

RIVER BASIN MONITORING PLAN

# WATER FRAMEWORK DIRECTIVE 1<sup>ST</sup> CYCLE CLASSIFICATION SUMMARY

2009-2015

## Coastal Water Body - Larne Lough South

31/05/2015




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



**INVESTORS  
IN PEOPLE**



Northern Ireland  
**Environment**  
Agency  
[www.doeni.gov.uk/niea](http://www.doeni.gov.uk/niea)

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

### LARNE LOUGH SOUTH

#### Water body Information

- River Basin District: North Eastern
- Water Body: UKGBNI6NE070
- Water body type: CW8
- Water body characteristics: Euhaline, mesotidal, sheltered
- Water body area: 4.1 km<sup>2</sup>
- Heavily Modified Water Body: No
- 2015 Classification Objective: Good

<b>FINAL CLASSIFICATION</b>	<b>GOOD</b>	<b>PASS/FAIL 2015 OBJECTIVE</b>	<b>PASS</b>
-----------------------------	-------------	---------------------------------	-------------

#### **Notes on 2015 end of 1<sup>st</sup> cycle classification**

##### **Benthic IQI**

**Note:** Although the samples collected from this site in Larne Lough South is recorded as **Poor** there is sufficient concern that the site characteristics at the site shown in Figure 1 are artificially influencing the outcome. Given that there is only 1 year's data available within the rolling 6 year cycle it has been decided that the result from the adjoining water body of Larne Lough-Mid would be used instead which is seen as a much more reliable indicator of the invertebrate community of the lower Lough.

During the second cycle (2015-21) a review of this site will be developed and a new location chosen within the waterbody or a decision taken to continue use the existing site within Larne Lough Mid.

##### **Annex VIII**

Assessment of the data for the specific pollutant Cypermethrin, a non-systematic pyrethroid insecticide with a wide range of agricultural applications reveals that the annual average concentration exceeded the current EQS of 0.1ng l<sup>-1</sup>. The approach taken by NIEA and Marine Environment Division is that whilst this is a technical failure there is insufficient weight of evidence to draw down the overall classification of this waterbody from Good to Moderate. Further work will be conducted during the 2015-21 period to assess the spatial extent of cypermethrin within the NI sea loughs and transitional waters.

RIVER BASIN MANAGEMENT PLAN		
 <p>Department of the <b>Environment</b> <a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a> <b>Marine Environment Division</b></p>	<b>WFD COASTAL WATER BODY CLASSIFICATION Larne Lough South</b>	
	<table border="1"> <tr> <td>Version Date:</td> <td>31/05/2015</td> </tr> </table>	Version Date:
Version Date:	31/05/2015	
<b>MONITORING &amp; ASSESSMENT TEAM</b>		

