

Section F attachment: Habitats Directive Assessment (Screening Report) in respect of Application by Cork County Council to the EPA for Wastewater Discharge Certificate of Authorisation for Coolea Agglomeration.

1 Introduction

1.1 Wastewater Discharge Certificate of Authorisation for Coolea Agglomeration covers the agglomeration of the Coolea village. This settlement with a population of 200 is located approximately 20 kilometres west of Macroom as part of the Muskerry Gaeltacht region. The Village of Coolea is served by a septic tank which discharges into the Sullane River. It was built to treat waste from a population much smaller than that which it currently serves. Currently the septic tank treats waste of approx. 200 PE which includes some industries in addition to domestic waste.

For new projects and significant changes to any existing operations, if the answer is 'yes' to any of the following, the project (i.e. construction, operation and maintenance) must be screened for its impacts:	
1. Is the development in or on the boundary of a nature conservation site NHA/SAC/SPA?	NO
2. Will nationally protected species be directly impacted? (Wildlife Acts (1976 and 2000), Flora Protection order (S.I. 94 of 1999))?	No
3. Is the development a surface water discharge or abstraction in the surface water catchment, or immediately downstream of a nature conservation site with water dependant qualifying habitats/ species?	No
4. Is the development a groundwater discharge or abstraction in the ground water catchment or within 5 km of a nature conservation site with water-dependant qualifying habitats/species?	No
5. Is the development in the surface water or groundwater catchment of salmonid waters? River Lee	yes
6. Is the treatment plant in an active or former floodplain or flood zone of a river, lake, etc?	No
7. Is the development a surface discharge or abstraction to or from marine waters and within 3km of a marine nature conservation site?	No
8. Will the project in combination with other projects (existing and proposed) or changes to such projects affect the hydrology or water levels of sites of nature conservation interest or the habitats of protected species?	No
<i>Refer to Flow chart attached to section F</i>	

1.2 This document brings together all of the information necessary to make determination as to whether there are likely to be significant impacts arising from the discharge from the septic tank in Coolea on the designated sites within the catchment area.

These are :-

SAC – St Gobnets Wood (000106) - approx 4.15km upstream of discharge location where the qualifying habitat is not water dependent

SPA - Mullaghanish to Musheramore – protected species Hen Harrier – Not water dependent. Stream in site joins the Foherish River which in turn joins the Sullane 15 km downstream of discharge location.

SAC – Mullaghanish – Musheramore – Same as above

SAC/SPA – The Gearagh – Located on River Lee approx 2km upstream of where Sullane meets Lee. The Sullane meets the Lee approx. 27 km downstream of the Coolea discharge location.

Based on the preliminary flow chart already carried out, the need for an assessment is solely to assess whether the Baile Mhic Íre septic tank discharge has an impact on the salmonoid waters of the Lee. The septic tank discharges into the Sullane River which is in the Upper Lee Catchment Area. The Sullane meets the Lee approx 27 km downstream of the discharge location.

2 Appropriate Assessment Screening Matrix

2.1 Description of project	
Location	Coolea Septic Tank
Description of the key components of the project	Coolea septic tank serves a population equivalent of approx 200. It was designed to treat a much smaller population when originally constructed. It discharges directly into the Sullane river.
Distance from designated sites in potential impact zone	27 km from Salmonoid river (River Lee), See above for Natura sites in the vicinity.

2.2 Description of the Natura 2000 sites within the potential impact zone ¹	
Name	<p>None within impact zone.</p> <p>Designated sites within the area are :</p> <p>St Gobnets Wood SAC is located approx 4.15km upstream of the discharge location and the qualifying habitats and species are not water dependent.</p> <p>Mullaghanish- Musheramore SAC/SPA – The qualifying habitats and species are not water dependent. A stream runs through the area which joins the Foherish river. The Foherish is a tributary to the Sullane and its confluence is approx 15km downstream of Coolea</p> <p>The Gearagh SAC/SPA is located on the River Lee approx 2km upstream of the Sullane/Lee confluence.</p>
Site Code	N/A

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¹ Natura 2000 sites within the potential impact zone of the proposed development have been identified in accordance with guidance provided in the NPWS circular L8/08.

