

RIVER BASIN MONITORING PLAN

WATER FRAMEWORK DIRECTIVE 2ND CYCLE CLASSIFICATION SUMMARY

2015-2021

Coastal Water Body - Belfast Lough Inner

31/05/2015

RIVER BASIN MANAGEMENT PLAN	
 <p>Department of the Environment www.doeni.gov.uk Marine Environment Division</p>	WFD COASTAL WATER BODY CLASSIFICATION Belfast Lough Inner
	Version Date: 31/05/2015
MONITORING & ASSESSMENT TEAM	

BELFAST LOUGH INNER

Water body Information

- River Basin District: North Eastern
- Water Body Code: UKGBNI6NE090
- Water body type: CW5
- Water body characteristics: Euhaline, mesotidal, moderately exposed
- Water body area: 49.95 km²
- Heavily Modified Water Body: No
- 2021 Classification Objective: Moderate

2015 CLASSIFICATION	MODERATE	PASS/FAIL 2021 OBJECTIVE	PASS
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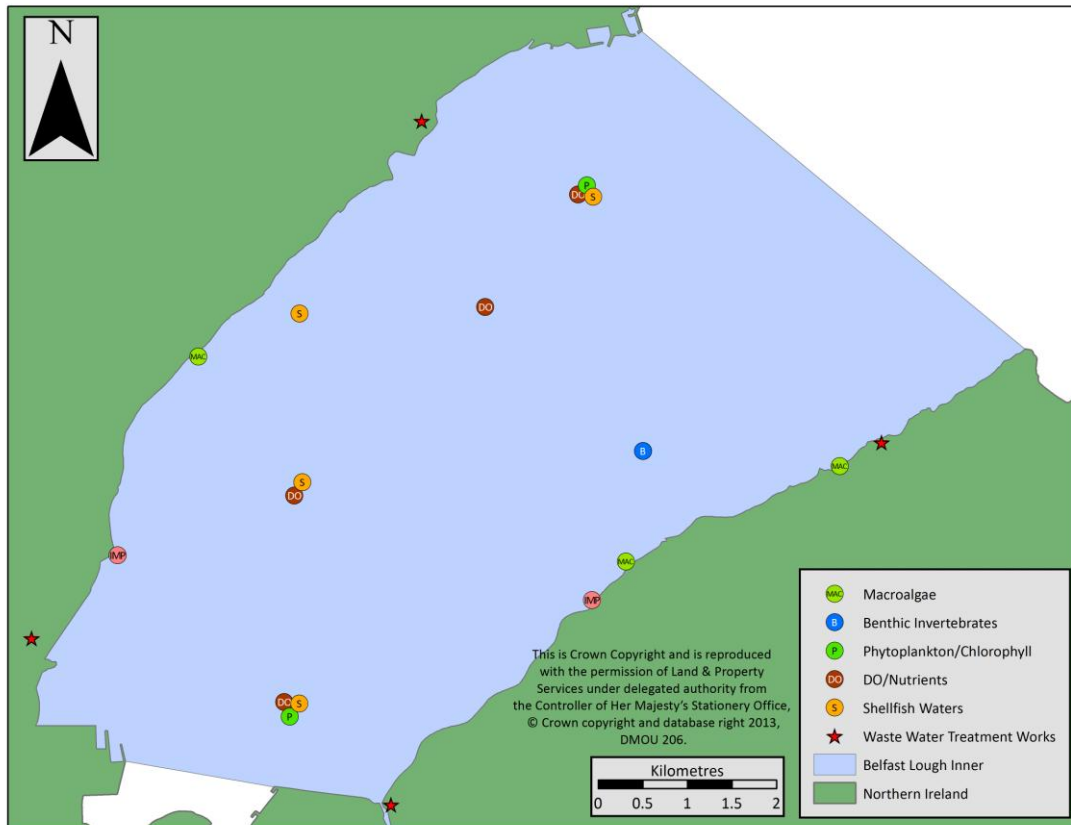


Figure1: Waste water treatment pressures and monitoring sites within Belfast Lough Inner (Coastal Water).

