

Neagh Bann River Basin Management Plan

Mourne Coast Classification

December 2009



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Northern Ireland
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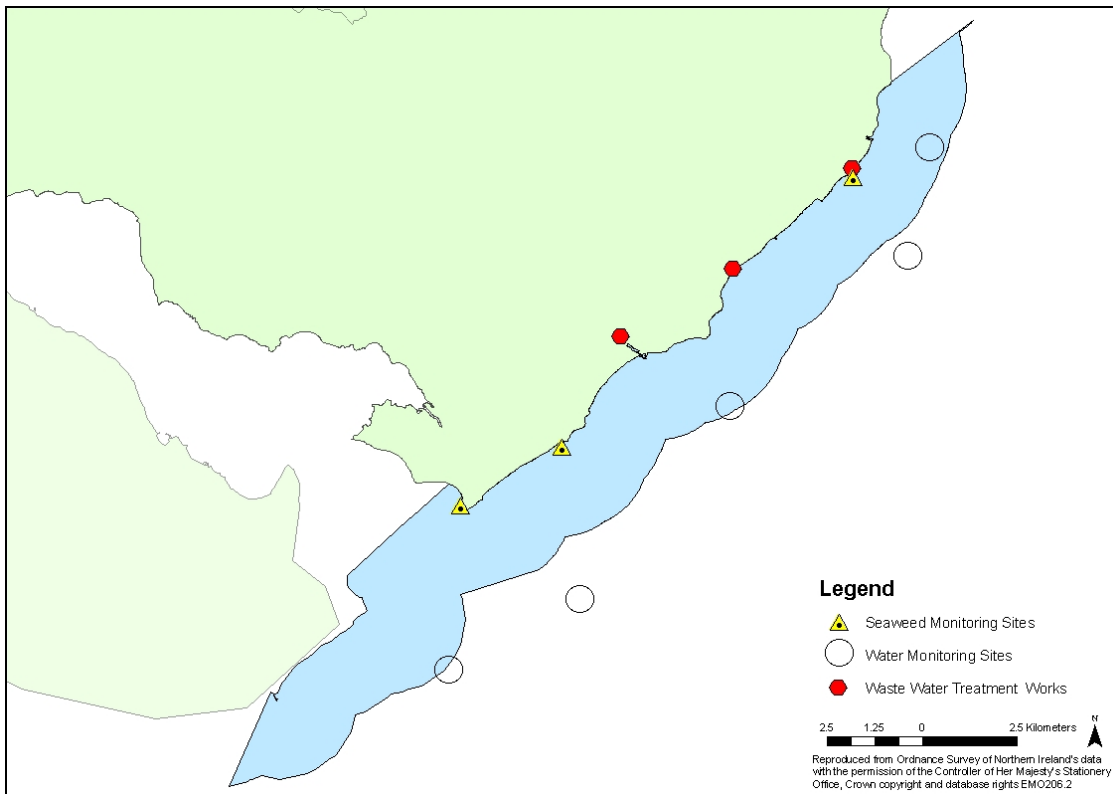
RIVER BASIN MANAGEMENT PLAN	
	WFD COASTAL WATER BODY CLASSIFICATION Mourne Coast
	Version Date: 22/12/09
	MARINE ASSESSMENT AND LICENSING TEAM

MOURNE COAST


Water body Information

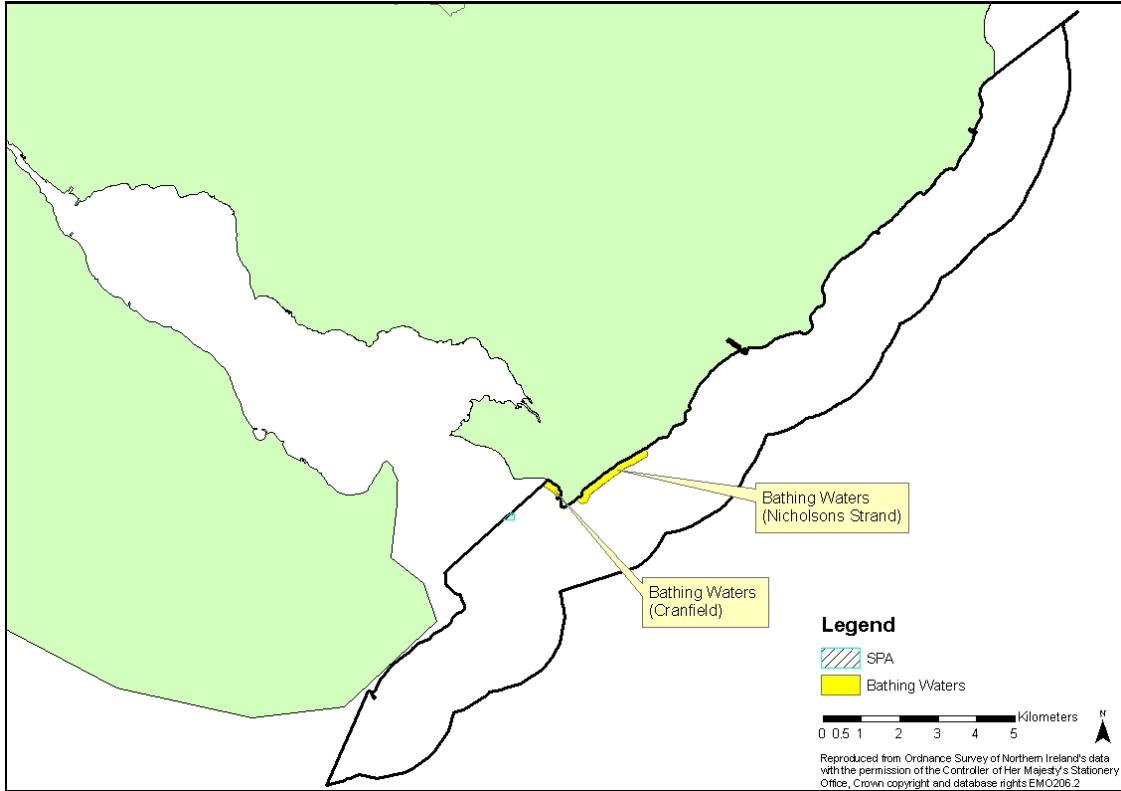
- River Basin District: NE, NBIRBD
- Water body type: CW5
- Water Body Code UKGBNIIIE6NB020
- Water body characteristics: Euhaline, mesotidal, moderately exposed
- Water body area: 47.38 km²
- Heavily Modified Water Body: No