2.3 Assessment Criteria	
<p>Describe the individual elements of the project (either alone or in combination with other plans or projects) likely to give rise to impacts on the Salmonoid River.</p>	<p>Discharge from Coolea Tank</p> <p><i>Wastewater from the septic tank is discharged into the Sullane river. The discharge consists of primary treated effluent from the septic tank The system is overloaded and the waste is not receiving proper treatment.</i></p> <p>Other Discharges in the vicinity: Clondrohid – Two septic tanks discharging to the Foherish tributary of the Sullane. The Foherish/Sullane confluence occurs approx. 10km downstream of Baile Mhic Íre</p> <p><i>Coolcower septic tank (approx. pe 100) discharges directly into the River Lee downstream of the Lee/Sullane confluence.</i></p> <p>Macroom WWTP discharges into the Sullane River. The lee and the Sullane combine approx 1km downstream of the Macroom discharge point.</p>
<p>Describe any likely direct, indirect or secondary impacts of the project (either alone or in combination with other plans or projects) on the Salmonoid river taking into account the following:</p> <ul style="list-style-type: none"> ○ Size and scale ○ Land-take ○ Distance from the Natura 2000 site or key features of the site: ○ Resource requirements (water abstraction etc.) ○ Emissions (disposal to land, water or air) ○ Excavation Requirements ○ Transportation Requirements ○ Duration of construction, operation, decommissioning ○ Other. 	<p>Discharges could give rise to elevated nutrients entering the River Lee. Increased nutrients could have a negative impact on the fish life in the river.</p> <p style="color: red; transform: rotate(-45deg); opacity: 0.5;">For inspection purposes only. Consent of copyright owner required for any other use.</p>
<p>Describe any likely changes to the site arising as a result of:</p> <ul style="list-style-type: none"> ○ Reduction in habitat 	<p>Reduction in habitat area: N/A</p> <p>Disturbance to key species:</p>

<ul style="list-style-type: none"> area ○ Disturbance to key species ○ Habitat or species fragmentation ○ Reduction in species density ○ Changes in key indicators of conservation value (water quality etc) ○ Climate Change 	<p><i>Increased nutrients in the Sullane river and the river Lee downstream of the discharge location could have a negative effect on fish numbers in the Lee. However there is no evidence to support this.</i></p> <p>Habitat or species fragmentation: <i>No water dependent species in the surrounding SAC's SPA's.</i></p> <p>Reduction in species density: <i>N/A.</i></p> <p>Changes in key indicators of conservation value eg water quality:</p> <p><i>The South Western River Basin District have carried out a Water Management Unit Report on the Upper lee Catchment. This includes all the tributaries to the Lee upstream of Macroom. The Sullane is classified as having good water quality as is the upper Lee. The intention of the SWRBD is to preserve this good quality.</i></p> <p><i>The EPA water monitoring sites in the vicinity give a consistent Q rating of 4 upstream of the discharge location. Downstream of the discharge location has a Q rating of 4-5. (last available data 2008).</i></p> <p><i>As part of the Application process Cork County Council carried out limited sampling of water immediately upstream and downstream of the discharge point (depending on safe access) There is no evidence of deterioration of water quality associated with these results.</i></p>
<p>Describe from the above those elements of the project of plan, or combination of elements, where the above impacts are likely to be significant or where the scale or magnitude of impacts is not known.</p>	<p>No significant impacts are predicted.</p>

3. Finding of No Significant Effects Report Matrix

3.1 Project Description	
Name of project or plan	Coolea septic tank discharge
Name of salmonoid River	River Lee
Description of the project or plan	The septic tank serves the village of Coolea (mainly residential).
Is the project or plan directly connected with or necessary to the management of the site (provide details)?	No

3.2 The assessment of significance of effects	
Describe how the project or plan (alone or in combination) is likely to affect the Natura 2000 Site.	<p>Septic tanks provide primary treatment only. The passage of sewage through a septic tank helps in the removal of suspended solids but there is very little biological activity and the removal of BOD is not significant. Generally the septic tank removes 50% of the particulate BOD and none of the soluble BOD. Typically BOD in urban wastewater is 50% particulate and 50% soluble, hence the septic tank removes 25% of the BOD from the wastewater. Coolea septic tank provides an average level of treatment as it is seriously overloaded. Though monitoring of the Sullane downstream of the discharge location shows no deterioration in quality over the last ten years, the assessment of the impacts of the discharge in relation to the 2009 EQS regulations found that in "worst case scenarios" the discharge is causing the river immediately downstream of the discharge to be in breach of these new standards.</p> <p><i>(It should be noted here that where the breaches occur the EQS predicted impacts assessments are calculated using a 3DWF flow figure where the normal flow is that generated by the 200pe. This pop figure is taken from the application as the population that could be contributing to the septic tank over the lifetime of the licence. When assessing the impacts for normal flow conditions i.e. using 200pop the river is not in breach).</i></p>
Explain why these effects are not considered significant.	<p>The Lee confluence is 27km downstream of the discharge location.</p> <p>The Sullane river downstream of Baile Mhic Ìre has a consistent Q value of 4-5 which means the river is not eutrophic. Therefore the discharge cannot be having an impact on the fish life in the river. If the Sullane is unaffected</p>

	<p>by the discharge it follows that the discharge is not impacting negatively on the Lee river.</p> <p>The breaches caused when assessing against the new EQS standards are based on very extreme flow figures (worst case scenario).</p> <p>In normal flow situations using a projected population figure of 200 the discharge does not cause any breach in standards for water quality.</p>
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Data collected to carry out the assessment			
Who carried out the assessment	Sources of data	Level of assessment completed	Where can the full results of the assessment be accessed and viewed
Mahmoud Shaladan, Cork County Council	Cork Co Council EPA water quality monitoring data	Desktop review of cited data.	This report.

