

Neagh Bann River Basin Management Plan

Portstewart Bay Classification

December 2009




An Agency within the Department of the
Environment
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Environment
Agency

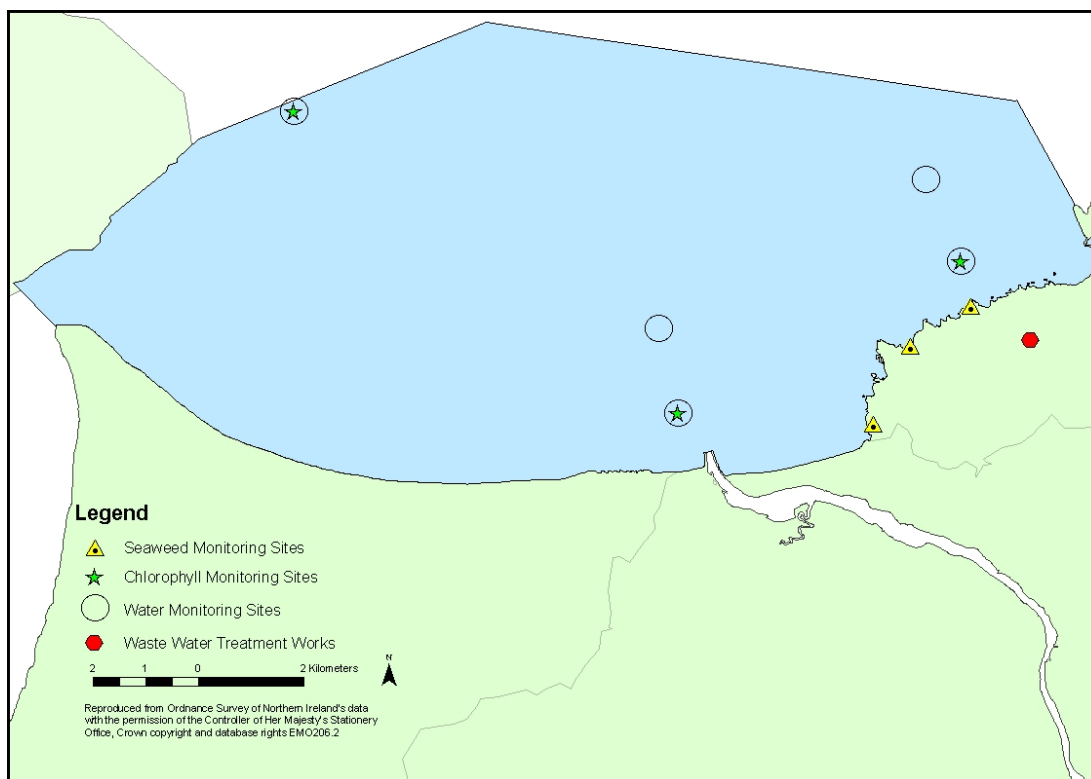
RIVER BASIN MANAGEMENT PLAN		
	WFD COASTAL WATER BODY CLASSIFICATION Portstewart Bay	
	Version Date:	22/12/09
	MARINE ASSESSMENT AND LICENSING TEAM	

