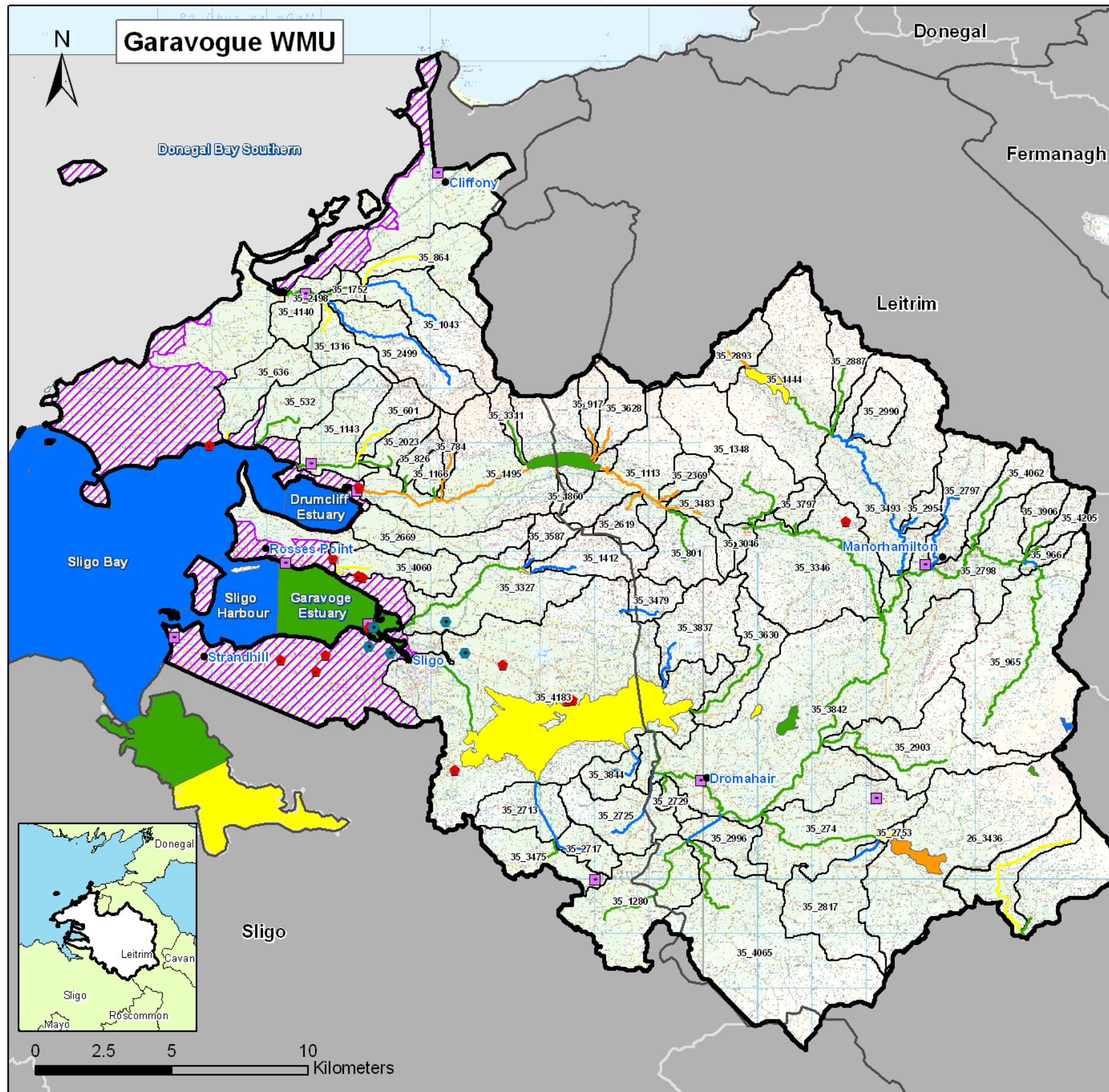

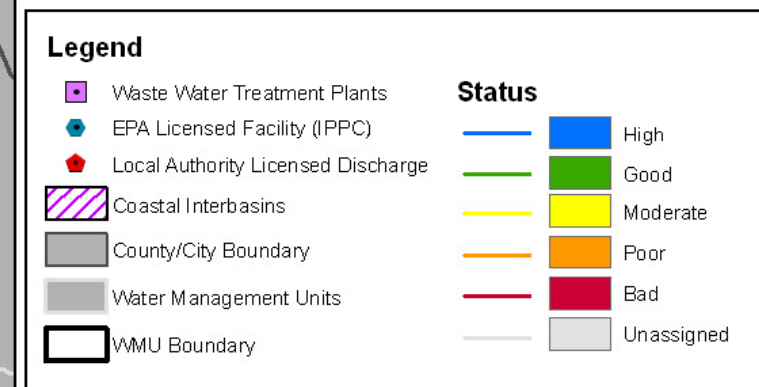


# Garavogue Water Management Unit Action Plan

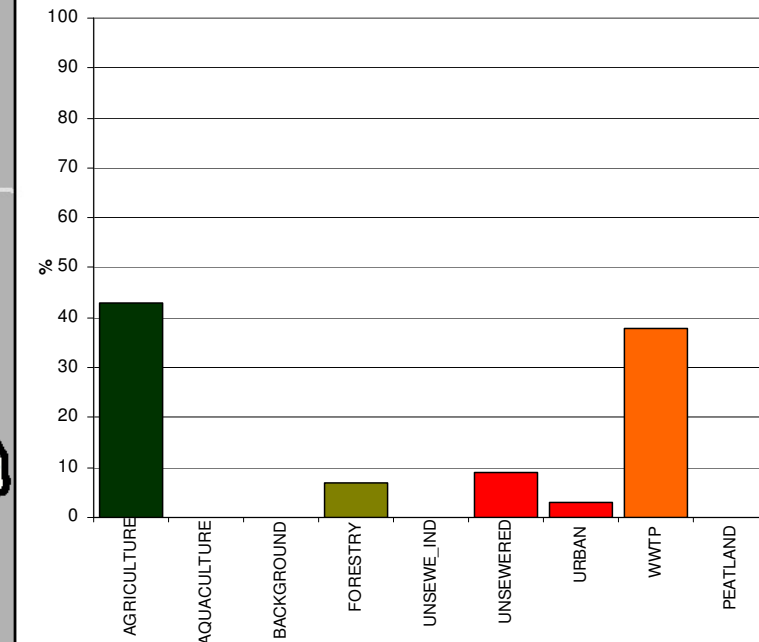
River water bodies labelled on map



<b>Garavogue Water Management Unit</b>	
<b>Area</b>	636 km <sup>2</sup>
<b>River Basin District</b>	Western RBD
<b>Main Counties</b>	Leitrim/Sligo
<b>Number of river water bodies</b>	66
<b>Number of lake water bodies</b>	10