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From: Maria Murphy
Sent: 20 June 2012 14:14
To: Shaladan

SITE SYNOPSIS

SITE NAME: ST. GOBNET'S WOOD

SITE CODE: 000106

St. Gobnet's Wood, which is about 30 ha in extent, is situated on the side of a hill immediately south of Ballyvourney village in Co. Cork. The site is important for the presence of old oak woodlands, a habitat listed on Annex I of the EU Habitats Directive. The soil of the wood is brown earth to brown podzolic, moist and relatively fertile over most of the area, but especially in the vicinity of the small stream near the south-eastern boundary. Seepage areas and rock outcrops occur.

The canopy is dominated by a mixture of Birch (*Betula* sp.), old Beech (*Fagus sylvatica*), Ash (*Fraxinus excelsior*) and Sessile Oak (*Quercus petraea*), with occasional Alder (*Alnus glutinosa*) and Sycamore (*Acer pseudoplatanus*). The trees are 10 - 14m high so that the wood exhibits a rather scrubby appearance. Removal of trees has clearly occurred in the past. Regeneration of native species is poor. The shrub layer is sparse and consists mainly of Hazel (*Corylus avellana*), Willow (*Salix* sp.), Hawthorn (*Crataegus monogyna*), Birch (*Betula* sp.), Holly (*Ilex aquifolium*) and Dogwood (*Cornus sanguinea*). There are also a few Rhododendron (*Rhododendron ponticum*) bushes.

The herb layer is very rich; species present include Bilberry (*Vaccinium myrtillus*) and Great Wood-rush (*Luzula sylvatica*), both of which are locally dominant, Bluebell (*Hyacinthoides non-scripta*), St. Patrick's Cabbage (*Saxifraga spathularis*), Herb-robert (*Geranium robertianum*), Robin-run-the-hedge (*Galium aparine*), Yorkshire-fog (*Holcus lanatus*), Wood-sorrel (*Oxalis acetosella*), Enchanter's-nightshade (*Circaea lutetiana*), Honeysuckle (*Lonicera periclymenum*), Ivy (*Hedera helix*), Violet (*Viola* spp.), Columbine (*Aquilegia vulgaris*), Irish Spurge (*Euphorbia hyberna*) and several ferns (*Dryopteris borreeri*, *D. aemula*, *Blechnum spicant*, *Athyrium filix-femina*, *Polystichum* sp.). The ground layer includes a number of bryophytes: *Sphagnum* cf. *quinquefarium*, *Rhytidiadelphus triquetrus*, *Thuidium tamariscinum* and *Hylocomium brevirostre*.

At the bottom of the hill is an area resembling a water meadow where Common Bent (*Agrostis capillaris*), Bracken (*Pteridium aquilinum*) and Bramble (*Rubus fruticosus* agg.) are locally dominant. At the top of the hill, two fields are being reinvaded by Birch and Gorse scrub.

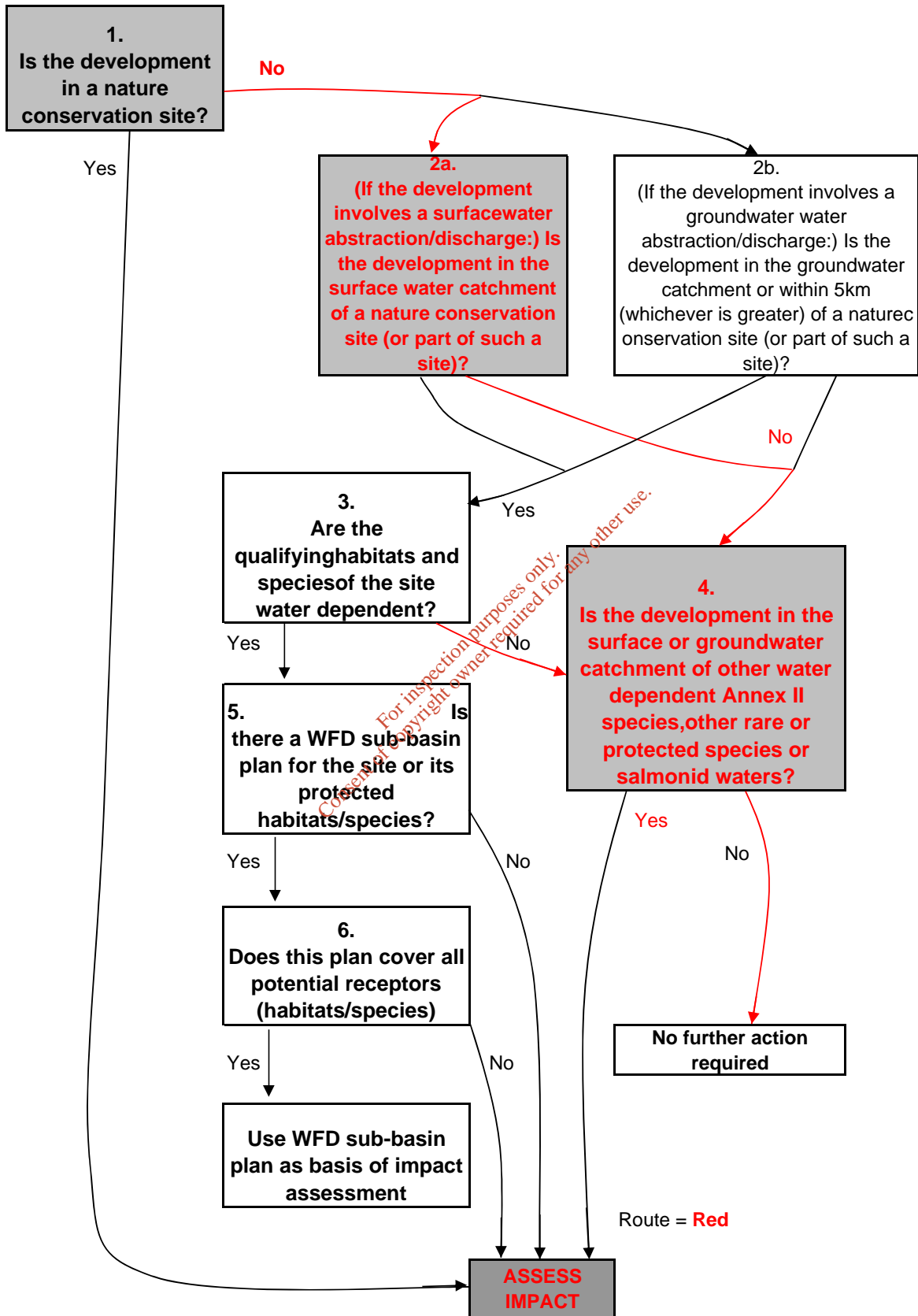
Removal of some of the exotic species from the woodland, such as Rhododendron, is ongoing and the rehabilitation of the riverside woodland has also been successfully carried out. Future management may need to focus on the removal of Sycamore and Beech.