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Table 1: Parameters for which classification systems are available and have been used in this 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>
Phytoplankton	Biomass	✓	
	Elevated Taxa Count Index	✓	
Macroalgae (Seaweeds)	Opportunistic Macroalgae	<input type="checkbox"/>	Tool not suitable.
	Reduced Species List	✓	
Angiosperms	Seagrass	<input type="checkbox"/>	Tool not suitable.
	Saltmarsh	<input type="checkbox"/>	
Benthic Invertebrates	Infaunal Quality Index	✓	
	Imposex	✓	
Physico-chemical (Water)	-Dissolved Oxygen	✓	
	-Nutrients	✓	
	Specific Pollutants (Annex VIII substances)	✓	
Hydromorphological Quality Elements	SEPA Rapid Designation	✓	
	TraC MIMAS	✓	
Chemical Status			
Priority Hazardous Substances	Annex X substances	✓	

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Table 2: Sampling frequency for each quality element

Monitoring Level: Surveillance

Quality Elements		Data years contributing to classification	No. of sites/samples
Biological			
Phytoplankton		2009-2014	18 sites 123 samples
Macroalgae (Seaweeds)	Reduced Species List	2010, 2013-2014	3 sites 6 surveys
Benthic Invertebrates	Infaunal Quality Index	2010-2013	13 sites 46 samples
	Imposex	2010, 2013	3 sites
Physico-chemical			
Nutrients		2010-2015	50 samples 19 sites
Dissolved Oxygen (DO)		2010-2015	153 daily averages
Specific polluting substances (Annex VIII)		2010-2014	
Hydromorphology		2007	
Water chemistry			
(Annex X)		2010-2014	

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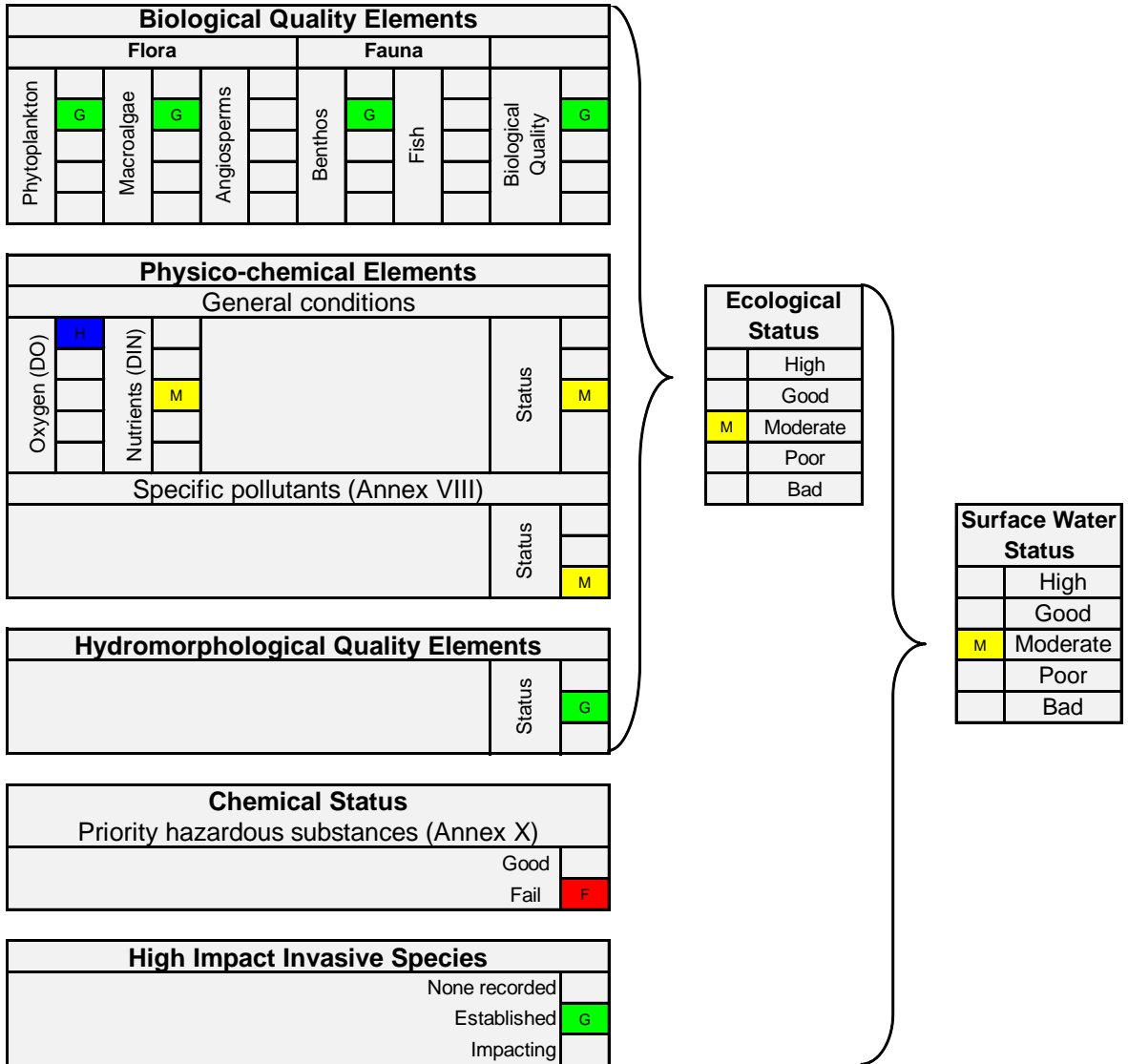


