

APPENDIX IV

Assessment of Trophic Status of Irish Estuaries, Bays and Marine Waters 1999 - 2003: Details of the outcome of the analysis A: ATSEBI Outcome U: Unpolluted I: Intermediate Status P-E Potentially Eutrophic E: Eutrophic W: Winter S: Summer B: Breach C: Compliance M: Marginal

Lee River and tributaries	0.1	11	0.1	26	2.0	C	1.3	C	60	M	67	B	4.4	C	25.8	M	91	C	140	B	P-E
Upper Lee (Tralee) Estuary	0.1	4	1.9	74	2.6	C	1.6	C	42	C	124	B	15.5	B	46.2	B	45	B	134	B	E
Lower Lee (Tralee) Estuary		0	31.4	19			0.0	C			24	C	8.5	C	18.1	C	92	C	116	C	U
Tralee Bay	30.6	2	33.8	84	0.4	C	0.0	C	10	C	10	C	2.1	C	4.7	C	94	C	105	C	U
Feale River	0.0	41	0.0	44	1.1	C	0.7	C	37	C	29	C	3.1	C	3.2	C	86	C	126	C	U
Upper Feale Estuary	0.0	12	0.0	12	1.1	C	1.0	C	37	C	63	B	3.6	C	3.6	C	89	C	110	C	I
Cashen Feale Estuary	0.5	56	7.9	88	1.3	C	0.7	C	36	C	44	C	17.1	B	52.8	B	74	C	109	C	I
Shannon River	0.1	165	0.2	60	1.2	C	0.9	C	27	C	32	C	3.4	C	4.5	C	91	C	100	C	U
Tidal Shannon River		0	0.2	52			1.0	C			82	B	9.1	C	17.7	C	70	C	101	C	I
Maigue River	0.3	73	0.3	40	2.2	C	1.5	C	107	B	76	B	3.8	C	8.4	C	95	C	145	B	I
Maigue Estuary	0.4	6	0.4	62	3.2	B	1.2	C	47	C	112	B	5.6	C	12.1	C	75	C	127	C	I
Upper Shannon Estuary	4.6	2	16.7	106	1.5	C	0.6	C	25	C	43	C	7.3	C	13.6	C	80	C	104	C	U
Deel River	0.2	80	0.3	43	2.4	C	1.8	C	126	B	169	B	6.4	C	63.2	B	88	C	179	B	E
Deel Estuary	0.0	5	7.6	92	3.3	B	1.0	C	67	B	154	B	8.5	C	19.1	C	82	C	153	B	I
Fergus River	0.2	87	0.2	62	0.7	C	0.5	C	30	C	20	C	3.2	C	15.8	C	73	C	118	C	U
Fergus Estuary	0.3	5	2.0	35	0.7	C	0.5	C	10	C	64	B	5.7	C	14.0	C	72	C	101	C	I
Shannon Estuary Lower	22.3	7	29.2	97	1.0	C	0.2	C	27	C	13	C	3.6	C	6.0	C	87	C	106	C	U
Corrib River	0.1	97	0.0	47	0.7	C	0.1	C	9	C	7	C	3.5	C	4.9	C	96	C	116	C	U
Corrib Estuary		0	29.0	83			0.1	C			8	C	3.6	C	7.8	C	91	C	117	C	U
Inner Galway Bay North		0	31.4	153			0.0	C			5	C	3.3	C	9.5	C	89	C	117	C	U

Extracts from EPA publication

Water Quality in Ireland

2001-2003

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Aherlow, Argideen, Munster Blackwater, Boyne, Bride (Waterford), Brown Flesk, Castlebar, Corrib (including Lough Corrib), Corroy, Dargle, Deel (Crossmolina), Feale, Fergus, Finn (Donegal), Glashagh (Lower), Glashagh (Upper), Glore (Mayo), Gweestion, Leannan, Lee (Cork), Lurgy, Maggy's Burn, Maine, Manulla, Moy, Mullaghanoe, Nore, Owengarve (Sligo), , Slaney, Spaddagh, Swilly, Trimoge, Vartry and Yellow (Foxford).

The parameter list covered by the Salmonid Regulation is shown in the Box below. A fuller discussion of the Freshwater Fish directive is given in Clabby *et al.*, (1992.)