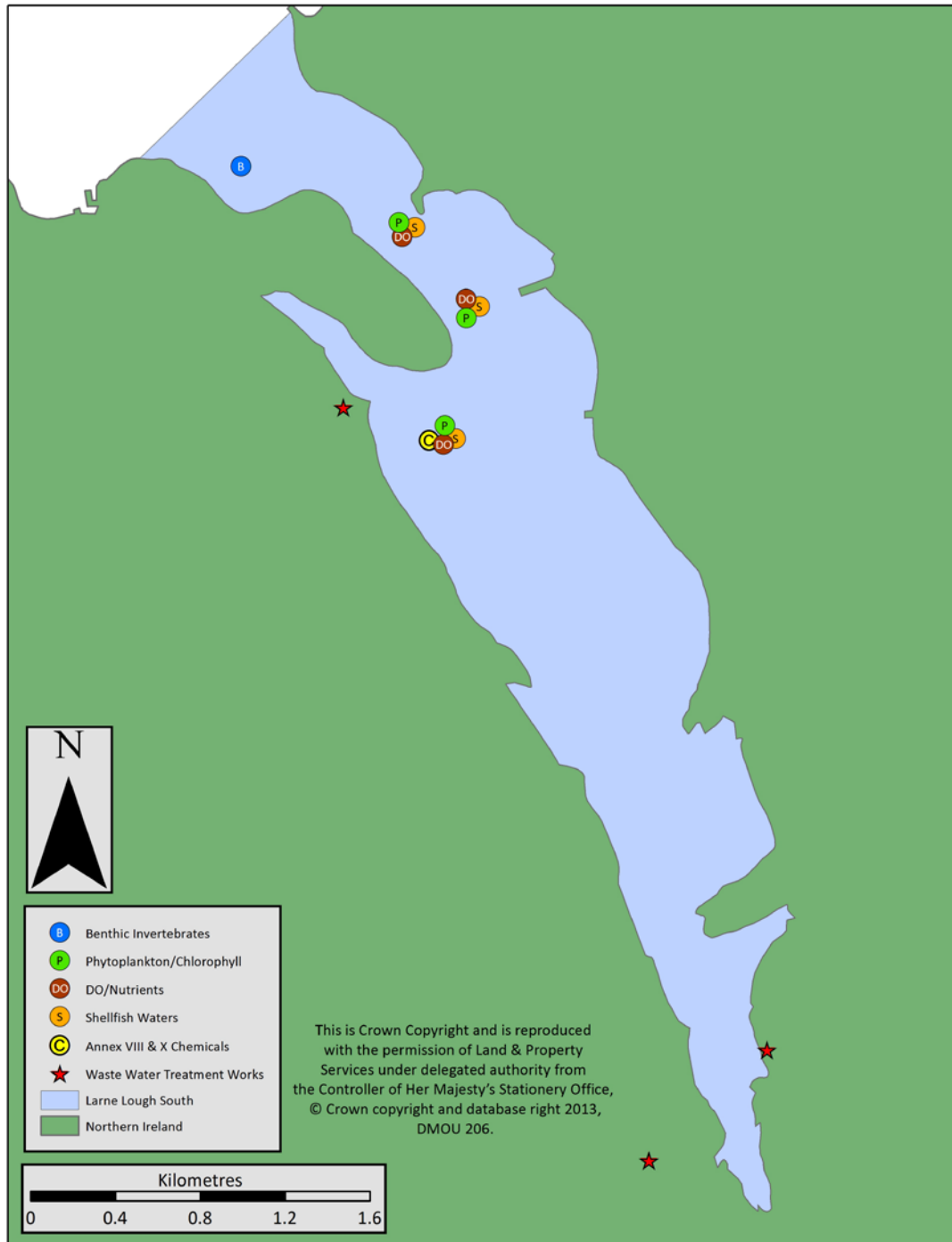


Figure 1: Waste water treatment pressures and monitoring points within Larne Lough South (Coastal Water).


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

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>
<b>Phytoplankton</b>	Biomass	✓	
	Elevated Taxa Count Index	✓	
<b>Macroalgae (Seaweed)</b>	Opportunistic Macroalgae	✓	
	Reduced Species List	☒	Tool not applicable
<b>Angiosperms</b>	Seagrass	☒	No data available
	Saltmarsh	☒	
<b>Benthic Invertebrates</b>	Infaunal Quality Index	✓	
	Imposex	☒	Tool Not Applicable
<b>Physico-chemical</b>	-Dissolved Oxygen	✓	
	-Nutrients	✓	
	Specific Pollutants ( Annex VIII substances)	✓	
<b>Hydromorphological Quality Elements</b>	SEPA Rapid Designation	✓	
	TraC MIMAS	✓	
Chemical Status			
<b>Priority Hazardous Substances</b>	Annex X substances	✓	