Figure 2: Overall classification of Belfast Lough Inner (Coastal Water)

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ANNEX A: Classification of Biological Quality Elements

QE: Phytoplankton

QE Phytoplankton assessment (+ data confidence):	GOOD (51.9%)	
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Classification tools:

1. Chlorophyll biomass index (90%ile)
2. Elevated taxa count index:
3. Seasonal succession: Not applied, insufficient data.

1. Chlorophyll Biomass Index

Data store: <M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\Coastal data\BELFAST INNER 2015.XLS>

<M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\Coastal data\Belfast Inner&Outer 90th Percentile.xls>

Data Availability (spot & continuous samples): spot samples (2009 - 2014) NIEA & AFBINI.

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	EQR	Status	Data Years	No. of Sites	No. of Samples	Data Confidence
7.67	0.69	Good	2009-2014	12	82	99.1%

Data confidence: 99.1%

Data analysed using <M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\2015CW Phytoplankton CoC tool v10 7 UKTAG.xls>

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2. Elevated Taxa Count Index

Waterbody Elevated Taxa Assessment

Thresholds:

Tool	Thresholds	
	North/Irish Sea	Atlantic
I ₁ - Individual Species Count (excl. Phaeocystis) (%)	500,000 (cells l ⁻¹)	
I ₂ - Total Taxa Count (%)	10' (cells l ⁻¹)	
I ₃ - Elevated Biomass Count (%)	>10 (µg l ⁻¹)	>5 (µg l ⁻¹)

EQR Boundaries:

% exceedances (Face value range)	Metric range (0-1)	Class
0 - <10	≥0.8 - 1.0	High
≥10 - < 20	≥0.6 - < 0.8	Good
≥20 - < 40	≥0.4 - < 0.6	Moderate
≥40 - <60	≥0.2 - < 0.4	Poor
≥60 - 100	≥0 - < 0.2	Bad

Results: % Exceedance

I ₁	I ₂	I ₃	Elevated Count Mean	Status	Data Years	No. of phytoplankton samples	Data confidence
12.3%	0	3.5%	0.905	HIGH	2009-2014	57	98.6%

