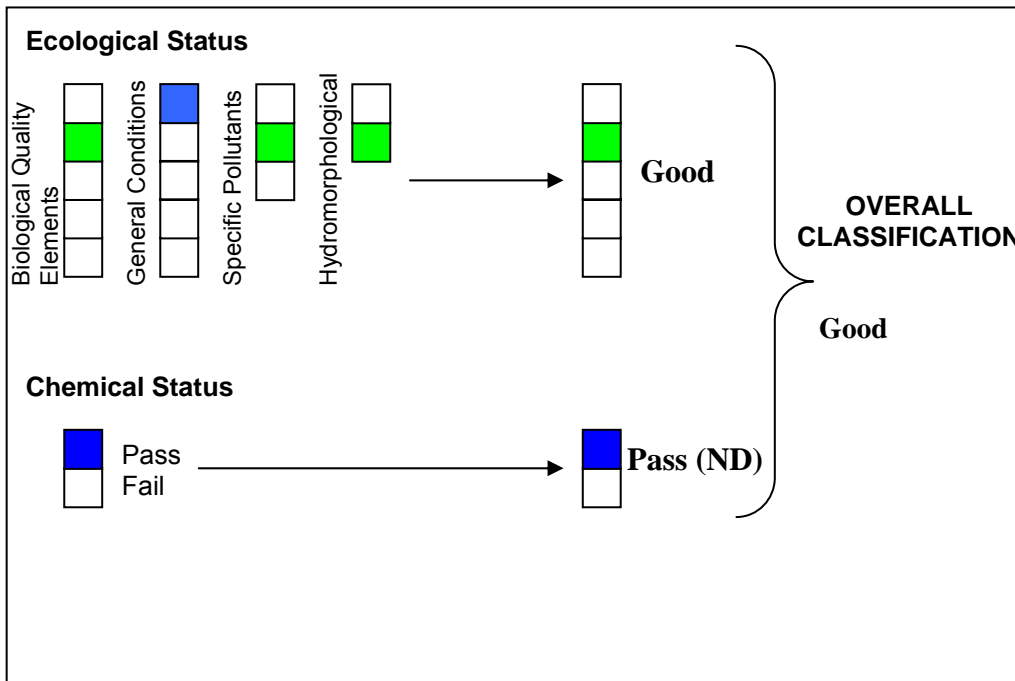



Figure showing overall classification of Mourne Coast (Coastal Water)

draft RIVER BASIN MANAGEMENT PLAN

	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast	
	<b>Version Date:</b>	22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>	

First River Basin Cycle (2004 – 2008)


Monitoring Level:

*Surveillance*

Sampling frequency for each quality element

Quality Elements	Surveillance		
	Year (if 1 in 3 yrs)	Frequenc y (if p.a.)	No. of sites
<b>Biological</b>			
Phytoplankton	2004-7		9 samples 1 sites
Macroalgae	Reduced Species List	1 year	3
Benthic Invertebrates	Infaunal Quality Index	ND	
	Imposex	ND	
<b>Physico-chemical</b>			
Nutrients	ND		
Salinity			
Temperature			
Dissolved Oxygen (DO)	2008		3
Suspended particulate matter (SPM)			
Light (Kd)			
Specific polluting substances (Annex VIII)	ND		
<b>Hydromorphology</b>			
<b>Water chemistry</b>			
(Annex X)	ND		



draft RIVER BASIN MANAGEMENT PLAN	
	WFD COASTAL WATER BODY CLASSIFICATION Mourne Coast
	Version Date: 22/12/08
	MARINE ASSESSMENT AND LICENSING TEAM

## ANNEX A: Classification of Biological Quality Elements

### MOURNE COAST

#### QE: Phytoplankton

**QE phytoplankton assessment: HIGH (LOW)**

Classification tools:

First round reporting now

1. Chlorophyll biomass index (90%ile)
2. Elevated taxa count index

- **Data store (classification):**

MARINE\Water Framework Directive\DRAFT WFD CLASSIFICATION REPORTS\QE Phytoplankton\Chlla 90th Percentile\Final 90th Percentile Phytoplankton-

- **Data Availability (spot & continuous samples):**

Phytoplankton =  
Chl = spot (2004-2007) AFBINI

1. Chlorophyll Biomass Index - 90%ile (Chl  $\mu\text{g l}^{-1}$ )  
(Growing Season 1<sup>st</sup> Mar – 30<sup>th</sup> Sept)

Waterbody Chl. biomass assessment

*HIGH (L)*

- **Thresholds:**

Water Ref. Area		Status				
		High	Good	Moderate	Poor	Bad
North/Irish Sea	Chl $\mu\text{g l}^{-1}$	<5	5-10	10-15	15-20	>20
	EQR	0 -1.0	1.0-0.8	0.8-0.6	0.6-0.4	0.4-0.2

#### Results:


90%ile	Status	Data Years	Data Quality	No. of daily averages	No. of Sites	No. of Samples	Data Confidence (proportion of possible months with data*)
2.83	<b>HIGH</b>	2004-2007	Low	0	1	9	32.1%

\* proportion of possible months (of growing season in years assessed) for which data are available

Data confidence:

Low

- The proportion of possible months sampled and the number of spatial samples collected yielded a low confidence in data confidence.
- Data collected was from AFBINI. No records of chlorophyll data from NIEA could be found within this waterbody.

<b>draft RIVER BASIN MANAGEMENT PLAN</b>	
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast
	Version Date: 22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>

## 2. Elevated Taxa Count Index

### Waterbody Elevated Taxa Assessment

- Thresholds:**

Tool	Thresholds	
	North/Irish Sea	Atlantic
I <sub>1</sub> - Individual Species Count (excl. Phaeocystis) (%)	250,000 (cells l <sup>-1</sup> )	
I <sub>2</sub> - Phaeocystis Counts (%)	10 <sup>6</sup> (cells l <sup>-1</sup> )	
I <sub>3</sub> - Total Taxa Count (%)	10 <sup>7</sup> (cells l <sup>-1</sup> )	
I <sub>4</sub> - Elevated Biomass Count (%)	>10 (µg l <sup>-1</sup> )	>5 (µg l <sup>-1</sup> )

$$\text{Waterbody Elevated count (\%)} = [I_1 (\%) + I_2 (\%) + I_3 (\%) + I_4 (\%)] / 4$$


- EQR Boundaries:**

Class	% Exceedance	EQR
High	0-15	0.67-1.0
Good	15-30	0.33-0.67
Moderate	30-40	0.28-0.33
Poor	40-50	0.20-0.33
Bad	>50	0-0.20

### Results

I <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	I <sub>4</sub>	Elevated Count Mean	Status	Data Years	No. of sampling occasions	No. of phytoplankton samples

Data confidence: No data

draft RIVER BASIN MANAGEMENT PLAN	
	WFD COASTAL WATER BODY CLASSIFICATION Mourne Coast
	Version Date: 22/12/08
	MARINE ASSESSMENT AND LICENSING TEAM

## QE: Macroalgae Mourne Coast

**QE Macroalgae assessment (+ Data confidence): GOOD (M)**

Downgraded due to presence of *Sargassum muticum*, awaiting further guidance on alien species from UKTAG.