St. Gobnet's Wood is a good example of a native woodland typical of the south-west. It contains old oak woodlands, a habitat listed on the EU Habitats Directive, and also supports rich herb and bryophyte communities.

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3.12.1999

Flow Diagram - Route Highlighted Red & Shaded Grey



Conclusion: An appropriate assessment is required for Coolea discharge



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Acorn Business Campus
Mahon Industrial Park,
Blackrock,
Cork
Ireland
Tel: +353 21 453 6141
Fax: +353 21 453 6149
Web: www.irishwatertesting.com



Contact Name	Alan Costello	Report Number	51740 - 1
Address	Cork County Council (Iniscarra Waste Water Environment Lab) Inniscarra Laboratories,	Sample Number	51740/001
Tel No	021-4532707	Date of Receipt	20/06/2011
Fax No	021-4874080	Date Started	20/06/2011
Customer PO	PO513412	Received or Collected	Fastway
Quotation No	QN000438	Condition on Receipt	Good
Customer Ref	GV491-Downstream	Date of Report	11/07/2011
		Sample Type	Surface Waters

CERTIFICATE OF ANALYSIS

TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	OOS
Cyanide-Free									
	Cyanide-Free		EW154M	5.000		<5.0	ug/L		
GCMS-Triazines									
	Atrazine		EO129	0.010		<0.010	ug/L		
	Simazine		EO129	0.010		<0.010	ug/L		
Ion Chromatography									
	Fluoride		EW137	0.100		<0.1	mg/L	INAB	
Metals-Trace									
	Arsenic		EM130	0.200		3.1	ug/L	INAB	
	Barium		EM130	1.000		6.9	ug/L	INAB	
	Cadmium		EM130	0.100		<0.1	ug/L	INAB	
	Chromium		EM130	1.000		19.3	ug/L	INAB	
	Mercury		EM130	0.020		<0.02	ug/L	INAB	
	Nickel		EM130	0.500		3.9	ug/L	INAB	
	Lead		EM130	0.300		0.8	ug/L	INAB	
	Selenium		EM130	0.200		7.1	ug/L	INAB	
	Zinc		EM130	1.000		8.6	ug/L	INAB	
	Boron		EM130	0.020		1.70	mg/L	INAB	
	Copper		EM130	0.003		0.225	mg/L	INAB	
Phenols Low Level (Sub)									
	Phenols Total	*	Default	0.50		<0.50	ug/L		
	2,4,6-Trichlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	2,4-Dichlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	2,4-Dimethylphenol	*	Default	0.1		<0.10	ug/L	YES	
	2-Chlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	3,5-Dimthphenol	*	Default	0.1		<0.10	ug/L	YES	
	4-Chlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	M/P-Methylphenol	*	Default	0.1		<0.10	ug/L	YES	
	O-Methylphenol	*	Default	0.1		<0.10	ug/L	YES	
	Phenol	*	Default	0.5		<0.50	ug/L	YES	
Tributyl Tin (Sub)									
	Tributyl Tin (Sub)	*	Default	0.02		<0.02	ug/L	YES	
VOC-WW-VOC									
	Toluene		EO025	0.500		<0.5	ug/L	INAB	
	Dichloromethane		EO025	0.500		<0.5	ug/L	INAB	
	Xylene-O		EO025	0.500		<0.5	ug/L	INAB	

Brendan Murray

Signed :

11/07/2011

Technical Manager (or Deputy):