**Sectoral Total Phosphorus Source**  
(This does not imply impact)

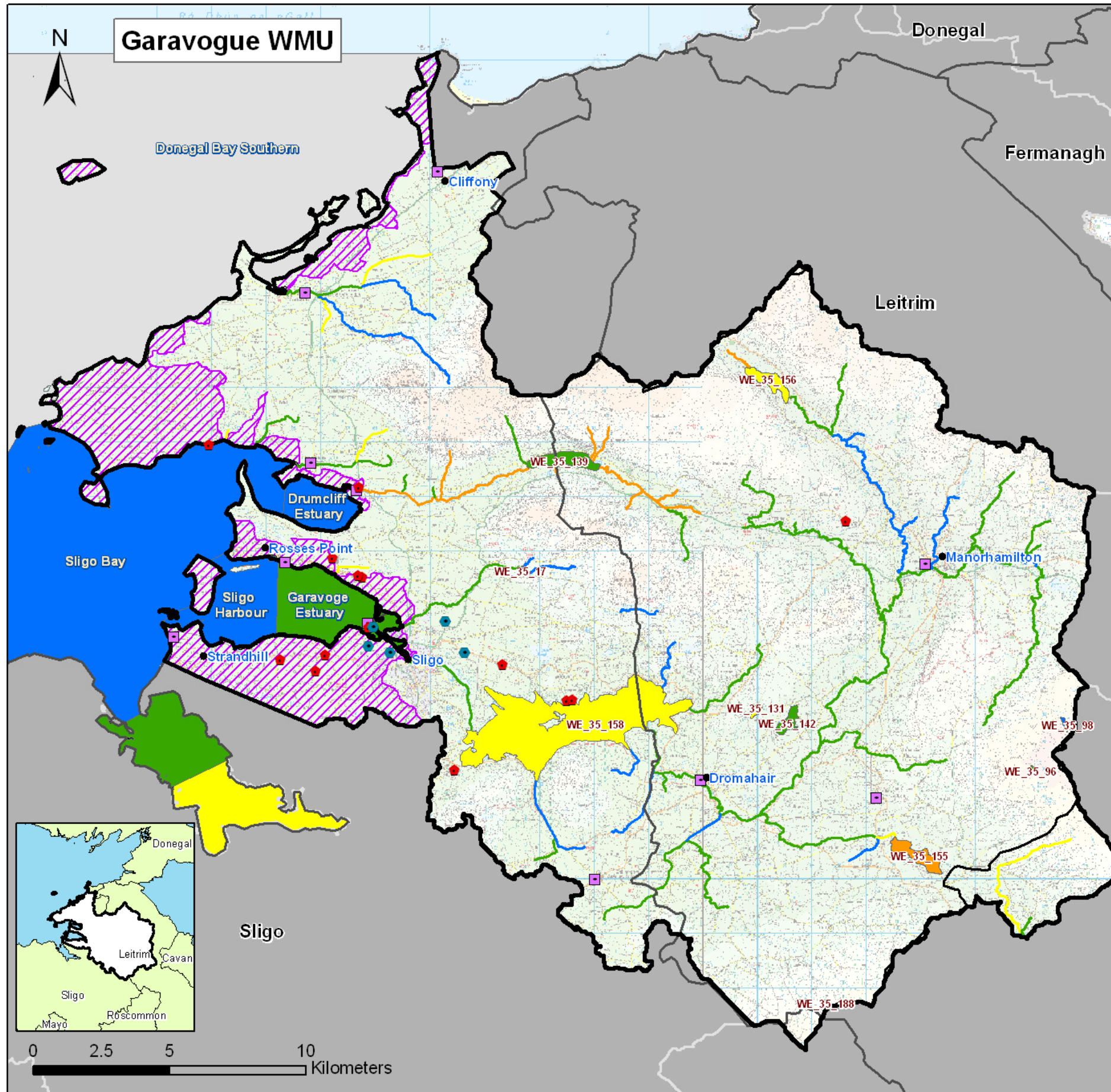


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March 2010

# Garavogue Water Management Unit Action Plan

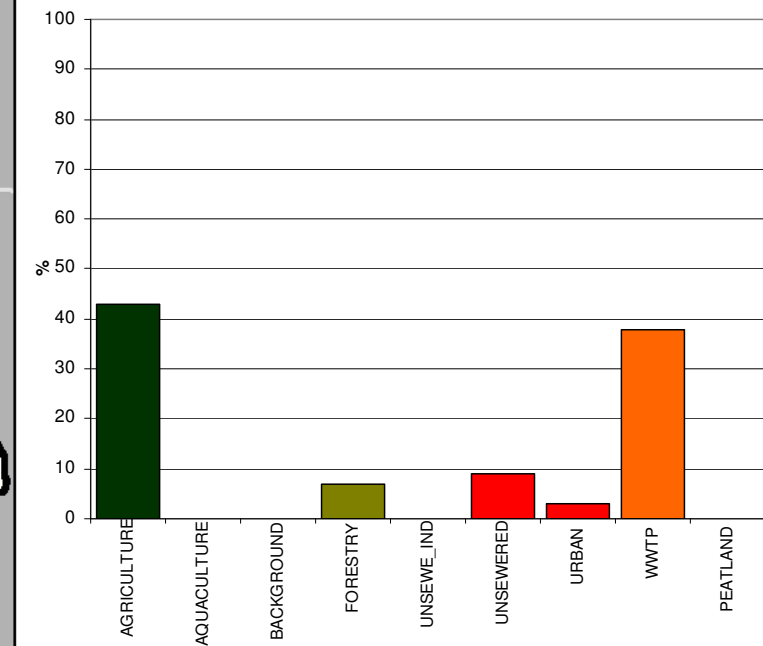
Lake water bodies labelled on map



<b>Garavogue Water Management Unit</b>	
<b>Area</b>	636 km <sup>2</sup>
<b>River Basin District</b>	Western RBD
<b>Main Counties</b>	Leitrim/Sligo
<b>Number of river water bodies</b>	66
<b>Number of lake water bodies</b>	10

Legend	
	Waste Water Treatment Plants
	EPA Licensed Facility (IPPC)
	Local Authority Licensed Discharge
	Coastal Interbasins
	County/City Boundary
	Water Management Units
	WMU Boundary
Status	
	High
	Good
	Moderate
	Poor
	Bad
	Unassigned

**Sectoral Total Phosphorus Source**  
(This does not imply impact)



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# Garavogue Water Management Unit Action Plan