PORTSTEWART BAY


Water body Information

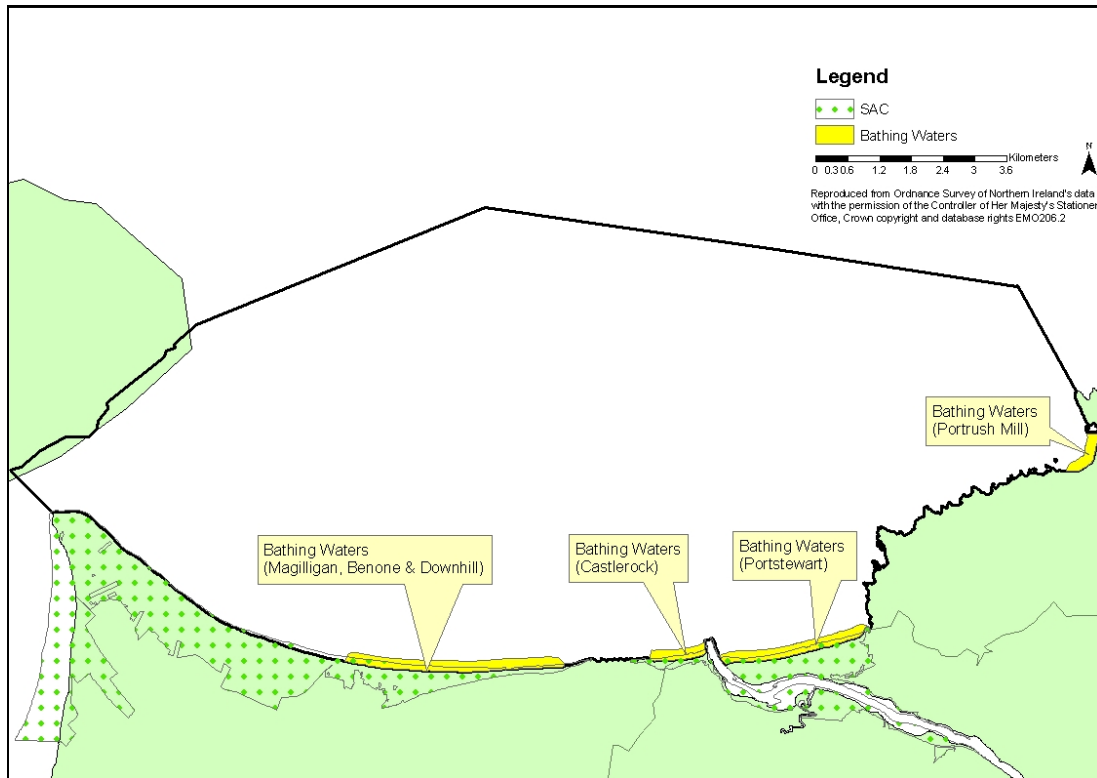
- River Basin District: Neagh Bann
- Water body type: CW2
- Water body code : UKGNNIIE6NB010
- Water body characteristics: Euhaline, mesotidal, exposed
- Water body area: 122.09 km²
- Heavily Modified Water Body: No

OVERALL WATERBODY CLASSIFICATION	(H/G/M/P/B): (PASS/FAIL):	GOOD PASS	
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Map showing pressures and monitoring points within Portstewart Bay (Coastal Water).

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Map illustrating protected areas in Portstewart Bay (Coastal Waters), see Annex F.

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PARAMETERS TABLE

Parameters for which classification systems are available and have been used in the first round of classification. Some biological assessment tools are not suitable for all water bodies due to habitat type.

Ecological Quality Element			
<i>Main Element</i>	<i>Sub-Element</i>	<i>Applied</i>	<i>Comment</i>
Macroalgae (seaweeds)	Reduced Species List	✓	
Benthic Invertebrates	Infaunal Quality Index	☒	Tool Under Development
	Imposex	☒	Tool Not Applicable
Physico-Chemical (water)	General Conditions	✓	
	-Dissolved Oxygen	✓	
	-Nutrients	✓	
	Specific Pollutants (Annex VIII subs)	☒	Data Not Available
Hydromorphological Quality Elements	SEPA Rapid Designation	✓	
	TraC MIMAS	✓	
Chemical Status			
Priority Hazardous Substances (Annex X)	Annex X Substances	☒	Data Not Available