Parameters required to be measured under the Salmonid Waters Regulations	
Temperature	Dissolved Oxygen
pH	Suspended Solids
BOD ₅	Nitrites
Phenolic Compounds	Petroleum Hydrocarbons
Non-ionised Ammonia	Total Ammonium
Tot. Res. Chlorine	Total Zinc
Dissolved Copper	

Information pertaining to the 2001-2003 period is available for the for most of the specified parameters with the exceptions of phenols, petroleum hydrocarbons and residual chlorine. These parameters would normally be associated with discrete pollution events, which would be recorded separately and, generally speaking, it is unlikely that the designated waters would suffer from these pollutants. Data for suspended solids were generally not available and consequently this parameter is not dealt with here. ***The information below should not be taken, however, as indicating a definite compliance or non-compliance under the Regulations as it is based on a composite 3-year data set rather than on an annual set as would be provided by local authorities when making their official returns under the Freshwater Fish Directive.*** It is, rather, an indication of waters that are most likely to have breached the Regulations on the basis of the data supplied for the three-year period.

Table 2.6 summarises the overall situation in 2001-2003 showing those rivers which were or were not compliant for the parameters shown. Details as to the specific river locations where standard limits were exceeded are given in Appendix II. As indicated in the Table, 12 of the designated rivers (ten of which are in County Mayo) were likely to have been in compliance with all of the parameters for which sufficient data are available; these rivers are the Corrib, Corroy, Deel (Crossmolina), Glore (Mayo), Gweestion, Leannan, Manulla, Moy, Mullaghanoe, Spaddagh, Trimoge and Yellow (Foxford).

Exceedances of the prescribed limits were recorded for pH in just one river, DO in four, BOD in nine, Total Ammonium in three, Un-ionised Ammonia in one, Nitrite in 19 and Dissolved Copper in four

TABLE 2.6

Summary of numbers of recorded parameter exceedances in the 34 designated salmonid rivers in the period 2001-2003. Exceedances were not recorded in those rivers shown in bold typeface. Further details in text.

River	pH	DO	BOD	Total Ammonium	Un-ionised Ammonia	Nitrites	Dissolved Copper
Aherlow			4			9	
Argideen						5	
Blackwater (Munster)						17	
Boyne		2		1	1	12	
Bride (Blackwater)						6	
Brown Flesk							4
Castlebar			1				
Corrib							
Corroy							
Dargle						1	
Deel (Crossmolina)							
Feale			2			3	1
Fergus						2	
Finn (Donegal)			1			8	3
Glashagh (Lower)						1	
Glashagh (Upper)						1	
Glore (Mayo)							
Gweestion							
Leannan							
Lee (Cork)						6	
Lurg				1		2	
Maggy's Burn			1	1		2	
Maine		1				7	
Manulla							
Moy							
Mullaghanoë							
Nore		2	2			27	
Owengarve (Sligo)			1				
Slaney	2	1				15	
Spaddagh							
Swilly			3			58	1
Trimoge							
Vartry						1	
Yellow (Foxford)							
No. of exceedances. (Total 220)	2	6	16	3	1	183	9
<i>% of exceedances</i>	<i>1</i>	<i>3</i>	<i>7</i>	<i>1</i>	<i>0.5</i>	<i>83</i>	<i>4</i>
No. of rivers breaching parameter	1	4	9	3	1	19	4

increasing global evidence that nutrient inputs are causing similar problems in estuarine and marine waters, resulting in significant changes in plant and animal communities. The deleterious effects of excessive nutrient enrichment include increases in the frequency and duration of blooms of algae, among them nuisance and toxic species, dissolved oxygen depletion with the potential to cause mortalities of fish and other biota, and alteration of the natural faunal and floral communities both in the water column and on the seabed. In addition, eutrophied waters may experience mass growth and strandings of algal material which typically produces very strong odours and visual impact as it degrades on beaches and shorelines.

The EU Directives on urban waste water treatment (CEC, 1991a) and nitrates from agricultural sources (CEC, 1991b) are among the most important measures in place to combat eutrophication of waters. In response to the former, considerable investment is currently being made in Ireland to provide new waste water treatment plants and to upgrade existing facilities in both inland and coastal areas and many estuaries no longer receive discharges of untreated sewage. Similarly, the risk of nutrient loss associated with agricultural activities is receiving considerable attention at present; Ireland is currently finalising its Nitrates Action Plan in line with the requirement of the Nitrates directive, which will hopefully redress situations where excessive and unsustainable losses of nitrogen and phosphorus to waters occur. Since surface waters ultimately drain to the sea, carrying the accumulating nutrient burdens that they pick up along the way, estuaries and coastal waters are uniquely vulnerable to nutrient related ecological disturbance, and are likely therefore to show most clearly both the adverse consequences of excessive enrichment and the benefits of measures taken to combat these problems.