Classification tools: Reduced species list (RSL),  
Macroalgal Blooming Tool (MBT) – tool not applicable

*Reduced Species List (RSL)*

Waterbody RSL assessment:

*High (Medium)*

- WFD surveillance monitoring: 2007, 3 sites
- Data Availability (classification)
- Data Store: G:\MARINE\Projects 07\MM07-03 Marine Plants\Macrophyte Survey 07
- Boundaries:

Parameters	Quality Status	Bad	Poor	Moderate	Good	High
	Sub-metric quality status	0.0 – 0.2	0.21 – 0.4	0.41 – 0.6	0.61 – 0.8	0.81 – 1.0
Species richness (adj. for shore)		0 – 3	3 – 10	10 – 20	20 – 34	34 – 68
Proportion of Chlorophyta (% G)		80 – 100	45 – 80	30 – 45	20 – 30	0 – 20
Proportion of Rhodophyta (% R)		0 – 10	10 – 25	25 – 35	35 – 45	45 – 100
Ecological Status Group ratio (ESG)		0.0 – 0.2	0.2 – 0.4	0.4 – 0.6	0.6 – 0.8	0.8 – 1.2
Proportion of opportunists (% opp)		50 – 100	35 – 50	25 – 35	15 – 25	0 – 15

### Results

Shore	Sub-Metric EQR							RSLE QR	Status
	Shore desc.	Sp. richness	Adj. Sp. Richness	% G	% R	ESG	% Opp		
Cranfield Point	13	42	48	16.67	50.00	1.00	9.52	0.849	HIGH
Russells Point	16	44	41	11.36	52.27	1.32	9.09	0.874	HIGH
Nicholsons Point	12	37	45	10.81	54.05	1.31	10.81	0.871	HIGH
<b>Mean</b>								<b>0.865 ±0.014</b>	<b>HIGH</b>

Data Confidence:


Medium

- Standard Deviation (±) are included with the mean EQR
- Data QA (expert team)
- WFD specific data (Reduced species list completed; Full species list not yet carried out, tool not yet completed).
- Three shores (good spatial coverage) over single year (poor temporal trend assessment)
- FSL not yet carried out

Alien taxa present (*Sargassum muticum*) :

Yes

**QE: Angiosperms – Mourne, tool not applicable**

<b>draft RIVER BASIN MANAGEMENT PLAN</b>	
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast
	Version Date: 22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>

**QE: Benthic Invertebrates – Mourne**

Overall benthic invertebrate assessment: GOOD (ND)

Classification tools: 1. Infaunal Quality Index (IQI)  
2. Imposex tool (VDSI) - NA

1. IQI (v4)  
Water body IQI assessment: Good (ND)  
No data is available for this water body.

- WFD surveillance monitoring:
  - Data store:
  - Benthic invertebrates
  - Supporting Parameters
  - Digital images
- Data Availability (classification):
- Habitat max values (sub-tidal mud):  $1-(AMBI/7) = 0.78$ ,  $1-\text{Lambda}' = 0.72$ , Taxa = 24
- Boundaries (Intercalibrated NEAGIG):

Class	Bad	Poor	Moderate	Good	High
IQI	>0.0 ≤0.24	≥0.24 <0.44	≥0.44 <0.64	≥0.64 <0.75	≥0.75


**Results**

Year	Survey	Station	n	Mean	± S.D	Status
Overall Mean						

Data confidence: Low  
No data

Alien taxa present:

<i>Eriocheir sinensis</i> (Chinese mitten crab)	No
<i>Crepidula fornicata</i> (Slipper limpet)	No

<b>draft RIVER BASIN MANAGEMENT PLAN</b>	
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast
	Version Date: 22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>

*Mourne Coast*

**2. VDSI (*Nucella lapillus*)**

Waterbody VDSI assessment:

Good (ND)

- Data store:
- Data availability:

Boundaries:


Class	Moderate	Good	High
VDSI	≥4.0	≥0.3 <4.0	<0.3
EQR	<0.33 -0	≥0.33 <0.95	0.95 – 1.0

Results:

Year	Shore	VDSI	EQR	Status

Data confidence:

No data

<b>draft RIVER BASIN MANAGEMENT PLAN</b>	
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast
	<b>Version Date:</b> 22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>

## ANNEX B: Classification of physico-chemical Quality Elements: General

### Dissolved Oxygen

**Waterbody DO assessment:** **HIGH (L)**

**Classification tools:** Comparison of 5% ile against reference standards

- **Data store:** \\marine on ehslis2k \Water Framework Directive\DRAFT WFD CLASSIFICATION REPORTS\Dissolved Oxygen
- **Data Availability:** 2008
- **Data Availability (spot & continuous samples):** Spot

