

North Eastern River Basin Management Plan

# Rathlin Island Classification

December 2009




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

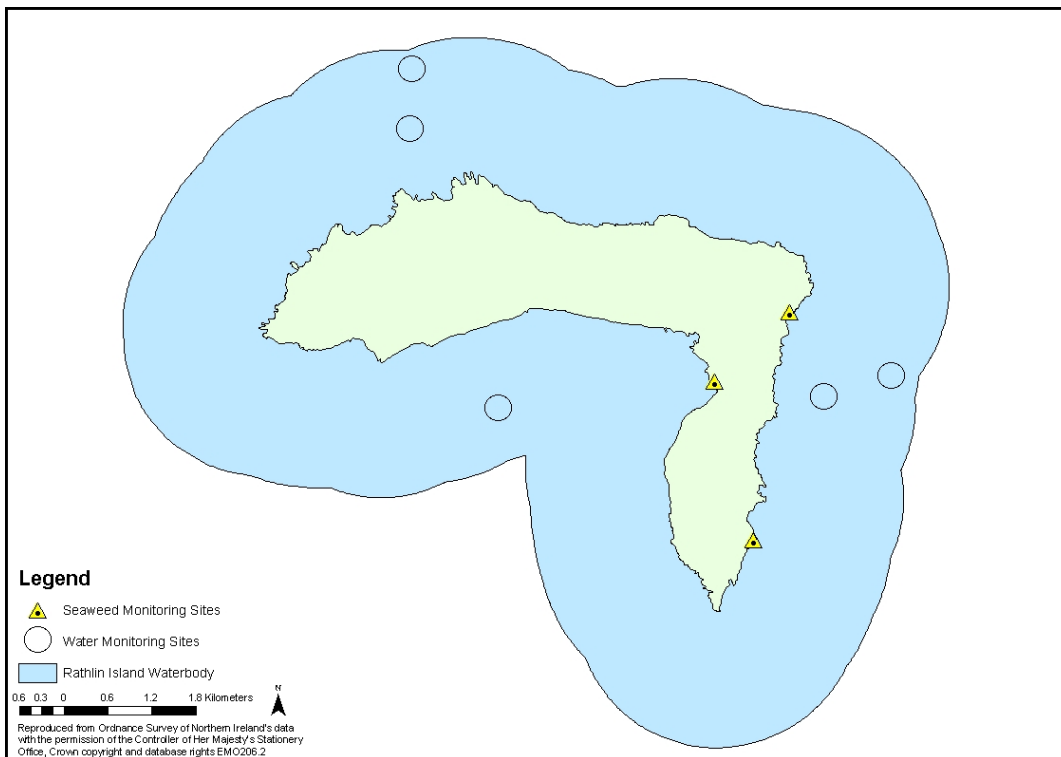
<b>RIVER BASIN MANAGEMENT PLAN</b>	
	<b>WFD COASTAL WATER BODY CLASSIFICATION</b> Rathlin
	Version Date: 22/12/09
	<b>MARINE ASSESSMENT AND LICENSING TEAM</b>