OVERALL WATERBODY CLASSIFICATION	(H/G/M/P/B): (PASS/FAIL):	Moderate Fail	
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Map showing pressures and monitoring points within Mourne Coast (Coastal Water).

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Map showing protected areas within Mourne Coast (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
Phytoplankton	Biomass	✓	
Macroalgae (Seaweeds)	Opportunistic Macroalgae	<input checked="" type="checkbox"/>	Tool not suitable.
	Reduced Species List	✓	
Angiosperms	Seagrass	<input checked="" type="checkbox"/>	Tool not suitable.
	Saltmarsh	Assessed under protected areas.	See Annex F
Benthic Invertebrates	Infaunal Quality Index	<input checked="" type="checkbox"/>	
	Imposex	<input checked="" type="checkbox"/>	
Physico-chemical (Water)	-Dissolved Oxygen	✓	
	-Nutrients	✓	
	Specific Pollutants (Annex VIII substances)	<input checked="" type="checkbox"/>	
Hydromorphological Quality Elements	SEPA Rapid Designation	✓	
	TraC MIMAS	✓	
Chemical Status			
Priority Hazardous Substances	Annex X substances	<input checked="" type="checkbox"/>	

Waterbody Classification

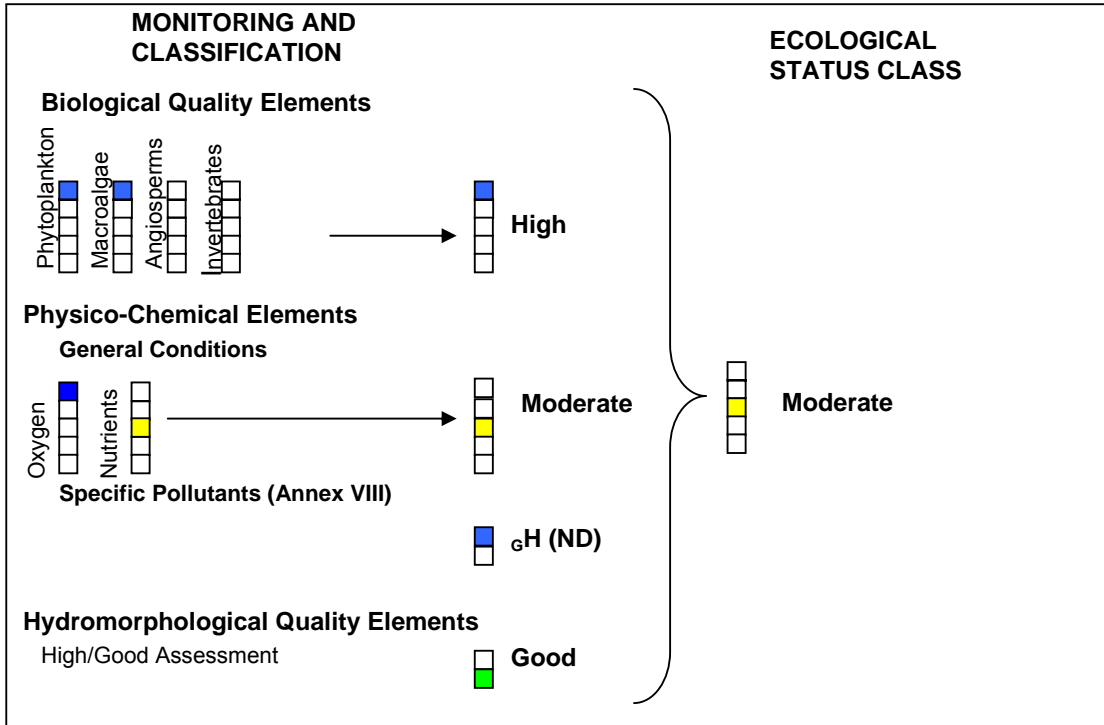


Figure showing ecological classification of Mourne Coast (Coastal Water)