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

Table 2: Sampling frequency for each quality element

*Monitoring level: Surveillance*

Quality Elements		Data years contributing to classification	No. of sites/samples
<b>Biological</b>			
Phytoplankton	Chlorophyll Biomass Index	2009-2014	5 sites 53 samples
	Elevated Taxa Count Index	2009-2014	5 sites 54 samples
Macroalgae (Seaweed)	MBT	2009, 2014	n/a
Benthic Invertebrates	Infaunal Quality Index	2012	1 site 3 samples
<b>Physico-chemical</b>			
Nutrients		2010-2015	55 samples 8 sites
Dissolved Oxygen (DO)		2010-2015	97 daily averages
Other polluting substances (Annex VIII)		2010-2014	
<b>Hydromorphology</b>		2007	
<b>Water chemistry</b>			
(Annex X)		2010-2014	

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

Biological Quality Elements											
Flora					Fauna						
Phytoplankton	H				Benthos	G			Biological Quality	G	
Macroalgae	H				Fish						
Angiosperms											

Physico-chemical Elements							
General conditions							
Oxygen (DO)	H			Status	H		
Nutrients (DIN)	H						
Specific pollutants (Annex VIII)					Status	H	
						G	

Hydromorphological Quality Elements	
Status	
	G

Chemical Status	
Priority hazardous substances (Annex X)	
Good	P
Fail	

High Impact Invasive Species	
None recorded	
Established	G
Impacting	


  

Ecological Status	
	High
G	Good
	Moderate
	Poor
	Bad

Surface Water Status	
	High
G	Good
	Moderate
	Poor
	Bad

Figure 2: Overall classification of Larne Lough South (Coastal Water). Note1 Benthic IQI result based on Larne Lough Mid result. See Benthic IQI sheet for explanation. Note 2 There is a technical failure of Cypermethrin an Annexe VIII chemical which in the absence of supporting biological evidence is not sufficient to draw down overall status from Good to Moderate.

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

## ANNEX A: Classification of Biological Quality Elements

### QE: Phytoplankton

QE Phytoplankton assessment (+ data confidence):	<b>HIGH (99.8%)</b>	
--	---------------------	--

#### Classification metrics:

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\LARNE SOUTH 2015.XLS>  
<M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\Coastal data\Larne 90th Percentile.xls>

**Data Availability (spot & continuous samples):** spot (2009-2014) AFBINI & NIEA/MD

#### • 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	EQR	Data Years	No. of Sites	No. of Samples	Data Confidence
4.97	<b>HIGH</b>	0.80	2009-2014	5	53	62.2%

Data confidence: 62.2%

Data analysed using <M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\2015CW Phytoplankton CoC tool v107 UKTAG.xls>

RIVER BASIN MANAGEMENT PLAN	
 <p>Department of the <b>Environment</b> www.doeni.gov.uk Marine Environment Division</p>	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Larne Lough South
	Version Date: 31/05/2015  <b>MONITORING &amp; ASSESSMENT 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) (%)	500,000 (cells l <sup>-1</sup> )	
I <sub>2</sub> - Total Taxa Count (%)	10' (cells l <sup>-1</sup> )	
I <sub>3</sub> - Elevated Biomass Count (%)	>10 (µg l <sup>-1</sup> )	>5 (µg l <sup>-1</sup> )

#### 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 <sub>1</sub>	I <sub>2</sub>	I <sub>3</sub>	Elevated Count EQR	Status	Data Years	No. of phytoplankton samples	Data confidence
1.89%	0	0%	0.988	<b>HIGH</b>	2009-2014	54	95.5%

Data confidence: 95.5%


.Data analysed using [M:\Projects 14\Phycology 2014\MM14-14 Phytoplankton and Chlorophyll\classification 15\2015CW Phytoplankton CoC tool v107 UKTAG.xls](#)

Presence of alien/ nuisance species: *none*

#### Overall Waterbody Status

**HIGH (99.8%)**



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

**QE: Macroalgae Larne Lough south**

<b>QE macroalgal assessment (+ data confidence):</b>	<b>HIGH (L)</b>	
--	-----------------	--