It is worth stating here that, in addition to biodegradable organic matter and nutrients, other substances, including more serious pollutants, are generally present in discharges from waste water treatment plants or collection systems and in riverine inflows, and also arise from sources such as shipping and port activities. Since many of these pollutants are typically much more difficult to monitor in seawater, they are monitored by regular measurement of their presence in sediments or in shellfish or fish tissue rather than in the water itself (see next section). However, measuring the degree of disturbance to water quality due to eutrophication or the direct polluting effects of biodegradable organic matter serves as a highly efficient indirect indicator of the potential extent of pollution by less easily detectable but more environmentally significant contaminants. In particular, water bodies* which are found to be impacted by eutrophication or by organic enrichment are also more likely to exhibit contamination by potentially more serious contaminants than those which are not in this condition.

* "Water Bodies" in this context refer to the water management units developed for the purposes of implementing the WFD, and do not necessarily conform to natural water systems such as a recognised estuary or Bay, though some do. Large waterways have been partitioned into management units to fulfil the WFDs specification that "a (surface) water body is a discrete and significant element of surface water..." which is of uniform "ecological status". Thus, for example, the Shannon Estuary as normally understood comprises a total of seven water bodies, the Tidal Shannon River, the Upper Shannon Estuary and the Lower Shannon Estuary, the Maigue, Fergus and Deel Estuaries and the Mouth of the Shannon. Each of these is considered to warrant separate and individual attention when considering pressures on their ecological state and management measures required to address these pressures. See www.wfdireland.ie for more information on these developments.

TABLE 4.3

Trophic classification of tidal water bodies in the periods 1995-1999 and 1999-2003 and indication of change in status between these periods. Note water body boundaries have been adjusted to conform with WFD designations, thus outcome here may differ for earlier 1995-1999 assessments (EPA, 2001a)

Water Body	Category	Assessment 1999 - 2003	Assessment 1995 - 1999	Change from 1995 - 1999
Argideen Estuary ¹	Estuary	EUTROPHIC	Not Assessed	
Bandon Estuary Upper	Estuary	EUTROPHIC	EUTROPHIC	Unchanged
Bandon Estuary Lower	Estuary	EUTROPHIC	EUTROPHIC	Unchanged
Blackwater Estuary Lower	Estuary	EUTROPHIC	Potentially Eutrophic	Disimprovement
Broadmeadow Estuary (Inner)	Estuary	EUTROPHIC	EUTROPHIC	Unchanged
Castletown Estuary	Estuary	EUTROPHIC	Intermediate	Disimprovement
Lee (Tralee) Estuary Upper	Estuary	EUTROPHIC	EUTROPHIC	Unchanged
Lough Mahon	Estuary	EUTROPHIC	EUTROPHIC	Unchanged
Owenacurra Estuary	Estuary	EUTROPHIC	Potentially Eutrophic	Disimprovement
Rogerstown Estuary ²	Estuary	EUTROPHIC	Not Assessed	
Slaney Estuary Lower	Estuary	EUTROPHIC	EUTROPHIC	Unchanged
Wexford Harbour South	Estuary	EUTROPHIC	Intermediate	Disimprovement
Barrow Estuary	Tidal Fresh	Potentially Eutrophic	EUTROPHIC	Improvement
Blackwater Estuary Upper	Tidal Fresh	Potentially Eutrophic	Potentially Eutrophic	Unchanged
Boyne Estuary ³	Estuary	Potentially Eutrophic	Intermediate	Unchanged
Bantry Bay Inner	Estuary	Intermediate	Not Assessed	
Bantry Bay Outer	Bay	Intermediate	Not Assessed	
Barrow Nore Estuary	Estuary	Intermediate	Intermediate	Unchanged
Barrow Nore Suir Estuary (Outer)	Estuary	Intermediate	Intermediate	Unchanged
Broadmeadow Estuary (Outer)	Bay	Intermediate	Unpolluted	Disimprovement
Cashen Feale Estuary	Estuary	Intermediate	EUTROPHIC	Unchanged
Colligan Estuary	Estuary	Intermediate	Intermediate	Unchanged
Cork Harbour	Bay	Intermediate	Unpolluted	Disimprovement
Deel Estuary	Estuary	Intermediate	Intermediate	Unchanged
Dundalk Bay Inner	Estuary	Intermediate	EUTROPHIC	Unchanged
Feale Estuary Upper	Tidal Fresh	Intermediate	EUTROPHIC	Unchanged
Fergus Estuary	Estuary	Intermediate	Intermediate	Unchanged
Garavoge Estuary	Estuary	Intermediate	Intermediate	Unchanged
Killybegs Harbour	Bay	Intermediate	EUTROPHIC	Improvement
Kinsale Harbour	Bay	Intermediate	Intermediate	Unchanged
Lee Estuary	Estuary	Intermediate	Intermediate	Improvement
Liffey Estuary	Estuary	Intermediate	EUTROPHIC	Improvement
Maigue Estuary	Estuary	Intermediate	Intermediate	Unchanged
McSwyne's Bay	Coastal	Intermediate	Unpolluted	Disimprovement
Nore Estuary	Tidal Fresh	Intermediate	Unpolluted	Disimprovement
Nth Channel, Cork Harbour	Estuary	Intermediate	EUTROPHIC	Improvement
Rogerstown Estuary Outer	Bay	Intermediate	Unpolluted	Disimprovement
Shannon River (Tidal)	Tidal Fresh	Intermediate	Unpolluted	Disimprovement