- **Thresholds:**

WFD Status	Marine 5%ile	Objectives
HIGH	≥5.7 mg/L	All life stages of salmonids and transitional fish
GOOD	≥4.0 <5.7 mg/L	Presence of salmonids and transitional fish
MODERATE	≥2.4 <4.0 mg/L	Most life stages of non-salmonid adults
POOR	≥1.6 <2.4 mg/L	Presence of non-salmonids, poor survival of salmonids
BAD	<1.6 mg/L	No salmonids present, marginal survival of resident species

### Results:

5% ile DO (mg/L)	Status	Data years	Data Quality	No. of daily averages	Data Coverage (proportion of possible months with data*)
6.847	HIGH	2008	**	1	10%

\* Proportion of possible months for which data are available

### \*\*Data Quality

Low

- Instruments subject to regular calibration checks and quality assurance programme, but databases not QA'd
- Low = ≤ 4 daily averages x n (no. of assessment years)

draft RIVER BASIN MANAGEMENT PLAN



WFD COASTAL WATER BODY CLASSIFICATION  
Mourne Coast

Version Date: 22/12/08

MARINE ASSESSMENT AND LICENSING TEAM

**Nutrients – Winter DIN**

N regulation assessment

*Good (ND)*

Data store:

- Data Availability:
- Data Availability (spot & continuous samples):
- N regulation thresholds: 25 Trans and 32 coastal


Area	Salinity range	DIN (uM) Winter mean H/G	DIN (uM) Winter mean G/M
Coastal (at salinity 32)	30-34.5	12	18

Results:

Mean Winter DIN (uM) (normalised to salinity 32)	Winter DIN Daily average (n)	SPM	SPM (n)	Data Years	Data Quality	Status

Data confidence:

No data

<b>draft RIVER BASIN MANAGEMENT PLAN</b>			
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast		
	<table border="1"> <tr> <td><b>Version Date:</b></td> <td>22/12/08</td> </tr> </table>	<b>Version Date:</b>	22/12/08
	<b>Version Date:</b>	22/12/08	
<b>MARINE ASSESSMENT AND LICENSING TEAM</b>			


**ANNEX C: Classification of physico-chemical quality elements: Specific Pollutants (Annex VIII)**

**Overall specific pollutants assessment (ND)** **GH**

<b>Annex VIII: Overall Compliance</b>	PASS-No data
<b>Annex VIII: Pass/Fail</b>	PASS-No data

**Classification tools:** Comparison with EQS levels

**Data Availability:** 2008 data available for 2009 classification.


<b>draft RIVER BASIN MANAGEMENT PLAN</b>			
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast		
	<table border="1"> <tr> <td><b>Version Date:</b></td> <td>22/12/08</td> </tr> </table>	<b>Version Date:</b>	22/12/08
	<b>Version Date:</b>	22/12/08	
<b>MARINE ASSESSMENT AND LICENSING TEAM</b>			

## ANNEX D: Hydromorphological quality elements

<b>Overall hydromorphology assessment:</b>	<b>Good</b>
--	-------------

**Classification tools:**

1. TRaC Hydromorphology metrics
2. MIMAS

<b>draft RIVER BASIN MANAGEMENT PLAN</b>			
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast		
	<table border="1"> <tr> <td><b>Version Date:</b></td> <td>22/12/08</td> </tr> </table>	<b>Version Date:</b>	22/12/08
	<b>Version Date:</b>	22/12/08	
<b>MARINE ASSESSMENT AND LICENSING TEAM</b>			

## ANNEX E: Chemical Status – Annex X Chemicals


Overall water chemistry assessment: Good (No Data)