Data confidence: 98.6%

Data analysed using [M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\2015CW Phytoplankton CoC tool v10 7 UKTAG.xls](#)

Presence of alien/ nuisance species: *none*

Overall Waterbody Status

Good (51.9%)

High (48.1%)

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QE: Macroalgae

QE Macroalgae assessment (+ data confidence):	GOOD (99.1%)	
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Classification tools:

1. Reduced species list (RSL).
2. Macroalgal Blooming Tool (MBT) – not applicable
3. Angiosperms – not applicable

- **WFD surveillance monitoring:** 2010, 2013, 2014
- **Data Availability (classification):**, 2010 – 3 sites, 2013 -1 site, 2014 -2 sites.
- **Data Store** [M:\Projects 14\Phycology 2014\MM14-12 Intertidal Rocky Shore\FSL-RSL Classification update 2015 \(09-14\)\Datasheet.xls](#)

Thresholds:

Parameter	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	Sp. richness	Adj. Sp. Richness	% G	% R	ESG	% Opp		
Rockport 10	15	45	45	22.22	42.22	0.88	13.33	0.774	GOOD
Culloden 10	15	39	15	23.08	46.15	0.63	20.51	0.697	GOOD
Lough shore 10	14	30	32.1	20.00	43.33	0.88	23.33	0.722	GOOD
Rockport 13	14	39	41.7	23.08	43.59	1.29	17.95	0.779	GOOD
Rockport 14	14	38	40.66	18.42	50.00	1.38	18.42	0.80	GOOD
Culloden 14	20	35	24.15	20.00	51.43	0.75	22.86	0.70	GOOD
Mean								0.745 +/- 0.05	GOOD

Confidence of Classification: GOOD (99.1%)

- Data analysed for Confidence of Class using PIRATES (V04)...[PIRATES_v04 - Class update 2015 \(09-14\) for UKTAG.xls](#)
- 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).
- 3 shores (good spatial coverage) over 3 years (good temporal trend assessment).

Alien taxa: *Sargassum muticum*

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QE: Benthic Invertebrates

QE Benthic Invertebrate assessment (+ data confidence):	GOOD (L)	
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Classification tools: 1. Infaunal Quality Index (IQI)
2. Imposex tool (VDSI)

1. IQI (UKTAG v01 20140228)

Water body IQI assessment:

Good (Low)

WFD surveillance monitoring:

- **Data store:** [..\Belfast Lough Inner water body\Belfast Lough Inner Waterbody 08-13 1mm data.xlsx](#)
- **Benthic invertebrates** UNICORN (NMMT) Database
- **Supporting Parameters** Water Quality Data Set
- **Digital images** AMAP Project folder
- **Data Availability (classification):** 13 sites, 5 & 1 reps, 6 years, Day Grab, 1 mm sieve, n=46.

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	Annual Mean	Annual ± S.D	Status
2010	MM-CSEG	BL5 (5)	5	0.64	0.02	Good
2011	MM-CSEG	BL5 (5)	5	0.78	0.02	High
2012	MM-CSEG, BParker12	BL5 (5), P1,2,3,6,8,23, 24, 25, 27, 28, 29,30	31	0.74	0.08	Good
2013	MM-CSEG	BL5 (5)	5	0.85	0.02	High
2014	MM-CSEG	BL5 (5)	-	-	-	-
2015	MM-CSEG	BL5 (5)	-	-	-	-
Overall 6 year waterbody means			11.5	0.75(*0.71)	0.04	Good

*IQI derived from data averaged minus Standard Deviation (see issues with tools paper). This figure is used for classification.

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Data confidence: **Low**

- Sample analysis QA'd through NMBAQC (Good)
- Database QA'd (Good)
- No specific WFD data (single point with reps and additional spatial coverage in 2012 with 13 sites)

Alien taxa present: *Crepidula fornicata* (Slipper limpet) present in AFBINI survey.