Lough Mahon, by contrast, exhibits a partial degree of recovery in respect of dissolved oxygen levels in both periods, though because of the occurrence of elevated chlorophyll concentrations in combination with breaches of nutrient thresholds this water body was classed as Eutrophic in both. It is of note, however, that, while all four of the individual nutrient criteria were breached in Lough Mahon in the 1995–1999 assessment, only one of these, the winter nitrogen criterion, was in breach in the current period. This may to some extent reflect the developments being undertaken under the Cork Main Drainage Project, which was largely completed in 2004 and has achieved the cessation of the discharges of untreated sewage into the Lee Estuary and Lough Mahon. Biological treatment processes are currently in operation at the recently commissioned WWTP at Carrigrennan, Little Island. It is too early to predict whether the addition of nitrogen removal will be required to reverse the eutrophic status of Lough Mahon, recently designated, along with the Lee Estuary, as a Sensitive Area.

The Owenacurra Estuary was confirmed as being in a Eutrophic condition in this assessment, due in large measure to the high levels of nitrogen in the Owenacurra River. The trophic status of the North Channel appears to have improved since the last assessment, though there remains a lack of comprehensive nutrient data in respect of this water body, particularly from the winter months. These water bodies have been jointly designated as a Sensitive Area.

Cashen Feale and Shannon Estuaries

The Cashen Feale Estuary appears to have improved since 1995–1999, though excessive chlorophyll concentrations were observed in the Cashen. The estuaries of the Maigue and Deel Rivers exhibited high nutrient concentrations, though only the Deel Estuary had high dissolved oxygen levels; neither were in breach of the chlorophyll criterion, so were again found to be of Intermediate condition.

~~Tidal Shannon River and the Fergus Estuary remained in Intermediate condition also, though in both cases this was due to slightly elevated summer phosphate levels only, with no accompanying chlorophyll or oxygen disturbance.~~

Killybegs Harbour

Killybegs Harbour, which has been designated as a Sensitive Area, improved to an Intermediate condition in the current period; marked deoxygenation is typical in this water body, particularly in the bottom waters. This was also observed outside the Harbour in McSwynes' Bay on a number of surveys in 2002 and 2003, where bottom dissolved oxygen levels in waters over 30 m deep were found to be consistently as low as 50 per cent of normal levels. Since similar data are not available for the previous period, this observation cannot readily be ascribed to any pollution source or event, so further surveillance of this phenomenon is required in future surveys in Killybegs Harbour and its adjacent coastal waters.

APPENDIX II Contd.