Annex X: Overall Compliance PASS-No data

Annex X: Pass/Fail PASS-No data

**Classification tools:** Comparison with EQS levels.

**Data Availability:** 2008 data available for 2009 classification.

<b>draft RIVER BASIN MANAGEMENT PLAN</b>	
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast
	Version Date: 22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>

### ANNEX F: Protected Area Objectives


<i>Water Body</i>		2008	2007	2006	2005	2004	2003
Mourne Coast / Carlingford	Cranfield (Nicholson's)						
Mourne Coast / Carlingford	Cranfield Bay						

#### **Bathing Water Directive**

- Compliance with Guideline standards
- Compliance with Mandatory standards
- Failure to comply with Mandatory standards
- Not on monitoring programme

#### **Nitrates Directive**

Until 1 January 2007, Northern Ireland had designated seven NVZs on the basis of elevated nitrate levels in groundwaters. These NVZs were very small and covered less than 1% of Northern Ireland's area. However, Northern Ireland also has a widespread problem of eutrophication of surface waters and a large proportion of this nutrient enrichment is attributable to agriculture. Following extensive consultation, the total territory of Northern Ireland was established as the area to which an action programme would be applied under the Protection of Water Against Agricultural Nitrate Pollution Regulations (Northern Ireland) 2004 with effect from 29 October 2004.

	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Mourne Coast	
	<b>Version Date:</b>	22/12/08
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>	

## GLOSSARY

<b>AFBI</b>	Agri-Food and Biosciences Institute (under contract to NIEA)
<b>AMBI</b>	AZTI Marine Biotic Index
<b>Annex 10</b>	Annex 10 Priority Hazardous Substances
<b>Annex 8</b>	Annex 8 Specific Pollutants
<b>Article 5</b>	Characterisation, typology, pressures and impacts analysis
<b>ASSI</b>	Area of Special Scientific Interest
<b>DIN</b>	Dissolved Inorganic Nitrogen
<b>DO</b>	Dissolved Oxygen
<b>EQR</b>	Ecological Quality Ratio
<b>EQS</b>	Ecological Quality Status
<b>EUNIS</b>	European Nature Information System
<b>FSL</b>	Full Species List
<b>GEP</b>	Good Ecological Potential
<b>H/G/M/P/B</b>	High/Good/Moderate/Poor/Bad (Classification Status)
<b>H/M/L</b>	High/Medium/Low (Confidence)
<b>HMWB</b>	Heavily Modified Water Body
<b>IQI</b>	Infaunal Quality Index
<b>IRBD</b>	International River Basin District
<b>LOD</b>	Limit of Detection
<b>MBT</b>	Macroalgal Blooming Tool
<b>MEP</b>	Moderate Ecological Potential
<b>NB</b>	Neagh Bann
<b>ND</b>	No data
<b>NE</b>	North Eastern
<b>NEAGIG</b>	North Eastern Atlantic Geographical Intercalibration Group
<b>NIEA</b>	Northern Ireland Environment Agency
<b>N-regs</b>	Nitrogen Regulation
<b>NVZ</b>	Nitrate Vulnerable Zone
<b>NW</b>	North Western
<b>Physico-chem</b>	Physical and chemical monitoring
<b>RSL</b>	Reduced Species List
<b>SAC</b>	Special Area of Conservation
<b>SEPA</b>	Scottish Environment Protection Agency
<b>SPA</b>	Special Protected Area
<b>TNA</b>	Tool Not Applicable
<b>TraC MImAS</b>	Transitional and Coastal Morphology Impact Assessment System
<b>TUD</b>	Tool Under Development
<b>UKAS</b>	United Kingdom Accreditation Service
<b>UKTAG</b>	United Kingdom Technical Advisory Group for Water Framework Directive
<b>UNICORN</b>	Database for marine organisms.
<b>UWWTD</b>	Urban Waste Water Treatment Directive (91/271/EEC)
<b>VDSI</b>	Vas Deferens Sequence Index
<b>WFD</b>	Water Framework Directive