## PROTECTED AREAS

**SACs** -8: Ben Bulben Gleniff and Glenade Complex, Bunduff Lough and Machair/Trawalua/Mullaghmore, Cumeen Strand/Drumcliff Bay (Sligo Bay), Arroo Mountain, Streedagh Point Dunes, Glenade Lough, Lough Gill and Boleybrack Mountain.  
**SPAs** – 5: Inishmurray SPA, Sligo/Leitrim Uplands SPA, Drumcliff Bay SPA, Ardboline Island and Horse Island SPA, Cummeen Strand SPA  
**NHA** – 2: Crockauns/Keelogyboy Bogs NHA, Dough/Thur Mountains NHA  
**pNHAs** – 13: Bunduff Lough And Machair/Trawalua/Mullaghmore, Inishmurray, Streedagh Point Dunes, Ben Bulben, Gleniff And Glenade Complex, Cummeen Strand/Drumcliff Bay (Sligo Bay), Colgagh Lough, Lough Gill, Knocknarea Mountain And Glen, Arroo Mountain, Glenade Lough, Bonet River O'Donnell'S Rock Wood, Boleybrack Mountain  
**Surface water Drinking waters** – 6: Lough Gill (Cairns Hill and Foxes Den), Gortnaleck river, Lyle stream, Kilsellagh reservoir, Kellogyboy stream (Kellogyboy Private GWS), North Leitrim Regional WSS(L Gill at Greenaun)  
**Nutrient Sensitive Surface Water (UWWT Directive)** – none  
**Bathing Water** – 1: Rosses Point.  
**Shellfish Waters** – 2: Sligo Bay and Drumcliff Bay have recently been designated as Shellfish Waters under national regulations.