8B02	BLACKWATER (MUNSTER)	700	Charles' Br	33	8	24
18B02	BLACKWATER (MUNSTER)	900	Colthurst Br	35	8	23
18B02	BLACKWATER (MUNSTER)	1000	Ballymaquirk Br	35	4	11
18B02	BLACKWATER (MUNSTER)	1300	Lombardstown Br	35	7	20
18B02	BLACKWATER (MUNSTER)	1510	Rly Br, Mallow (RHS)	35	7	20
18B02	BLACKWATER (MUNSTER)	1690	1.2 km d/s Mallow Br	35	8	23
18B02	BLACKWATER (MUNSTER)	1800	Ballymagooly	2	1	50
18B02	BLACKWATER (MUNSTER)	1900	Killavullen Br	66	19	29
18B02	BLACKWATER (MUNSTER)	2000	Ballyhooley Br	35	8	23
18B02	BLACKWATER (MUNSTER)	2100	Cregg Castle	34	7	21
18B02	BLACKWATER (MUNSTER)	2300	Illedash 2.1 km d/s Fermoy	35	10	29
18B02	BLACKWATER (MUNSTER)	2450	W of Kilmurry Ho	32	14	44
18B02	BLACKWATER (MUNSTER)	2500	Ballyduff Br	31	11	35
18B02	BLACKWATER (MUNSTER)	2600	Lismore Br	31	12	39
18B02	BLACKWATER (MUNSTER)	2700	2km d/s Lismore Br	30	10	33

NITRITES:

Criteria: 95% of samples to be less than 0.05 mg/l NO₂

Code	River	Station	Location	No. of Samples	No > 0.05	% > 0.05
18B05	BRIDE (BLACKWATER)	50	Bride Br, Chimneyfield	35	3	9
18B05	BRIDE (BLACKWATER)	320	Dr Barry Br	35	4	11
18B05	BRIDE (BLACKWATER)	400	Bride Br	35	7	20
18B05	BRIDE (BLACKWATER)	500	Bealacoon Footbridge	35	6	17
18B05	BRIDE (BLACKWATER)	700	Mogeely Br	33	9	27
18B05	BRIDE	800	Tallowbridge	31	8	26
19L03	LEE (CORK)	360	Bealaghglashin Br (New Br)	68	14	21
19L03	LEE (CORK)	400	Carrigadrohid Br	72	16	22
19L03	LEE (CORK)	500	Rooves Br S of Coachford	72	24	33
19L03	LEE (CORK)	600	Inishcarra Br	70	26	37
19L03	LEE (CORK)	650	Angler's Rest Ballincollig	72	16	22
19L03	LEE (CORK)	800	Weir u/s Victoria Br (Intake)	64	28	44
20A02	ARGIDEEN	45	Argideen Br	96	12	13
20A02	ARGIDEEN	60	Ballaghcummer Br	72	6	8
20A02	ARGIDEEN	100	Lisselane Br (Jones Br)	98	14	14
20A02	ARGIDEEN	150	Castleview Br	94	14	15

Contd.

APPENDIX II Contd.

20A02	ARGIDEEN	200	Kilmaloda Br	91	12	13
22M01	MAINE	50	Br SW of Tobermaing House	30	2	7
22M01	MAINE	300	Herbert Br	30	3	10
22M01	MAINE	400	Br 2km d/s Castleisland	30	3	10
22M01	MAINE	500	Br NW of Currans	30	4	13
22M01	MAINE	600	Maine Br, Currans	30	2	7
22M01	MAINE	700	Maine Br (Lower)	30	4	13
22M01	MAINE	800	Castlemaine Bridge	30	7	23
23F01	FEALE	750	Weir SW of Greenville	34	2	6
23F01	FEALE	800	Br at Finuge	31	3	10
23F01	FEALE	860	Railway Br u/s Ferry Br	27	2	7
27F01	FERGUS	700	Clonroad Br	34	3	9
27F01	FERGUS	720	Bridge S.W. of Doora	32	5	16
39G01	GLASHAGH (UPPER)	300	Cabra Br	12	12	100
39G02	GLASHAGH (LOWER)	170	Barrack Bridge	18	18	100
39L01	LEANNAN	500	Ballydone Br (u/s L Fern)	20	20	100
39L01	LEANNAN	550	0.8 km d/s L. Fern	13	13	100
39L01	LEANNAN	700	Bridge at Claragh	17	17	100
39L01	LEANNAN	800	Drumonaghan Br	18	15	83
39L02	LURGY	250	Br in Kilmacrennan	16	16	100
39L02	LURGY	280	d/s Kilmacrennan STW	17	17	100
39M01	MAGGY'S BURN	150	d/s Br in Milford (u/s STW)	17	17	100
39M01	MAGGY'S BURN	200	d/s Milford (d/s STW)	18	18	100
39S02	SWILLY	50	Swilly Br (near Breenagh)	12	12	100
39S02	SWILLY	190	75m u/s Br at Newmills	11	11	100
39S02	SWILLY	300	Old Town, Letterkenny	12	12	100
39S02	SWILLY	350	u/s Sprack Burn near Church	12	12	100
39S02	SWILLY	370	d/s Sprack Burn	13	13	100

Dissolved Copper:**Criteria:**

95% of samples to be less than 0.005 mg/l Cu where Hardness is 10 mg/l CaCO₃.