**RATHLIN**


Water body Information

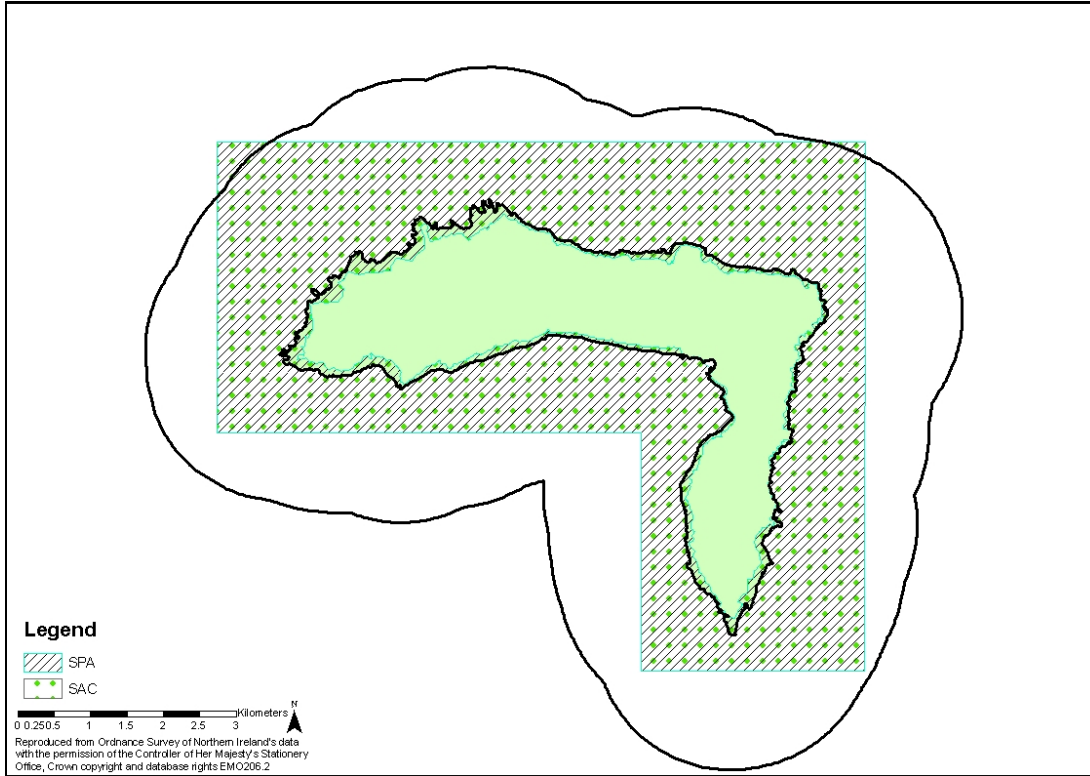
- River Basin District: North Eastern
- Water body type: CW2
- Water body code : UKGBNI6NE020
- Water body characteristics: Euhaline, mesotidal, exposed
- Water body area: 56.16 km<sup>2</sup>
- Heavily Modified Water Body: No

<b>OVERALL WATERBODY CLASSIFICATION</b>	<b>(H/G/M/P/B): (PASS/FAIL):</b>	<b>HIGH PASS</b>	
<p>One plant of the red list alien <i>Sargassum muticum</i> was found intertidally on Rathlin (June 2009). No further plants have been discovered and no population has yet established so the ecological status can remain as HIGH.</p>			




Map showing pressures and monitoring points within Rathlin (Coastal Water).

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Map showing pressures and monitoring points within Rathlin (Coastal Water), 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			
Main Element	Sub-Element	Applied	Comment
<b>Macroalgae (seaweeds)</b>	Opportunistic Macroalgae	<input checked="" type="checkbox"/>	Tool Not Applicable
	Reduced Species List	✓	
<b>Angiosperms</b>	Seagrass	<input checked="" type="checkbox"/>	Tool Not Applicable
	Saltmarsh	<input checked="" type="checkbox"/>	Tool Not Applicable
<b>Phytoplankton</b>	Biomass	<input checked="" type="checkbox"/>	No data available
<b>Benthic Invertebrates</b>	<b>Infaunal Quality Index</b>	<input checked="" type="checkbox"/>	Tool Under Development
	<b>Imposex</b>	<input checked="" type="checkbox"/>	No data available
<b>Physico-Chemical (water)</b>	<b>General Conditions</b>	✓	
	-Dissolved Oxygen	✓	
	-Nutrients	✓	
	<b>Specific Pollutants (Annex VIII subs)</b>	<input checked="" type="checkbox"/>	No data available
<b>Hydromorphological Quality Elements</b>	SEPA Rapid Designation	✓	
	TraC MIMAS	✓	
Chemical Status			
<b>Priority Hazardous Substances (Annex X)</b>	Annex X Substances	<input checked="" type="checkbox"/>	No data available