## STATUS/IMPACTS

Overall status	Of the 66 rivers in this WMU 70% are at High or Good status, just under 30% are at Moderate to Poor status. Out of the 10 lakes assessed within the WMU one is at High status, 3 at Good status, 5 at Moderate status and one at Poor status.
Status elements	For rivers that are monitored within the WMU the Q Score (macroinvertebrates) dictates status. Where rivers are monitored for physico-chemical parameters they all pass the standards. Overall lake status is dictated by monitored macrophyte, nutrient and fish status combined with expert opinion in some cases. 3 of the lake status assignments within the WMU has been determined by extrapolation.
Status of the main rivers within the WMU	<p>The main rivers in the Garavogue WMU are the Bonet river system, the Grange river system and the Drumcliff river system.</p> <p>The most recent EPA status classifications for these rivers indicates that 23% of all river channel length is of High status and 61% is classed as Good. The remainder are classed at Moderate, (5%) or Poor (11%).</p> <p><b>BONET</b> – The Bonet river system has many tributaries including the Shanvaus, Cashel and Killanummery rivers. The Killanummery river is located in the south of the Garavogue WMU, the head waters of which are at Good status, leading to High status before it enters the main Bonet channel. The Cashel Stream, which also joins the main channel is at Good status, and the head water of this stream is at High status. A tributary of the Cashel, the Tillinwillin stream is at Moderate status. This stream flows from Behavel Lough, which is classed at Poor status (due to biological assessment). In the head waters of the main Bonet channel, the river flowing into Glenade Lough is at Poor status (extrapolation from similar monitored catchments). Glenade Lough itself is classed as Moderate. The next stretch of the river Bonet and its tributaries are classed as High, until it reaches the confluence of the Owenmore (Manorhamilton) and from there, to where the Bonet enter Lough Gill, the main channel and tributaries are mostly Good status. This includes the Shanvaus tributary, with some High status tributaries entering the channel also. Lackagh Lough and Carrigeencor Lough are classed at Good status and Anarry Lough is at Moderate status. Lough Gill is classed at Moderate status. All small tributaries entering Lough Gill are at either Good or High status.</p> <p><b>GARAVOGUE</b> – The Garavogue river which flows from Lough Gill is classed at Good status. It enters the sea at Sligo Harbour.</p> <p><b>DRUMCLIFF</b> – Only four sections of the Drumcliff system are at Good status – the main Drumcliff river channel and tributaries are classed at Poor. This is due to poor biological assessment and also from extrapolated land use. The head water of the Diffreen river is classed as Good. Also classed as good is a tributary flowing into Glencar Lough, which itself is also at Good status.</p> <p><b>GRANGE</b> – The head waters of the Grange river are classed as High status. A tributary classed as Moderate status inflows at Derry Bridge, and subsequently the river is classed at Good status until it enters the sea at Inishnagor.</p> <p><b>DOONOWNEY</b> – Doonowney river is classed at Moderate status and enters the sea at Drumcliff Bay</p> <p><b>CARNEY</b> – Most of the Carney river channel is classed at Good status, with one tributary classed at Moderate status. The Carney river enters the sea at Drumcliff Bay.</p> <p><b>WILLSBOROUGH STREAM</b> – The head waters of Willsborough river are classed at High status, including the Kilsellagh tributary. The main channel of the stream is classed at Good status.</p>