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Waterbody Classification

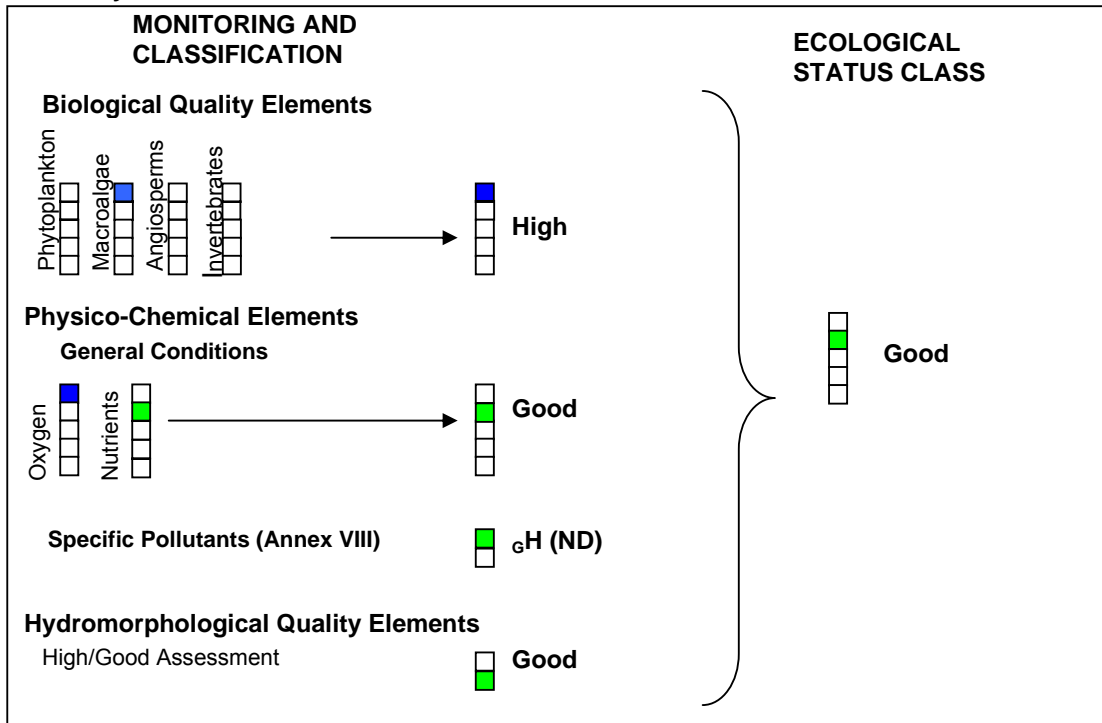


Figure showing ecological classification of Portstewart Bay (Coastal Water)

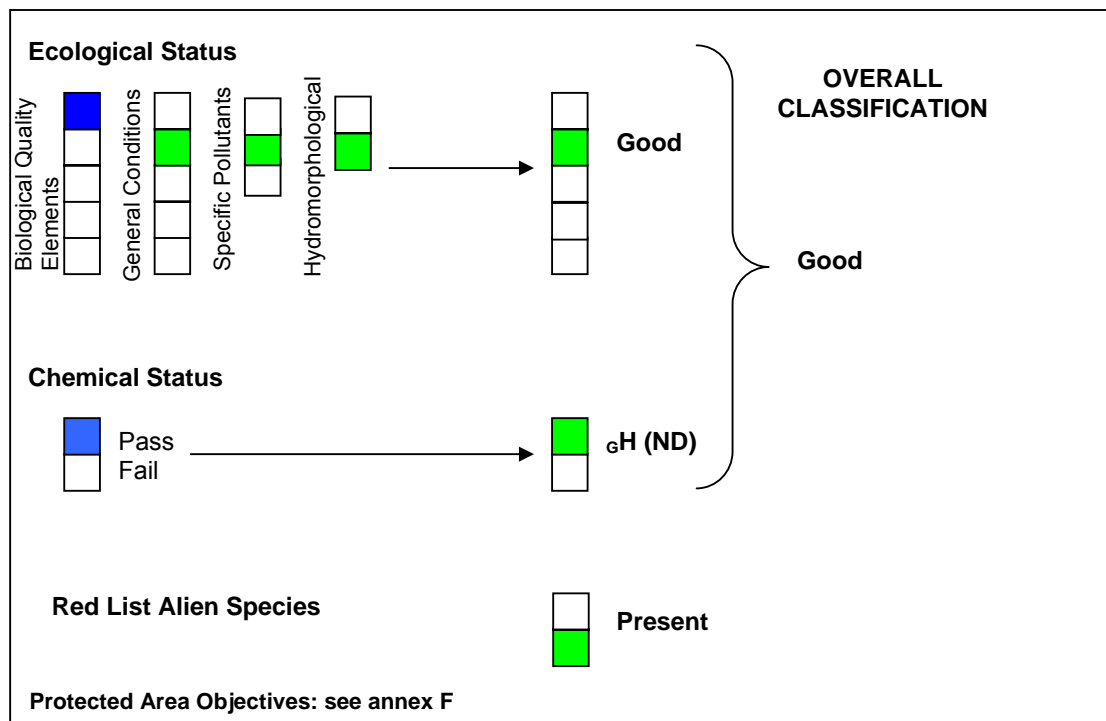



Figure showing overall classification of Portstewart Bay (Coastal Water)


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First River Basin Cycle (2004 – 2008)

Monitoring Level: Surveillance

Sampling frequency for each quality element


Quality Elements		Year (if 1 in 3 yrs)	No. of sites
Biological			
Macroalgae (seaweed)	Reduced Species List	2007-8	3 sites 5 surveys
Physico-chemical			
Nutrients		2008	22 samples, 6 site plus transect
Salinity		2008	
Temperature		2008	
Dissolved Oxygen (DO)		2007-8	3
Other polluting substances (Annex VIII)		ND	
Hydromorphology		2007	
Water chemistry			
(Annex X)		ND	