**Waterbody Classification**

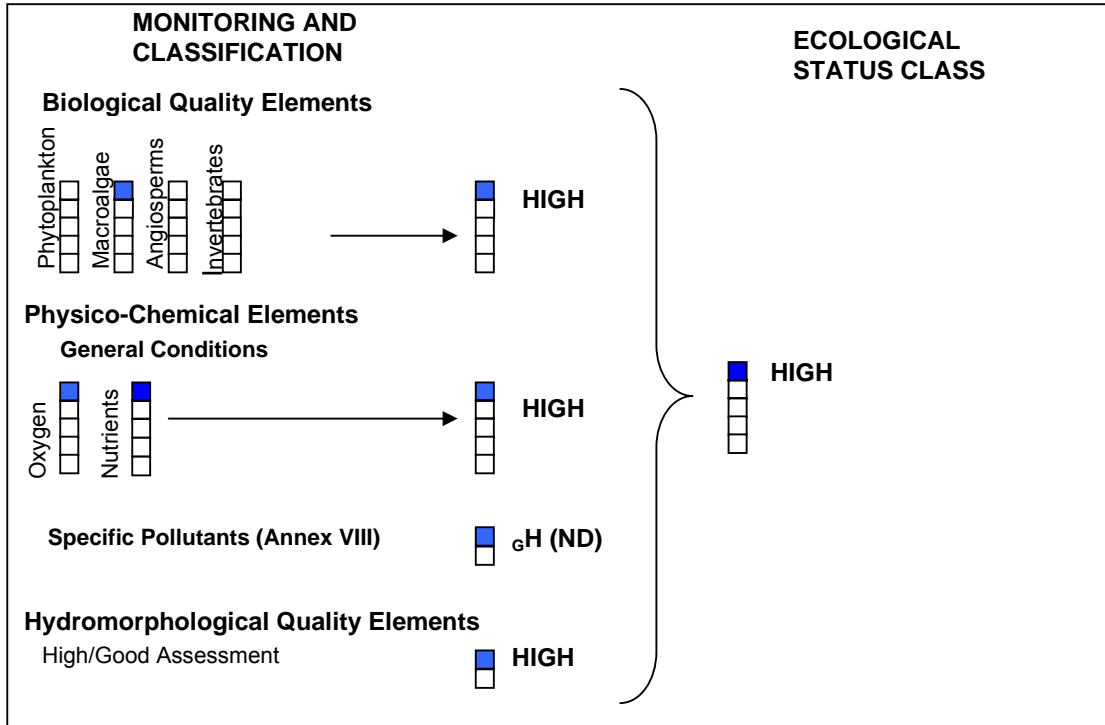


Figure showing ecological classification of Rathlin (Coastal Water)