## PRESSURES/RISKS

Nutrient sources	Over 58% of Total Phosphorus is diffuse innature with agriculture accounting for over 40% of the TP. 38% of the TP load is from Waste water treatment plants principally from Sligo Town.
Point pressures	<p><b>WWTP</b> within WMU – 11: 3 in Leitrim: Dromahaire WWTP (stated as at construction in WSIP 07-09), Manorhamilton WTTT, Killargue WWTP and 8 in Sligo: Ballintogher WWTP, Cliffoney WWTP, Grange WWTP, Rosses Point WWTP, Strandhill WWTP, Drumcliffe WWTP, Carney WWTP and Sligo WWTP</p> <p><b>Section 4</b> Licensed Facilities – 14: , 1 in Leitrim (Quarry). 13 in Sligo – (Dairy, college, 2 residential centres, shellfish farm, domestic house, hotel, restaurant, ELV facility (Deepwater quay), quarry, 2 housing estates, car showroom &amp; garage, fuel depot)                  A visitor centre has been recently provided by Leitrim County Council at Glencar Lake with an on site wastewater treatment system                  End of Life (ELV) facility at Deepwater Quay</p> <p><b>IPPC</b> Licensed facilities - 5: 5 in Sligo (3 to sewer and a facility that produces bitumen and a facility that treats wood). Leitrim has no IPPC in Garavogue WMU.</p> <p><b>WTPs</b> – 8: Kilsellagh, Lough Gill (Carins and Foxes Den), Benbulben GWS, Castletown GWS Drum East GWS, Kellogyboy GWS and North Sligo Regional supply.</p> <p><b>Quarries:</b> There is a quarry discharging to the catchment of Lough Gill.</p>
Wastewater Treatment Plants (WWTP) and Industrial Discharges	<p><b>Ballintogher WWTP</b> – To be upgrade under small schemes -2011 currently in planning stages, to be upgraded to 350 p.e.</p> <p><b>Carney WWTP</b> – implement pollution reduction programme for shellfish waters.</p> <p><b>Drumcliff WWTP</b> – Sufficient capacity exists at present.</p> <p><b>Dromahaire WWTP</b> - risks to water quality relating to insufficient future WWTP Capacity of current plant. A new treatment plant is currently under construction at Dromahaire as part of the Leitrim Towns and Villages Sewerage Scheme Bundle 1 DBO. This new plant will be commissioned in April 2010.</p> <p><b>Manorhamilton WWTP</b> – ensure capacity of plant is not exceeded. The proposed upgrading of Manorhamilton WWTP is included in Leitrim Towns and Villages Sewerage Scheme Bundle 2, which is at Preliminary Report stage. The essential upgrading of this WWTP to meet effluent discharge standards has been included in our submission to the DoEHLG for funding under the Water Services Investment Programme 2010 – 2012.</p> <p><b>Killarga WWTP</b> - A new treatment plant is currently under construction at Killarga as part of the Leitrim Towns and Villages Sewerage Scheme Bundle 1 DBO. This new plant will be commissioned in April 2010</p> <p><b>Cliffoney WWTP</b> - risk to water quality relating to insufficient WWTP capacity. Requires investigation prior to capital works.</p> <p><b>Grange WWTP</b> - risk to water quality relating to insufficient WWTP capacity and insufficient assimilative capacity for BOD. Plant requires capital works.</p> <p><b>Rosses Point WWTP</b> - Requires investigation prior to capital works, implement pollution reduction programme for shellfish waters.</p> <p><b>Sligo WWTP</b> – Spare capacity at WWTP. This plant will be O&amp;M by AWI for 20yrs. Implement pollution reduction programme for shellfish waters, requires investigation of CSO's.</p> <p><b>Strandhill WWTP</b> - risk to water quality relating to insufficient WWTP capacity. Plant requires capital works, implement pollution reduction programme for shellfish waters.</p> <p><b>Section 4</b> - Cregg House, the Radisson &amp; a housing estate discharge to a watercourse in Cregg - there is a risk to water quality relating to insufficient assimilative capacity for BOD and nutrients.</p> <p>There is a possible risk from a quarry discharging to a stream in Aghamore.                  Section 4 - Quarry at Lurganboy – limestone extraction, cement and block making. No other risks from section 4s.</p>

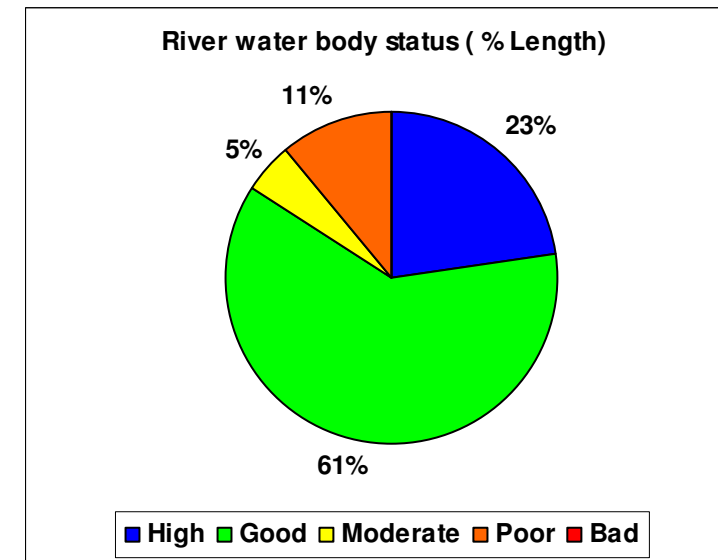
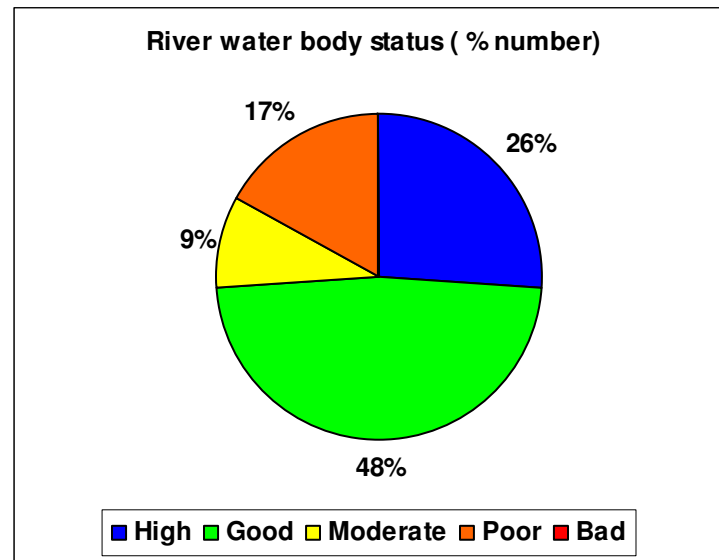
# Garavogue Water Management Unit Action Plan