**Classification tools:**

1. Reduced species list (RSL) Not applicable.
2. Macroalgal Blooming Tool (MBT).

**2. MBT assessment:**

- WFD surveillance monitoring: 2009, 2014
- Data Availability (classification): 2009, 2014.
- Data Store: [..\..\..\Algae\algae images\Macrophytes\Survey Site Images\OGA site photos\Larne South: ..\..\MM14-15 Intertidal Seagrass Assessment\Larne Seagrass Visual Assessment](#)

**Boundaries:**

Parameters	Quality Status	High	Good	Moderate	Poor	Bad
	Sub-metric EQR	$\geq 0.8 - 1.0$	$\geq 0.6 - 0.8$	$\geq 0.4 - 0.6$	$\geq 0.2 - 0.4$	$0.0 - 0.2$
Available Intertidal Habitat (AIH) %		0 – 5	5 – 15	15 – 25	25 – 75	75 – 100
Affected Area (ha)		0 – 10	10 – 50	50 – 100	100 – 1000	1000 – 2000
Biomass of AIH (g m <sup>2</sup> )		0 – 100	100 – 500	500 – 1000	1000 – 3000	3000 - 6000
Biomass of affected area (g m <sup>2</sup> )		0 – 100	100 – 500	500 – 1000	1000 – 3000	3000 - 6000
Presence of entrained algae (% of quadrats)		0 – 1	1 – 5	5 – 20	20 – 50	50 – 100

**Results**

Year	Sub-metric EQR					Mean EQR	Status
	% cover of AIH	Affected Area	Biomass of AIH	Biomass of affected area	Entrained algae		
2009	<5%						
2014	<5%						
						<b>Mean</b>	


**Data Confidence: Medium**

- On classification boundary.
- Visual assessment carried out over intertidal area, if less than 5% cover no further survey required and shore classified as HIGH.
- Intertidal area assessed over two years, 2009 & 2014.
- Satellite imagery or aerial photography may need to be considered to improve data confidence.

**Alien taxa: No data**

RIVER BASIN MANAGEMENT PLAN	
 <p>Department of the <b>Environment</b> <a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a> <b>Marine Environment Division</b></p>	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> <b>Larne Lough South</b>
	<b>Version Date:</b> 31/05/2015
	<b>MONITORING &amp; ASSESSMENT TEAM</b>

**QE: Angiosperms – Larne South - GOOD (ND)**

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

**QE: Benthic Invertebrates SEE NOTE BELOW – STATUS BASED ON IQI RESULT FOR LL MID – RECORDED AS GOOD – SEE FIGURE 2 FOR REPORTED VALUE.**

QE benthic invertebrate assessment (+ Data confidence):	<b>POOR (L)</b>	
---	-----------------	--

Classification tools: 1. Infaunal Quality Index (IQI)  
2. Imposex tool (VDSI) -Tool not applicable

1. IQI (UKTAG v01 20140228)

Water body IQI assessment:

**Poor (Low)**

WFD surveillance monitoring:

- **Data store:** [..\Larne Lough South water body\Larne Lough South Water body 08-13 fauna data 1mm.xlsx](#)
- **Benthic invertebrates** UNICORN (NMMT) Database
- **Supporting Parameters** Water Quality Data Set
- **Digital images** AMAP Project folder
- **Data Availability (classification):** 1 sites, 3 reps, 1 years, Day Grab, 1 mm sieve, n=3.