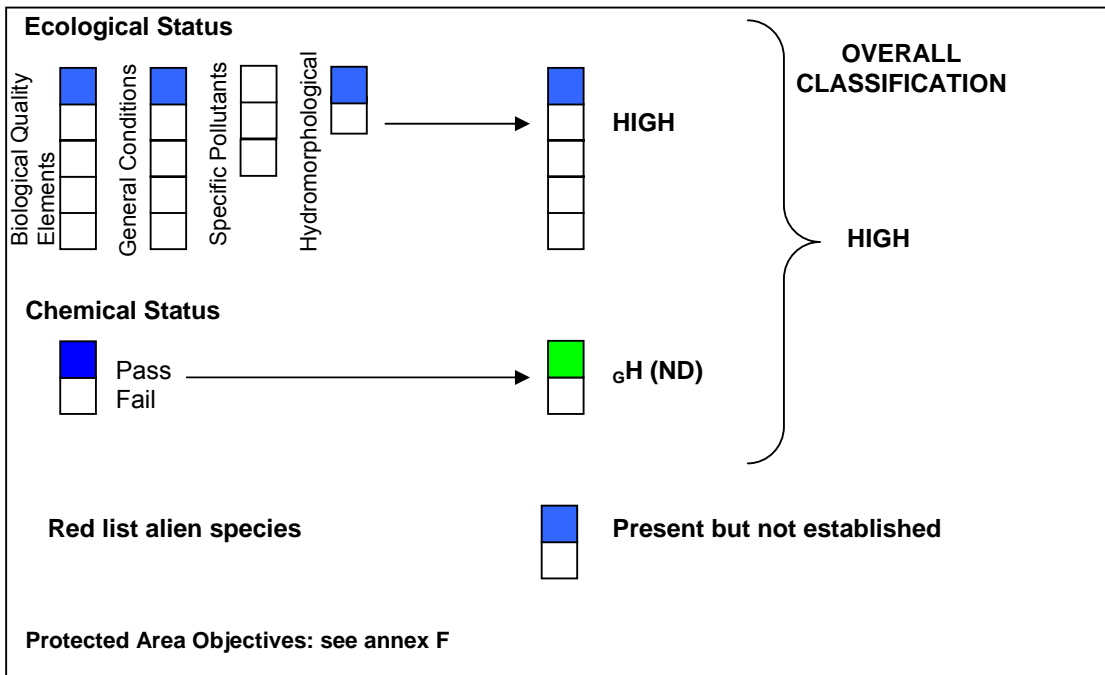



Figure showing overall classification of Rathlin (Coastal Water)


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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
<b>Biological</b>			
Macroalgae	Reduced Species List	2008	3
<b>Physico-chemical</b>			
Nutrients		2008	3
Salinity		2008	3
Temperature		2008	3
Dissolved Oxygen (DO)		2008	3
Other polluting substances (Annex VIII)		ND	
<b>Hydromorphology</b>		2007	
<b>Water chemistry</b>			
(Annex X)		ND	


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	<table border="1"> <tr> <td><b>Version Date:</b></td> <td>22/12/09</td> </tr> </table>	<b>Version Date:</b>	22/12/09
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## RATHLIN

### ANNEX A: Classification of Biological Quality Elements

#### QE: Phytoplankton

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

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**QE: Macroalgae Rathlin Island**

QE macroalgal assessment (+ data confidence):	<b>HIGH (M)</b>	—
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Classification tools: Reduced species list (RSL), MBT – not applicable

*Reduced Species List (RSL)*

- WFD surveillance monitoring: 2008
- Data Availability (classification): 2008, 3 sites

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							RSLEQR	Status
	Shore desc.	Sp. richness	Adj. Sp. Richness	% G	% R	ESG	% Opp		
Bedagg 2008	14	34	36.4	17.65	41.18	1.43	14.71	0.795	GOOD
Doon Bay 2008	17	43	37.4	13.95	48.84	0.95	9.30	0.837	HIGH
Portawillin 2008	16	38	35.3	13.16	55.26	1.24	7.89	0.871	HIGH
<b>Mean</b>								<b>0.83 ±0.04</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 carried out on all shores.

Alien taxa present (*Sargassum muticum*): One plant of the red list alien *Sargassum muticum* was found intertidally on Rathlin (June 2009). No further plants have been discovered and no population has yet established so the ecological status can remain as HIGH.

**QE: Angiosperms – tool not applicable**

**QE: Benthic Invertebrates – GOOD (N/D)**

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

### Dissolved Oxygen

Dissolved oxygen (+ data confidence):	<b>HIGH (M)</b>	
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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:** 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*)
7.84	<b>HIGH</b>	2008	**	1	11.1%

\* 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**

<b>Winter DIN - (+ Data confidence):</b>	<b>HIGH (L)</b>	
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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


**Winter DIN thresholds:**

Area	Salinity range	DIN (uM)		
		HIGH	GOOD	MODERATE
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
8.65	3	3	3	2008	Database not yet QA'd	High

Data confidence: more data required.


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

Specific pollutants assessment (+data confidence)	$\text{eH}$ (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	High	
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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
Rathlin	Rathlin	SPA	Unfavourable	Bird numbers
Rathlin	Rathlin	SAC	Favourable	

#### **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**

One plant of the red list alien *Sargassum muticum* was found intertidally on Rathlin (June 2009). No further plants have been discovered and no population has yet established so the ecological status can remain as HIGH.

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**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>GH</b>	Good/High
<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

Northern Ireland Environment Agency  
17 Antrim Road  
Lisburn  
BT28 3AL

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