2. VDSI (*Nucella lapillus*)

Waterbody VDSI assessment:

Good (M)

- **Data store:** [..\\..\\BIOEFFECTS\\Imposex\\Imposex 2013\\Report\\IMPOSEX MASTER DATA SHEET TEMPLATE.xls](#)
- **Data availability:** 2004/2007/2010/2013 NI survey

Boundaries:

Class	Good	High
VDSI	≥0.3 to <4.0	<0.3
EQR	≥0.34 to <0.95	≥0.95

Results:

Year	Shore	VDSI	EQR	Status
2013	Carrickfergus	2.90	0.52	Good
2013	Cultra	0.33	0.94	Good
2013	Ross Rock	0.00	1.00	High
	Mean	1.08		Good

Data confidence:

Medium

- Sample analysis QA through QUASIMEME (High)
- ≥3 sites (High)

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ANNEX B: Classification of physico-chemical Quality Elements

QE: Dissolved Oxygen

Dissolved Oxygen (+ data confidence):	HIGH (100%)	
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Classification tools: Comparison of 5% ile against reference standards

- Data Availability: 2010 to 2015
- Data Store: [..\DO Classification 2012\Shortcut to DO FIELD VALUES 2006 -2010.Ink](#)
- 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*)
7.49	HIGH	2010-2015	**	153	

* Proportion of possible months for which data are available

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QE: Nutrients – N regulation

N regulation assessment (+ data confidence):	MODERATE (69%)	
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- **Data Store:** [..\Coastal WB inc AFBI 15.xls](#)
- **Data Availability:** 2010 to 2015
DIN & salinity (Nov to Feb)
- **Data Source (spot & continuous samples):** spot & continuous

Thresholds:

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

Results:

Mean Winter DIN (uM) (Avg DIN)*	Winter DIN Daily average (n)	No. of samples (n)	No. of sites	Data Years	Data Quality	Status
28.06	0	50	19 (inc con mon)	2010 - 2015	Database not yet QA'd	MODERATE

*Average DIN used as r^2 value of regression model is less than 0.75

Data confidence source: [..\CofCDINth.xlsx](#)

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

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

Data assessed for 2013 Update:

Specific Pollutants:

Suite	Parameter	Data Availability
Trace Metals	Chromium	CSEG 2012 / SWMP 2012
Trace Metals	Iron	CSEG 2012 / SWMP 2012
Trace Metals	Copper	CSEG 2012 / SWMP 2012
Trace Metals	Zinc	CSEG 2012 / SWMP 2012
Trace Metals	Arsenic	CSEG 2012 / SWMP 2012
Trace Organics (OPONS)	Dimethoate	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Diazinon	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Fenitrothion	OCT 2010 – JUN 2011
Urea Herbicides	Linuron	OCT 2011 – MAY 2012
Nutrients (Winter Nutrients)	Unionised Ammonia (at pH8)	WIN NUTS 2012-2013
Candidate Specific pollutant	Glyphosate	JAN 2013 – MAR 2013

Other Pollutants – DSD list 2 (with existing EQS):

Suite	Parameter	Data Availability
Trace Metals (DSD list 2)	Vanadium	CSEG 2012
Trace Organics (OPONS)	Mevinphos	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Triazaphos*	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Dichlorvos	OCT 2010 – JUN 2011

Triazaphos* LOD above the EQS.

*Further data is available but cannot be used for classification until the assessment of Kinnegar and Newtownabbey WWTW's trace organics monitoring data is completed.