**Boundaries (Intercalibrated NEAGIG):**

Class	Bad	Poor	Moderate	Good	High
<b>IQI</b>	>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	-	-	-	-	-	-
2011	-	-	-	-	-	-
2012	MM-Benthos	LLS (3)	3	0.43	0.05	Poor
2013	MM-Benthos	LLS (3)	-	-	-	-
2014	MM-Benthos	LLS (3)	-	-	-	-
2015	MM-Benthos	LLS (3)	-	-	-	-
<b>Overall 6 year waterbody means</b>			<b>3</b>	<b>0.43 (*0.38)</b>	<b>0.05</b>	<b>Poor</b>

\* IQI derived from data averaged minus Standard Deviation (see issues with tools paper). This figure is used for classification. **Note:** Although the samples collected from this site in Larne Lough South is recorded as **Poor** there is sufficient concern that the site characteristics at the site shown in Figure 1 are artificially influencing the outcome. Given that there is only 1 years data available within the rolling 6 year cycle it has been decided that the result from Larne Lough Mid would be used which is seen as a much more reliable indicator of the invertebrate community of the lower lough.

**Data confidence:**

**Low**

- Sample analysis QA'd through NMBAQC (Good)
- Database QA'd (Good)
- No specific WFD data (single point with reps)

RIVER BASIN MANAGEMENT PLAN	
 <p>Department of the <b>Environment</b> <a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a> Marine Environment Division</p>	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Larne Lough South
	Version Date: 31/05/2015  <b>MONITORING &amp; ASSESSMENT TEAM</b>

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

### QE: Dissolved Oxygen

<b>Dissolved oxygen (+ data confidence):</b>	<b>HIGH (100%)</b>	
--	--------------------	--

Classification tools: Comparison of 5% ile against reference standards

- Data Availability: 2010-2015
- 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*)
7.81	HIGH	2010-15	**	97	

\* Proportion of possible months for which data are available

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

**QE: Nutrients – N regulation**

<b>QE N regulation assessment (+ Data confidence):</b>	<b>HIGH (88%)</b>	
--	-------------------	--

- **Data store:** [..\Coastal WB inc AFBI 15.xls](#)
- **Data Availability:** 2010-15  
DIN & salinity (Nov to Feb)
- **Data Source (spot & continuous samples):** spot

**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
11.54		55	8	2010- 2015	Database not yet QA'd	HIGH

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

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

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

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

Specific pollutants assessment (+data confidence)	MODERATE	
---	----------	--

NOTE: Assessment of the data for the specific pollutant Cypermethrin, a non-systematic pyrethroid insecticide with a wide range of agricultural applications reveals that the annual average concentration exceeded the current EQS of  $0.1 \text{ ng l}^{-1}$ . The approach taken by NIEA and Marine Environment Division is that whilst this is a technical failure there is insufficient weight of evidence to draw down the overall classification of this waterbody from Good to Moderate.

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

**Data assessed for 2013 Update:**

#### Specific Pollutants

Suite	Parameter	Data Availability
Trace Metals	Chromium	SWMP 2012
Trace Metals	Iron	SWMP 2012
Trace Metals	Copper	SWMP 2012
Trace Metals	Zinc	SWMP 2012
Trace Metals	Arsenic	SWMP 2012
Trace Organics (OPONS)	Dimethoate	NOV10 - MAY11
Trace Organics (OPONS)	Diazinon	NOV10 - MAY11
Trace Organics (OPONS)	Fenitrothion	NOV10 - MAY11
Urea Herbicides	Linuron	OCT 2011 – JUL 2012
Nutrients (Winter Nutrients)	Unionised Ammonia (at pH8)	WIN NUTS 2012-2013
Candidate Specific pollutant	Glyphosate	NOV 2012 – MAR 2013


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

Suite	Parameter	Data Availability
Trace Organics (OPONS)	Mevinphos	NOV10 - MAY11
Trace Organics (OPONS)	Triazaphos*	NOV10 - MAY11
Trace Organics (OPONS)	Dichlorvos	NOV10 - MAY11

Triazaphos\* LOD above the EQS.