Brendan Murray

NOTES

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TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	OOS
VOC-WW-VOC									
	Xylene P&M		EO025	0.500		<0.5	ug/L	INAB	
	Xylenes-Total (Calc)		EO025	1.000		<1.0	ug/L		

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Quotation No	QN000438	Condition on Receipt	Good
Customer Ref	GV492-Upstream	Date of Report	11/07/2011
		Sample Type	Surface Waters

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TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	OOS
Cyanide-Free									
	Cyanide-Free		EW154M	5.000		6.9	ug/L		
GCMS-Triazines									
	Atrazine		EO129	0.010		<0.010	ug/L		
	Simazine		EO129	0.010		<0.010	ug/L		
Ion Chromatography									
	Fluoride		EW137	0.100		<0.1	mg/L	INAB	
Metals-Trace									
	Arsenic		EM130	0.200		0.9	ug/L	INAB	
	Barium		EM130	1.000		11.2	ug/L	INAB	
	Cadmium		EM130	0.100		0.1	ug/L	INAB	
	Chromium		EM130	1.000		1.4	ug/L	INAB	
	Mercury		EM130	0.020		<0.02	ug/L	INAB	
	Nickel		EM130	0.500		4.4	ug/L	INAB	
	Lead		EM130	0.300		1.3	ug/L	INAB	
	Selenium		EM130	0.200		<0.2	ug/L	INAB	
	Zinc		EM130	1.000		21.3	ug/L	INAB	
	Boron		EM130	0.020		0.02	mg/L	INAB	
	Copper		EM130	0.003		0.009	mg/L	INAB	
Phenols Low Level (Sub)									
	Phenols Total	*	Default	0.50		1.12	ug/L		
	2,4,6-Trichlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	2,4-Dichlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	2,4-Dimethylphenol	*	Default	0.1		<0.10	ug/L	YES	
	2-Chlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	3,5-Dimthphenol	*	Default	0.1		<0.10	ug/L	YES	
	4-Chlorophenol	*	Default	0.1		<0.10	ug/L	YES	
	M/P-Methylphenol	*	Default	0.1		<0.10	ug/L	YES	
	O-Methylphenol	*	Default	0.1		<0.10	ug/L	YES	
	Phenol	*	Default	0.5		1.12	ug/L	YES	
Tributyl Tin (Sub)									
	Tributyl Tin (Sub)	*	Default	0.02		<0.02	ug/L	YES	
VOC-WW-VOC									
	Toluene		EO025	0.500		<0.5	ug/L	INAB	
	Dichloromethane		EO025	0.500		<0.5	ug/L	INAB	
	Xylene-O		EO025	0.500		<0.5	ug/L	INAB	
	Xylene P&M		EO025	0.500		<0.5	ug/L	INAB	

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TEST	ANALYTE	SUB	METHOD	LOQ	SPEC	RESULT	UNITS	ACCRED.	OOS
VOC-WW-VOC									
	Xylenes-Total (Calc)		EO025	1.000		<1.0	ug/L		

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River Name	Sullane (River)(19_952)
XY Location	116632,76000 (ING)

River Segment Map



Disclaimer

The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.



Disclaimer

The source of hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

The user should familiarise himself/herself with the catchment being studied and confirm that the ungauged site is in a natural catchment where flows conditions are suitable for the use of the model.

It is strongly recommended that the user examine the catchment descriptors contained in the report produced and confirm that the percentages of the various constituent elements are comparable to a natural catchment.

If the flow in a catchment is not entirely natural, the estimation of flows using the model in these catchments could be affected due to:

- existence of local conduit karst within the catchment;
- the selected location itself is on local conduit karst;
- regulation of the river flow on the river channel (e.g. power station, sluice gates etc)
- impacts of abstractions upstream of the selected location or the impact of the discharge associated with the abstraction into the same/different catchment;
- estimates of flow being sought at locations effected by storage effects at, or near, lake outfalls;
- lack of similar catchments with observed flows, ie where catchment descriptors lie outside the range of available gauging station catchments (e.g. the catchment area is under 5 km²);
- any other special circumstances that may affect river flows.

Expert judgement will be required to ensure that the estimate of flow is not unduly affected by any of these influences.

Please note that the model does not provide estimates of flood peaks and, specifically, should not be used for that purpose.

The EPA has also prepared estimates of DWF and long term 95 percentile flows which are also presented on the EPA web site. These data are presented at <http://www.epa.ie/whatwedo/monitoring/water/hydrometrics/data/>