Link to Data, Assessment and EQSs

[G:\MARINE\Water Framework Directive\WFD ANNUAL CLASSIFICATION UPDATE 2013\Chemistry](#)

Data assessed for 2014 Update:

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Suite	Parameter	Data Availability
Trace Metals	Chromium	CSEG 2013 / SWMP 2013
Trace Metals	Iron	CSEG 2013 / SWMP 2013
Trace Metals	Copper	CSEG 2013 / SWMP 2013
Trace Metals	Zinc	CSEG 2013 / SWMP 2013
Trace Metals	Arsenic	CSEG 2013 / SWMP 2013

Other Pollutants – DSD list 2 (with existing EQS):

Suite	Parameter	Data Availability
Trace Metals (DSD list 2)	Vanadium	CSEG 2013
Trace Metals (DSD list 2)	Boron	CSEG 2013

No EQS failures

Link to Data, Assessment and EQSs

[..\Data](#)

Data assessed for 2015 Update:

Suite	Parameter	Data Availability
Trace Organics	Permethrin	June 2013 – June 2014
Trace Organics	Cypermethrin	June 2013 – June 2014
Trace Organics	Toluene	Nov 2013 – Sept 2014
Trace Organics	Xylene	Nov 2013 – Sept 2014
Trace Metals	Chromium	Sept 2014 – Dec 2014
Trace Metals	Iron	Sept 2014 – Dec 2014
Trace Metals	Copper	Sept 2014 – Dec 2014
Trace Metals	Zinc	Sept 2014 – Dec 2014
Trace Metals	Arsenic	Sept 2014 – Dec 2014

Other Pollutants – DSD list 2 (with existing EQS):

Suite	Parameter	Data Availability
Trace Metals (DSD list 2)	Vanadium	Sept 2014 – Dec 2014

EQS failures:

Cypermethrin

Link to Data, Assessment and EQSs:

[G:\MARINE\Water Framework Directive\WFD ANNUAL CLASSIFICATION UPDATE 2015\2015 QE sheets](#)

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ANNEX D: Hydromorphological quality elements

Overall hydromorphology assessment	cH	
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Classification tools:

1. TRaC Hydromorphology metrics
2. MIMAS

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ANNEX E: Chemical Status – Annex X Chemicals

Priority hazardous substances (+data confidence)	FAIL	
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Classification tools: Comparison with EQS levels.

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

Data Assessed for 2013 Update:

Suite	Parameter	Data Availability
Trace Metals	Nickel	CSEG 2012
Trace Metals	Cadmium	CSEG 2012
Trace Metals	Lead	CSEG 2012
Trace Metals	Mercury	CSEG 2012
Trace Organics (OPONS)	Atrazine	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Chlorfenvinphos	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Chlorpyrifos	OCT 2010 – JUN 2011
Trace Organics (OPONS)	Simazine	OCT 2010 – JUN 2011
Urea Herbicides	Isoproturon	OCT 2011 – MAY 2012
Urea Herbicides	Diuron	OCT 2011 – MAY 2012
PAH	Anthracene	OCT 2010 – JUN 2011
PAH	Fluoranthene	OCT 2010 – JUN 2011
PAH	Naphthalene	OCT 2010 – JUN 2011
PAH	Benzo (a) pyrene	OCT 2010 – JUN 2011
PAH	*Benzo(b)fluoranthene	OCT 2010 – JUN 2011
PAH	*Benzo(k)fluoranthene	OCT 2010 – JUN 2011
PAH	*Benzo(g,h,i)perylene	OCT 2010 – JUN 2011
PAH	*Indeno(1,2,3 cd) pyrene	OCT 2010 – JUN 2011

*AA - EQS = Sum of Benzo(b)fluoranthene and Benzo(k)fluoranthene = 0.03ug/l
(No Marine MAC – EQS)

*AA - EQS = Sum of Benzo(g,h,i)perylene and Indeno(1,2,3 cd) pyrene = 0.002ug/l (No Marine MAC – EQS)

No EQS failures

Further data will be available for classification once assessment of Kinnegar and Newtownabbey WWTW 2011 data is complete.