**Link to Data, Assessment**

<G:\MARINE\Water Framework Directive\WFD ANNUAL CLASSIFICATION UPDATE 2013\Chemistry>

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

Data assessed for 2014 Update:

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

No EQS failures

**Link to Data, Assessment**

[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	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

EQS failures

Cypermethrin

**Link to Data, Assessment and EQSs**

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

RIVER BASIN MANAGEMENT PLAN	
 <p>Department of the <b>Environment</b> <a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a> <b>Marine Environment Division</b></p>	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> <b>Larne Lough South</b>
	<b>Version Date:</b> 31/05/2015
	<b>MONITORING &amp; ASSESSMENT TEAM</b>


### ANNEX D: Hydromorphological quality elements

Overall hydromorphology assessment	GH	
------------------------------------	----	--

Classification tools:

1. TRaC Hydromorphology metrics
2. MIMAS



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

### ANNEX E: Chemical Status – Annex X Chemicals

Priority hazardous substances (+data confidence)	GOOD	
--	------	---

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

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

#### Data Assessed for 2013 Update:

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

**Link to Data, Assessment and EQSs:**

<G:\MARINE\Water Framework Directive\WFD ANNUAL CLASSIFICATION UPDATE 2013\Chemistry>

RIVER BASIN MANAGEMENT PLAN

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

**Data Assessed for 2014 Update:**

Suite	Parameter	Data Availability
Trace Metals	Nickel	SWMP 2013
Trace Metals	Cadmium	SWMP 2013
Trace Metals	Lead	SWMP 2013
Trace Metals	Mercury	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 Organics	Benzene	Nov 2013 – Sept 2014
Trace Organics	Nonylphenol	April 2014 – Dec 2014
Trace Organics	Octylphenol	April 2014 – Dec 2014