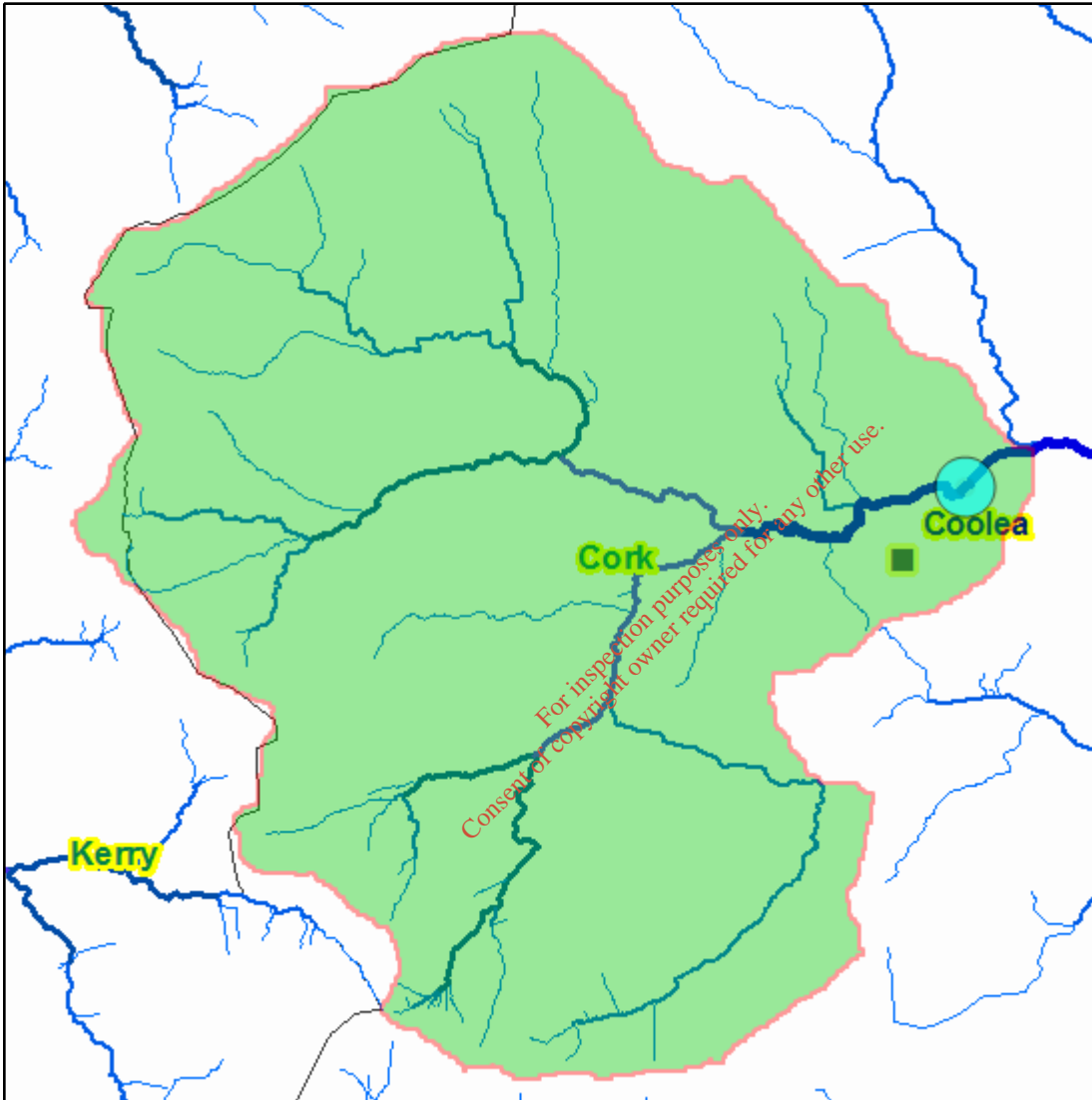
The data produced by the model for specific stations should be compared to the data contained in this file of DWF and long term 95percentile flows.

Disclaimer

The source hydrometric data used to estimate the flow duration curve ordinates for ungauged catchments was obtained from (1) water level data and (2) the rating curve(s) generated for each hydrometric station. The Environmental Protection Agency and the Office of Public Works used these data, respectively, to calculate daily mean flows. The daily mean flows were then used by the Environmental Protection Agency to prepare flow duration curves for each station. Neither body accepts any liability for the subsequent handling of the data.

River Name	Sullane (River)(19_952)
XY Location	116632,76000 (ING)

Nested Catchment Map

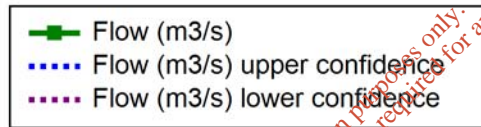
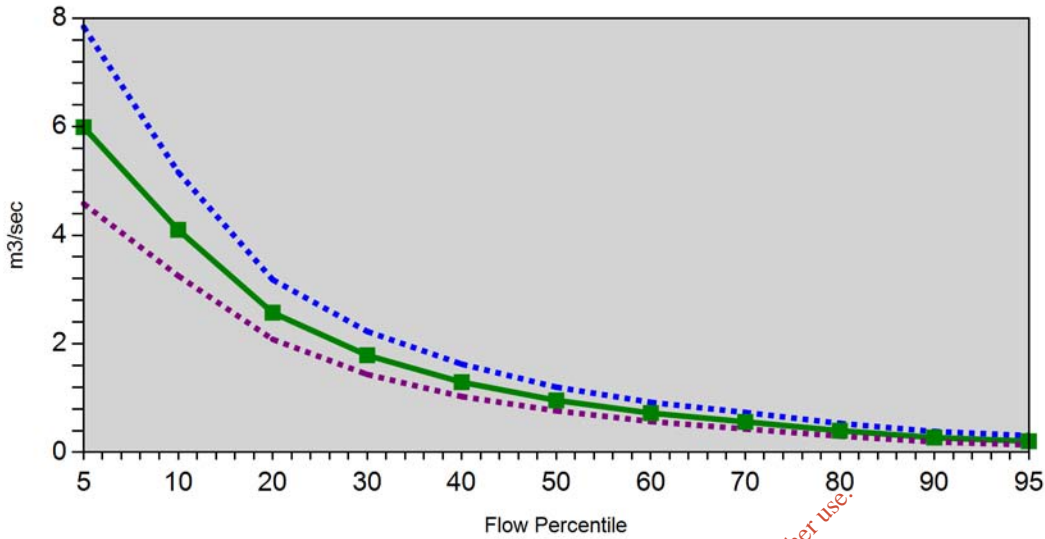