Link to Data, Assessment and EQSs:

[G:\MARINE\Water Framework Directive\WFD ANNUAL CLASSIFICATION UPDATE 2013\Chemistry](#)

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Data Assessed for 2014 Update:

Suite	Parameter	Data Availability
Trace Metals	Nickel	CSEG 2013/SWMP 2013
Trace Metals	Cadmium	CSEG 2013/SWMP 2013
Trace Metals	Lead	CSEG 2013/SWMP 2013
Trace Metals	Mercury	CSEG 2013/SWMP 2013

No EQS failures

Link to Data, Assessment and EQSs:

[..\Data](#)

Data Assessed for 2015 Update:

Suite	Parameter	Data Availability
Trace Metals	Nickel	Sep 2014 – Dec 2014
Trace Metals	Cadmium	Sep 2014 – Dec 2014
Trace Metals	Lead	Sep 2014 – Dec 2014
Trace Metals	Mercury	Sep 2014 – Dec 2014
Trace Organics	Benzene	Nov 2013 – Sept 2014
Trace Organics	Nonylphenol	April 2014 – Dec 2014
Trace Organics	Octylphenol	April 2014 – Dec 2014
Pesticides	Pentachlorobenzene	April 2014 – Dec 2014
Pesticides	Trifluralin	April 2014 – Dec 2014
Pesticides	HCH	April 2014 – Dec 2014
Pesticides	Hexachlorobenzene	April 2014 – Dec 2014
Pesticides	Alachlor	April 2014 – Dec 2014
Pesticides	Cyclodienes	April 2014 – Dec 2014
Pesticides	Endosuphan	April 2014 – Dec 2014
Pesticides	DDT	April 2014 – Dec 2014
Pesticides	pp DDT	April 2014 – Dec 2014

EQS Failures:

HCH

Link to Data, Assessment and EQSs:

[G:\MARINE\Water Framework Directive\WFD ANNUAL CLASSIFICATION UPDATE 2015\2015 QE sheets](#)

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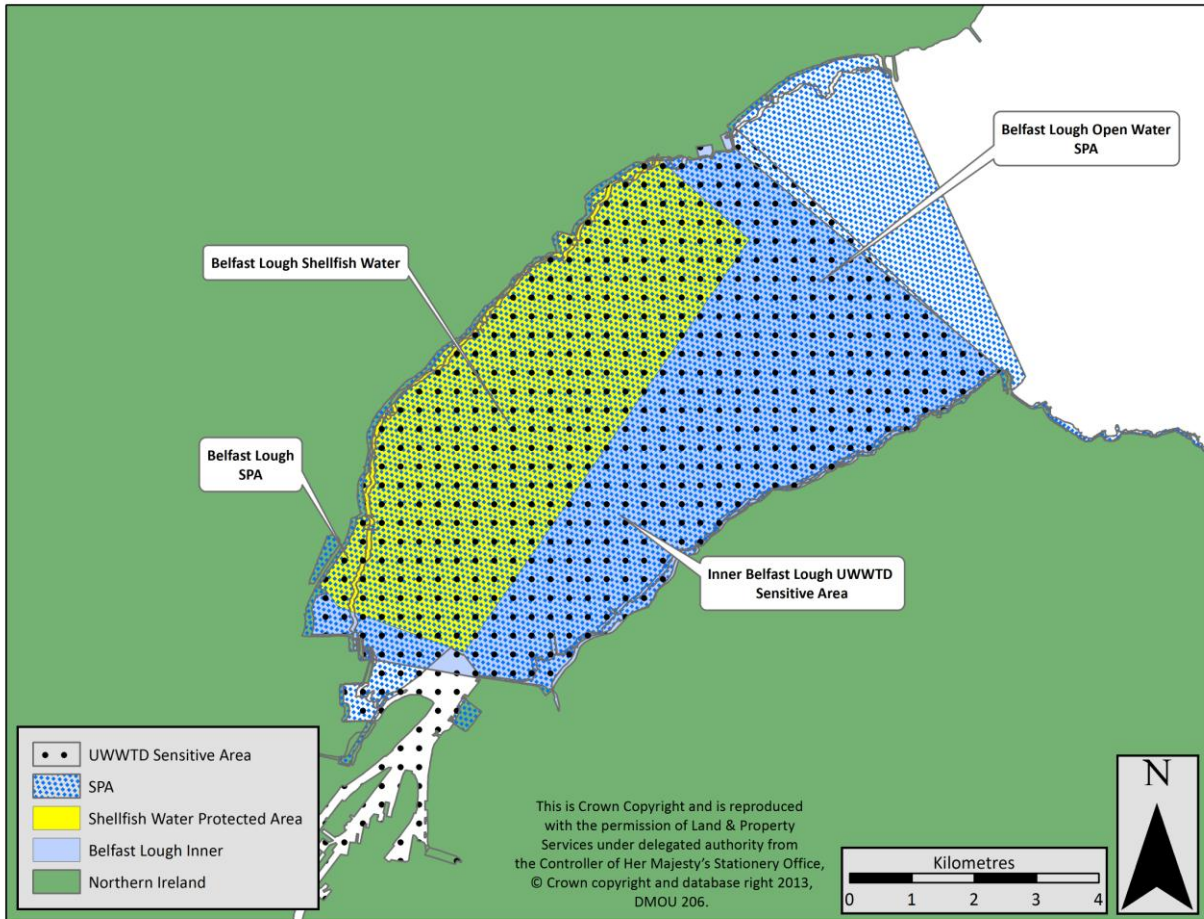
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Belfast Lough Inner