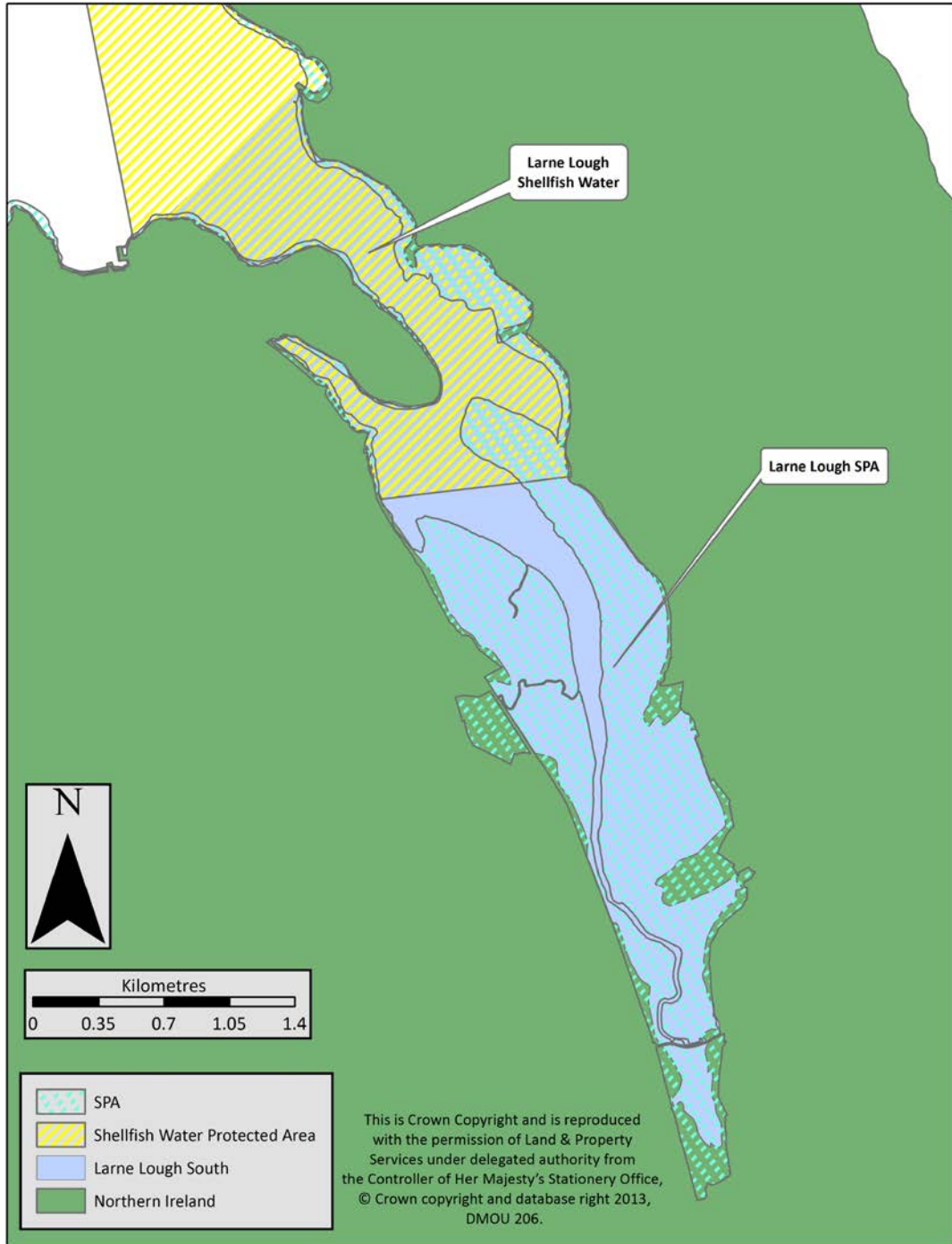
**No EQS failures**

**Link to Data, Assessment and EQSs:**


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

RIVER BASIN MANAGEMENT PLAN				
 <p>Department of the <b>Environment</b> <a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a> <b>Marine Environment Division</b></p>	<b>WFD COASTAL WATER BODY CLASSIFICATION Larne Lough South</b>			
	<table border="1"> <tr> <td>Version Date:</td> <td>31/05/2015</td> </tr> <tr> <td colspan="2" style="text-align: center;"><b>MONITORING &amp; ASSESSMENT TEAM</b></td> </tr> </table>	Version Date:	31/05/2015	<b>MONITORING &amp; ASSESSMENT TEAM</b>
Version Date:	31/05/2015			
<b>MONITORING &amp; ASSESSMENT TEAM</b>				

### ANNEX F: Protected Areas



Protected areas within Larne Lough South (Coastal Water).

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

The following Protected Areas are situated either wholly or partly within the Larne Lough South 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
Larne Lough SPA	Favourable	Common Tern; Roseate Tern; Sandwich Tern; Light Bellied Brent Goose	None	n/a

**Shellfish Water Protected Areas:**

Shellfish Water Protected Area	Met Guideline Microbiological Standard* in 2014
Larne Lough	No (n=34)

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

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

### ANNEX G: High Impact Invasive Species

QE High Impact Invasive Species assessment	<b>GOOD</b>
--	-------------

#### Ecoregion 17 Marine High Impact Invasive Species List


Phylum	Species	P	E	I	Record
<i>Chordata</i>	<i>Didemnum spp.</i>				
<i>Chordata</i>	<i>Styela clava</i>		Y		W
<i>Crustacea</i>	<i>Eriocheir sinensis</i>				
<i>Mollusca</i>	<i>Crassostrea gigas</i>				
<i>Mollusca</i>	<i>Crepidula fornicata</i>				
<i>Phaeophyceae</i>	<i>Sargassum muticum</i>				
<i>Angiosperms</i>	<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 <b>Environment</b> <a href="http://www.doeni.gov.uk">www.doeni.gov.uk</a> <b>Marine Environment Division</b></p>	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Larne Lough South	
	<b>Version Date:</b>	31/05/2015
	<b>MONITORING &amp; ASSESSMENT TEAM</b>	

**GLOSSARY**

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