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Flow Duration Curve (Flow in m3/sec)



%ile	flow(m3/sec)	upper 95% confidence limit m3/sec	lower 95% confidence limit m3/sec
5	5.992	7.838	4.581
10	4.099	5.164	3.253
20	2.573	3.181	2.082
30	1.788	2.228	1.435
40	1.292	1.625	1.028
50	0.958	1.201	0.765
60	0.723	0.921	0.568
70	0.562	0.734	0.43
80	0.399	0.533	0.299
90	0.271	0.383	0.192
95	0.205	0.308	0.137

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Catchment Descriptors		
General		
Descriptor	Unit	Value
Area	sq km	33.7
Average Annual Rainfall (61-90)	mm/yr	1731
Stream Length	km	53.8
Drainage Density	Channel length (km)/catchment area (sqkm)	1.6
Slope	Percent Slope	16.1
FARL	Index (range 0:1)	1

Soil	
Code	% of Catchment
Poorly Drained	56.1
Well Drained	24.8
Alluvmin	4
Peat	15.1
Water	0
Made	0

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Subsoil Permeability		
Code	Explanation	% of Catchment
H	High	0
M	Moderate	2.2
L	Low	0
ML	Moderate/Low	0
NA	No Subsoil/Bare Rock	97.8

Aquifer		
Code	Explanation	% of Catchment
LG_RG	LG: Locally important sand-gravel aquifer RG: Regionally important sand-gravel aquifer	0
LL	Locally important aquifer which is moderately productive only in local zones	80.5
LM_RF	LM: Locally important aquifer which is generally moderately productive RF: Regionally important fissured bedrock aquifer	0
PU_PL	PU: Poor aquifer which is generally unproductive PL: Poor aquifer which is generally unproductive except for local zones	19.5
RKC_RK	Regionally important karstified aquifer dominated by conduit flow	0
RKD_LK	Regionally important karstified aquifer dominated by diffuse flow	0

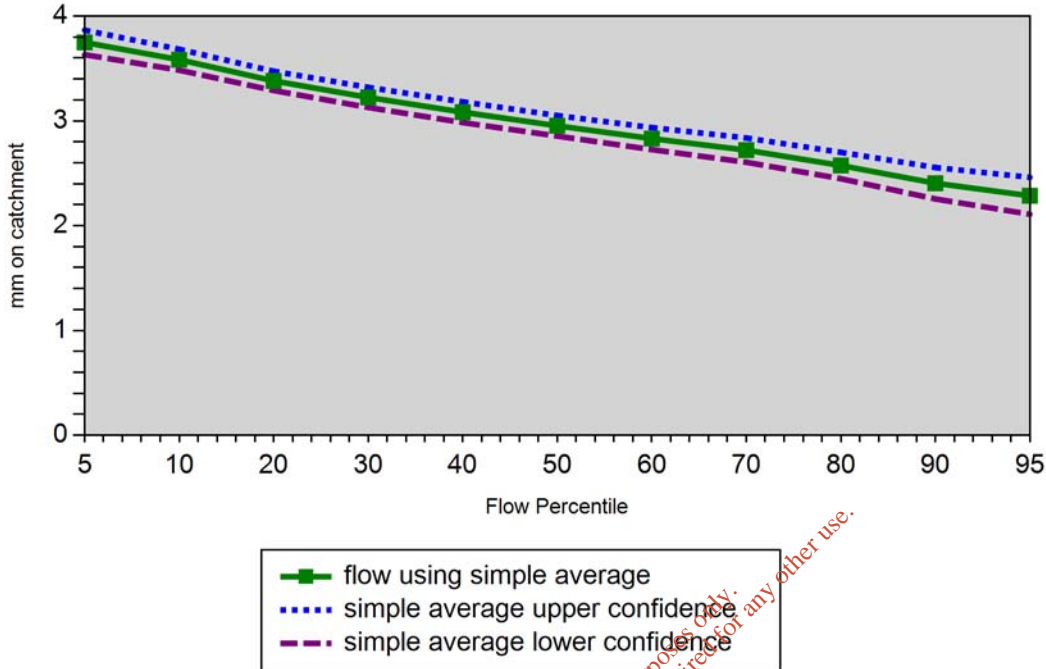
Stations in Pooling group			
%ile Flow	Station 1	Station 2	Station 3
5	21004	22039	22022
10	21004	22039	22022
20	21004	22039	22022
30	21004	22039	22022
40	21004	22039	22022
50	21004	22022	22039
60	21004	22022	22039
70	21004	22022	22039
80	21004	16013	22022
90	21004	16013	22022
95	21004	16013	22022