PRESSURES / RISKS	
Quarries, Mines & Landfills	5 quarries within WMU: 2 water bodies at risk from quarries within WMU: IE_WE_35_2499 and IE_WE_35_3842. 3 quarries in Leitrim: Quarry at Lurganboy – limestone extraction, readymix cement and block making, WE_35_3346. Kerrigans Quarry – limestone rock, readymix cement and block making, Tates Quarry, Moneenshinnagh 2 quarries in Sligo: Aghamore & Lugnagall. Historic landfill at Finisklin (in proximity to Sligo Port) in which has been closed since the early 1990's. There is no leachate collection facility in place. Historic Landfill at Manorhamilton No mines within WMU
Agriculture	7 water bodies have been determined to be at risk from agriculture within WMU: IE_WE_35_2669, IE_WE_35_1166, IE_WE_35_1143, IE_WE_35_532, IE_WE_35_2729, IE_WE_35_2023, IE_WE_35_4060.
On-site systems	There are 6,436 OSWTS within the WMU Boundary, 4,462 OSWTS lie within 66 river water bodies. Within the river water bodies 912 OSWTS constitute a potential risk to waters because of where they are sited and constitute a risk to 11 water bodies. The remainder of OSWTS lie in the coastal area between the RWBs and the seashore and may pose a risk to estuarine and coastal water quality and protected areas. At risk RWB's: WE_35_1752, WE_35_4140, WE_35_2669, WE_35_2798, WE_35_2954, WE_35_2023, WE_35_3327, WE_35_3475, WE_35_601, WE_35_2797, WE_35_2996
Forestry	No rivers at risk from Forestry, although the Killanummery river is extensively forested (WE_35_4065) and may pose a risk for the future during any clear felling operations.
Dangerous substances	1 waterbody that may be at risk from sheep dipping activities within the WMU: IE_WE_35_3311. (Sligo) Further investigation into use of old sheep dip tanks would be advisable in the upland areas. Sligo: There is a possible risk from the wood treatment facility (IPPC), the ELV site, the old landfill site and an old IPPC licenced site.
Morphology	7 water bodies have been determined to be at risk from morphology within this WMU: IE_WE_35_3842, IE_WE_35_274, IE_WE_35_2753, IE_WE_35_3587, IE_WE_35_3327, IE_WE_35_1412, IE_WE_35_2996 Possible risk to the Garavogue River from Morphology.
Abstractions	7 water bodies have been determined to be at risk from abstraction within WMU: IE_WE_35_1752, IE_WE_35_4140, IE_WE_35_1043, IE_WE_35_2498, IE_WE_35_2499, IE_WE_35_3327, IE_WE_35_4183 Drinking water supply sources have ceased at L Anarry, Largin, Brackery More, Brackery Beg and Leckaun. Drinking water sources still in operation in the catchment are: North Leitrim Regional WSS(L Gill at Greenaun), Fivemilebourne PWS (mountain spring), Kinlough/Tullaghan PWS (Erriff Spring).
Other	There are no HMWB or AWB within the WMU.