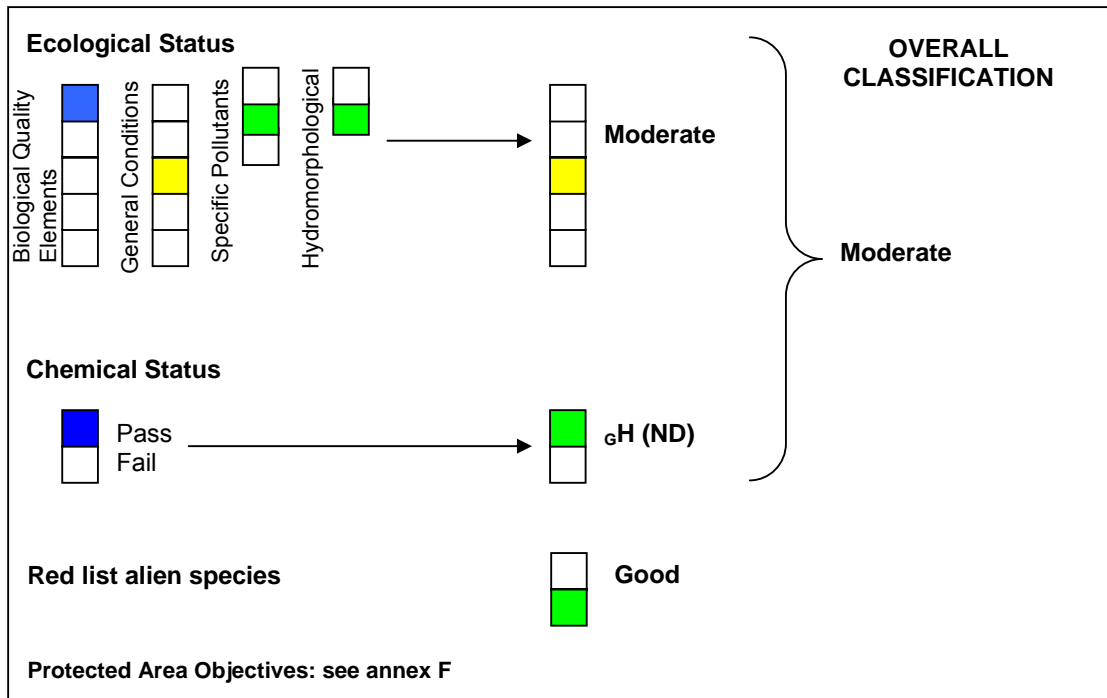



Figure showing overall classification of Mourne Coast (Coastal Water)


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First River Basin Cycle (2004 – 2008)

Monitoring Level: Surveillance

Sampling frequency for each quality element

QUALITY ELEMENT	Year (if 1 in 3 yrs)	No. of sites
Biological		
Phytoplankton	2004-7	9 samples 1 sites
Macroalgae	Reduced Species List	3
	MBT	n/a
Angiosperms	Seagrass	n/a
Benthic Invertebrates	Infaunal Quality Index	n/a
	Imposex	n/a
Physico-chemical		
Nutrients	2008	5 sites, 33 samples plus transect data
Dissolved Oxygen	2008	2
Specific 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):	HIGH (L)	
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Classification tools:

1. Chlorophyll biomass index (90%ile).
2. Species composition, abundance and bloom frequency will be reported in the next classification round.

- **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):**

Chl = spot (2004-2007) AFBINI

1. Chlorophyll Biomass Index - 90%ile (Chl $\mu\text{g l}^{-1}$) growing season 1st Mar – 30th 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	HIGH	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.

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QE: Macroalgae Mourne Coast

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

Reduced Species List (RSL)

- **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	Shore desc.	Sub-Metric EQR						RSLEQ R	Status
		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
Mean								0.865 ±0.014	HIGH


Data Confidence: Medium

- Standard deviations (\pm) 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*

QE: Angiosperms – Mourne, tool not applicable

QE: Benthic Invertebrates - GOOD (ND)

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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:** 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*)
6.74	HIGH	2008	**	2	16.6%

* 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

Winter DIN (+ Data confidence):	Moderate (L)	
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- **Data store:**
\\marine.on.ehslis2k\Water Framework Directive\Nuala-Lesley Nutrients\DIN for Classification\Coastal Water
- **Data Availability:** 2005 to 2008, DIN & salinity (November to February)
- **Data Availability (spot & continuous samples):** spot and transect


Winter DIN thresholds:

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

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
22.13	5	33	5 (plus transect)	2005 - 2008	Database not yet QA'd	Moderate

Data confidence: Low
Limited transect monitoring.


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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)	σ H (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

Bathing Water Directive

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

- 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: Red List Alien Species

Sargassum muticum is present 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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