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ANNEX A: Classification of Biological Quality Elements

QE: Phytoplankton

QE phytoplankton assessment (+ *Data confidence*): *GOOD (No data)*

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QE: Macroalgae Portstewart Bay

QE macroalgal assessment (+ data confidence):	HIGH (M)	
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Classification tools: Reduced species list (RSL), MBT – tool not applicable

Reduced Species List (RSL)

Waterbody RSL assessment: High (M)

- WFD surveillance monitoring: 2007, 2008
- Data Availability (classification): 2007 - 1 site, 2008 - 3 sites
- Data Store: Data Store: G:\MARINE\Projects 07\MM07-03 Marine Plants\Macrophyte Survey 07
- G:\MARINE\Projects 08\Marine Macrophytes

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							RSL EQR	Status
	Shore desc.	Sp. richness	Adj. Sp. Richness	% G	% R	ESG	% Opp		
Rinagree Point 2007	18	48	38.4	22.92	41.67	1.00	14.58	0.764	GOOD
Rinagree Point 2008	18	50	40.0	18.00	48.00	0.92	12.00	0.810	HIGH
Berrins 2008	17	48	41.8	18.75	54.17	1.00	10.42	0.835	HIGH
Clubhouse 2008	17	47	40.9	14.89	53.19	1.04	10.64	0.844	HIGH
Rinagree Point 2008 NH	18	43	34.4	13.95	44.19	1.15	18.60	0.790	GOOD
Mean								0.81 ±0.03	HIGH

Data Confidence:


Medium

- Data QA (expert team)
- WFD specific data (Reduced species list completed; Full species list not yet carried out, tool not yet completed).
- 3 shores (very poor spatial coverage) over 2 years (poor temporal trend assessment).
- Standard Deviation (±) are included with the mean EQR
- FSL not yet carried out

Alien taxa present (*Sargassum muticum*): Present

QE: Angiosperms Portstewart Bay – tool not applicable

QE: Benthic Invertebrates – Portstewart Bay – tool not applicable

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

Dissolved Oxygen

Dissolved oxygen (+ data confidence):	HIGH (M)	
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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:** 2007/2008
- **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*)
6.83	HIGH	07/08	**	3	14.3%

* 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).

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Nutrients – Winter Dissolved Inorganic Nitrogen DIN

Winter DIN (+ Data confidence):	GOOD (L)	
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- **Data store:**
\\marine on ehslis2k \Water Framework Directive\Nuala-Lesley Nutrients\DIN for Classification\Coastal Water
- **Data Availability:** 2008, DIN & salinity (November to February)
- **Data Availability (spot & continuous samples):** spot and transect


Winter DIN thresholds:

Area	Salinity range	DIN (uM) HIGH	DIN (uM) GOOD	DIN (uM) MODERATE
Coastal (at salinity 32)	30-34.5	<12	≥12 ≤18	>18

Results:

Mean Winter DIN (uM) (normalised to salinity 32)	Winter DIN Daily average (n)	No. of samples (n)	No. of sites	Data Years	Data Quality	Status
12.39	6	22	6 (plus transect)	2008	Database not yet QA'd	Good

Data confidence: More data required – (Low overall)


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

Specific pollutants assessment (+data confidence)	gH (ND)	
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Classification tools: Comparison with EQS levels.

Data availability : No data


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ANNEX D: Hydromorphological quality elements

Overall hydromorphology assessment	GH	
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Classification tools:

1. TRaC Hydromorphology metrics
2. MIMAS


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ANNEX E: Chemical Status – Annex X Chemicals

Specific pollutants assessment (+data confidence)	gH (ND)	
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Classification tools: Comparison with EQS levels.

Annex X: Overall Compliance	Pass - ND
Annex X: Pass/Fail	Pass - ND

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ANNEX F: Protected Area Objectives

Water body	Protected area	Designation	Status	Reason for non-compliance
Portstewart Bay	Magilligan	SAC	No marine features, though the boundary includes the intertidal.	

Bathing Water Directive

Water Body		2008	2007	2006	2005	2004	2003
Portstewart Bay	Benone						
Portstewart Bay	Castlerock						
Portstewart Bay	Portstewart						
Portstewart Bay	Portrush (Mill) West						
Portstewart Bay	Downhill						


	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.

Annex G: Alien Species

A low density of *Sargassum muticum* has been identified in this water body (NIEA survey).

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GLOSSARY

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

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the natural environment and built heritage for
the benefit of present and future generations.



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