SELECTED ACTION PROGRAMME	
<i>NB All relevant basic measures and general supplementary measures/surveys apply</i>	
Point Sources	WWTP licensing and upgrades will be applied where identified in the needs assessment. Grange WWTP has been prioritised for capital works upgrades as this scheme is necessary to ensure compliance with the Water Framework Directive. Cliffoney and Strandhill WWTP have also been prioritised as they have either inadequate WWTP capacity or insufficient assimilative capacity for BOD, however the water quality data available would suggest that they are not having a significant impact on water quality. Cliffoney, Grange, Strandhill and Rosses Point were included in the WSIP for 2007-2009 and have all been prioritised under the 2009 needs assessment for inclusion on the WSIP 2010-2012. Investigation of sewage and trade discharges and licence review where appropriate will also be carried out. T The following Point source supplementary measures have been suggested for certain river water bodies within the WMU for municipal and industrial pressures: Development control, verification of risk, decision making tools, and relocation of outfall.
Diffuse Sources	Particular measures will be required to address diffuse pollution pressures from agriculture such as the Good Agricultural Practices Regulations investigations and enforcement. Supplementary measures apply within WMU for septic tanks (OSWTS) including compliance with the new binding EPA Code of Practice for Wastewater Treatment Systems and Disposal Systems. In relation to existing unsewered properties, improvements are required regarding the operational performance, maintenance and monitoring arrangements of septic tanks and other on-site waste water treatment systems serving such properties. In response, the Minister for Environment, Heritage and Local Government intends to bring forward and consult on proposals for legislation during 2010. It is intended that this legislation will be in place by quarter 3 of 2010. The proposed legislation will provide standards for the performance, operation and maintenance of septic tanks and similar on-site wastewater treatment systems. It will also provide for the monitoring and inspection of the performance of such treatment systems and will set out the responsibilities of households served by those systems, including requirements to carry out remedial actions where necessary
Other	Supplementary measures that apply for morphology include: channel investigation, so that any impact on status caused by past drainage schemes in the WMU can be determined and addressed. Compliance with the Bathing Water Directive will also be required. Protection of drinking waters and future abstraction licensing control will also be important basic measures required to ensure good water quality. Further investigation of quarry risk within the WMU is needed before measures can be identified.
OBJECTIVES	
Good status 2015	All water bodies within the WMU must achieve Good status by 2015 unless a specific alternative objective is set out below.
Alternative Objectives	<b>Extensions Agriculture (Phosphorous Karst Groundwater) (2021)</b> IE_WE_35_636, IE_WE_35_864, IE_WE_35_1316, IE_WE_35_4060, IE_WE_35_1495, IE_WE_35_784, IE_WE_35_2669

# Garavogue Water Management Unit Action Plan

## Status of river water bodies within the WMU



Member State Code	Monitored Y (Extrapolated N)	Donor Waterbody	Biological Elements				Supporting Elements				Chemical Status	Protected Areas				Objective	Date objective to be achieved
			Macroinvertebrates (Q)	FreshWater Pearl Mussel	Fish	Phytoplankton (Diatoms)	Morphology	Specific Pollutants	Physio-chemical	Ecological Status		Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Drinking Water		
WE_35_1043	N	WE_35_2499								H		Y	Y		Y	HES	2009
WE_35_1113	Y									P		Y				GES	2015
WE_35_1143	N	WE_35_1662								G		Y	Y			GES	2009
WE_35_1166	N	WE_35_2013								G		Y	Y			GES	2009
WE_35_1280	N	WE_35_4065								G						GES	2009
WE_35_1316	N	WE_35_636								M		Y	Y			GES	2021
WE_35_1348	N	WE_35_1444								G		Y				GES	2009
WE_35_1412	Y		H							H						HES	2009
WE_35_1444	Y		G						G	G		Y	Y			GES	2009
WE_35_1495	Y		P						H	P		Y	Y			GES	2021
WE_35_1752	N	WE_35_4140								G						GES	2009
WE_35_1860	N	WE_35_1113								P			Y			GES	2015
WE_35_2023	N	WE_35_1662								G		Y	Y			GES	2009
WE_35_2369	N	WE_35_1113								P						GES	2015
WE_35_2498	N	WE_35_4140								G						GES	2009
WE_35_2499	Y		H						H	H		Y	Y		Y	HES	2009
WE_35_2619	N	WE_35_1113								P						GES	2015