95% of samples to be less than 0.022 mg/l Cu where Hardness is 50 mg/l CaCO₃.

95% of samples to be less than 0.04 mg/l Cu where Hardness is 100 mg/l CaCO₃.

95% of samples to be less than 0.112 mg/l Cu where Hardness is 300 mg/l CaCO₃.

Code	River	Station	Location	No. of Samples	No > limit	% > limit
01F01	FINN (DONEGAL)	700	Footbridge, Ballybofey	7	1	14.3
01F01	FINN (DONEGAL)	890	0.5 km u/s Br S of Killygordin	8	1	12.5
01F01	FINN (DONEGAL)	1080	u/s Castlefinn STW	8	1	12.5
22B03	BROWN FLESK	100	Rice Br	27	2	7.4
22B03	BROWN FLESK	250	Ford S of Ballybeg Ho	27	4	14.8
22B03	BROWN FLESK	300	Flesk Br, Currow	27	2	7.4
22B03	BROWN FLESK	400	O'Connell Br	27	2	7.4
23F01	FEALE	400	2.3 km d/s Abbeyfeale	26	2	7.7
39S02	SWILLY	370	d/s Sprack Burn	13	2	15.4

Notes:

Exceedances of the Temperature and Total Zinc criteria were not recorded in this cycle.

Assessment of compliance with criteria for phenols, petroleum hydrocarbons, residual chlorine and suspended solids has not been determined largely because of a general scarcity of information on these parameters.

The nitrite criterion is considered to be set too low for Irish conditions.

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Water Body	Salinity				Category a: Nutrient Enrichment				Category b: Accelerated Growth				Category c: Undesirable Disturbance							
	W		S		DIN		MRP		Chl a (Summer)		90%ile		5%ile		DO (Summer)		95%ile			
	n	n	n	n	W	S	W	S	Median	90%ile	90%ile	5%ile	5%ile	DO (Summer)	95%ile	DO (Summer)	95%ile	95%ile		
Castletown River	0.1	14	0.1	19	2.6	2.5	C	40	C	70	B	6.5	C	12.4	C	96	C	128	C	I
Castletown Estuary	8.3	21	20.0	119	2.1	0.9	B	60	C	80	B	20.5	B	55.5	B	33	B	124	C	E
Inner Dundalk Bay	31.0	6	32.6	87	0.3	0.1	C	35	C	20	C	10.0	C	30.9	B	68	B	114	C	I
Outer Dundalk Bay	33.4	30	33.7	21	0.2	0.0	C	24	C	10	C	3.0	C	9.0	C	93	C	117	C	U
Circumcoastal Dundalk Bay	34.0	64		0	0.1		C	20	C											U
Offshore Dundalk Bay	34.3	23		0	0.1		C	18												U
Boyne River	0.4	87	0.4	101	2.9	2.1	B	52	C	33	C	10.5	C	15.5	C	91	C	126	C	I
Boyne Estuary ¹	0.3	8	14.0	199	0.1	0.8	C	60	C	70	B	7.0	C	15.1	C	80	C	105	C	P-E
Boyne Estuary Plume Zone	33.2	27	33.7	33	0.2	0.1	C	23	C	10	C	3.0	C	9.1	C	90	C	106	C	U
Circumcoastal Boyne	34.2	133		0	0.1		C	20	C											U
Offshore Boyne	34.3	24		0	0.1		C	17	C											U
Ballyboghil River		0	0.3	6		2.5	C		C	179	B	4.8	C	7.3	C	74	C	97	C	I
Rogerstown Estuary ²	5.2	3	31.2	26	6.5	0.2	B	180	C	75	B	9.3	C	19.1	M	74	B	150	B	E
Outer Rogerstown Estuary	33.1	3	33.1	45	0.4	0.0	C	37	C	22	C	2.8	C	6.1	C	90	C	141	B	I
Adjacent Coastal	33.8	15	33.7	59	0.1	0.0	C	19	C	10	C	4.0	C	7.4	C	93	C	114	C	U
Circumcoastal Rogerstown	34.3	87		0	0.1		C	18	C											U
Offshore Rogerstown	34.5	20		0	0.1		C	16	C											U

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