Disclaimer

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Flow Duration Curve (mm on catchment)



Log Flow (mm on catchment)			
%ile	mm	upper 95% confidence limit	lower 95% confidence limit
5	3.749	3.866	3.632
10	3.584	3.684	3.484
20	3.382	3.474	3.29
30	3.224	3.32	3.128
40	3.083	3.182	2.984
50	2.953	3.051	2.855
60	2.831	2.936	2.726
70	2.721	2.837	2.605
80	2.574	2.7	2.448
90	2.405	2.555	2.255
95	2.285	2.461	2.109

Disclaimer

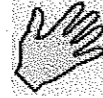
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Lake Water Quality

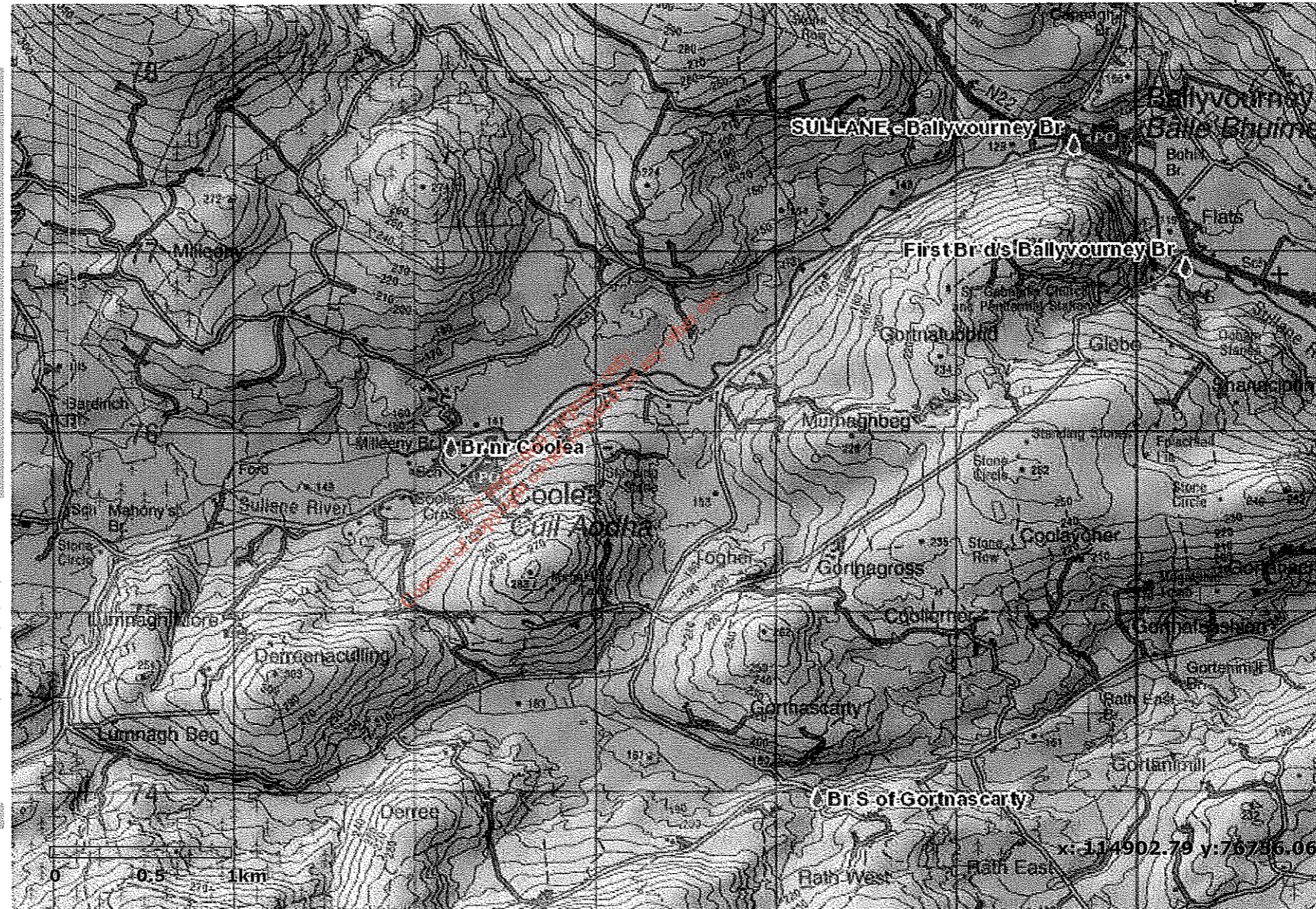
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