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ANNEX F: Protected Areas



Protected areas within Belfast Lough Inner (Coastal Water).

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The following Protected Areas are situated either wholly or partly within the Belfast Lough Inner water body:

Natura 2000 sites (Habitats Directive and Birds Directive):

Site Name	2014 Condition Status	Designated Water Dependant habitat/species	Feature(s) not meeting objective	Reason for not meeting objective
Belfast Lough SPA	Unfavourable	Redshank	Redshank	Non marine water quality related
Belfast Lough Open Water SPA	Favourable	Great Crested Grebe	None	n/a

Shellfish Water Protected Areas:

Shellfish Water Protected Area	Met Guideline Microbiological Standard* in 2014
Belfast Lough	No (n=101)

*75% of samples contain ≤ 230 *E. coli* /100ml of shellfish flesh and intervalvular liquid

Nitrates Directive/ Urban Waste Water Treatment Directive Sensitive Areas:

- Inner Belfast Lough UWWTD Sensitive Area

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ANNEX G: High Impact Invasive Species

High Impact Invasive Species check	GOOD
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Ecoregion 17 Marine High Impact Invasive Species List

Phylum	Species	P	E	I	Record
Chordata	<i>Didemnum</i> spp.				
Chordata	<i>Styela clava</i>				
Crustacea	<i>Eriocheir sinensis</i>				
Mollusca	<i>Crassostrea gigas</i>				
Mollusca	<i>Crepidula fornicata</i>		Y		W
Phaeophyceae	<i>Sargassum muticum</i>		Y		W
Angiosperms	<i>Spartina anglica</i>				

P= Present; E= Established; I= Impacting

NB Established populations of high impact species automatically downgrade overall surface water classification from 'high' to 'good'.

Record should be inputted as follows. PO= personal observation outside of surveys; W= WFD survey; M= museum / institute records.

RIVER BASIN MANAGEMENT PLAN

 <p>Department of the Environment www.doeni.gov.uk Marine Environment Division</p>	WFD COASTAL WATER BODY CLASSIFICATION Belfast Lough Inner	
	Version Date:	31/05/2015
MONITORING & ASSESSMENT TEAM		

GLOSSARY

AFBI	Agri-Food and Biosciences Institute (under contract to NIEA)
AMBI	AZTI Marine Biotic Index
Annex X	Annex 10 Priority Hazardous Substances
Annex VIII	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 status
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
WWTW	Waste water treatment works