# Garavogue Water Management Unit Action Plan

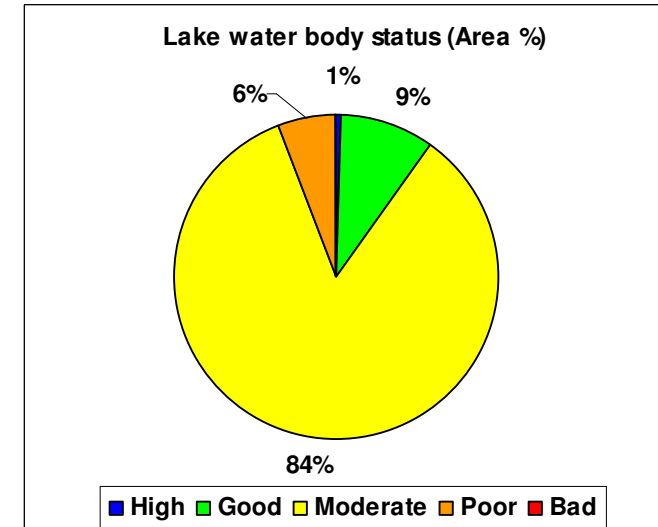
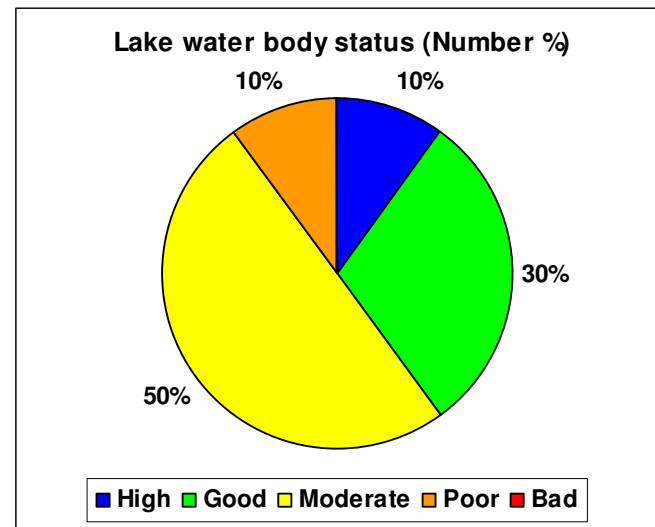
IE_WE_Garravogue																		
Member State Code	Monitored Y (Extrapolated N)	Donor Waterbody	Biological Elements				Supporting Elements				Ecological Status	Chemical Status	Protected Areas				Objective	Date objective to be achieved
			Macrobenthos (Q)	Freshwater Pearl Mussel	Fish	Phytoplankton (Diatoms)	Morphology	Specific Pollutants	Physio-chemical	Special Area of Conservation			Special Protection Area	Nutrient Sensitive Waters	Drinking Water			
WE_35_2669	N	WE_35_938									P		Y	Y		GES	2021	
WE_35_2713	N	WE_35_2996									H		Y			HES	2009	
WE_35_2717	N	WE_35_2996									H					HES	2009	
WE_35_2725	N	WE_35_2996									H					HES	2009	
WE_35_2729	N	WE_35_2013									G					GES	2009	
WE_35_274	Y		G								G					GES	2009	
WE_35_2753	Y		M								M					GES	2015	
WE_35_2797	Y		H								H					HES	2009	
WE_35_2798	Y		G								G	Y				GES	2009	
WE_35_2817	Y		H								H					HES	2009	
WE_35_2887	N	WE_35_1444									G	Y				GES	2009	
WE_35_2893	N	WE_35_1113									P	Y	Y			GES	2015	
WE_35_2903	N	WE_35_3842									G	Y				GES	2009	
WE_35_2954	N	WE_34_3552									H					HES	2009	
WE_35_2990	N	WE_35_3493									H	Y				HES	2009	
WE_35_2996	Y		H								H	Y				HES	2009	
WE_35_3046	N	WE_35_3346									G					GES	2009	
WE_35_3311	N	WE_35_2013									G	Y	Y			GES	2009	
WE_35_3327	Y		G						H		G		Y			GES	2009	
WE_35_3346	Y		G								G	Y				GES	2009	
WE_35_3475	N	WE_35_4065									G					GES	2009	
WE_35_3479	N	WE_35_1412									H			Y		HES	2009	
WE_35_3483	N	WE_35_1113									P					GES	2015	
WE_35_3493	Y		H								H	Y				HES	2009	
WE_35_3587	N	WE_35_1412									H		Y			HES	2009	
WE_35_3628	N	WE_35_1113									P	Y				GES	2015	
WE_35_3630	N	WE_35_274									G	Y				GES	2009	
WE_35_3797	N	WE_35_1444									G					GES	2009	
WE_35_3837	N	WE_35_1412									H	Y				HES	2009	
WE_35_3842	Y		G						H		G	Y				GES	2009	

# Garavogue Water Management Unit Action Plan

IE_WE_Garravogue																		
Member State Code	Monitored Y (Extrapolated N)	Donor Waterbody	Biological Elements				Supporting Elements				Ecological Status	Chemical Status	Protected Areas				Objective	Date objective to be achieved
			Macroinvertebrates (Q)	FreshWater Pearl Mussel	Fish	Phytobenthos (Diatoms)	Morphology	Specific Pollutants	Physio-chemical	Special Area of Conservation			Special Protection Area	Nutrient Sensitive Waters	Drinking Water			
WE_35_3844	N	WE_34_3552								H		Y				HES	2009	
WE_35_3906	N	WE_35_1444								G					Y	GES	2009	
WE_35_4060	N	WE_35_207								M			Y			GES	2021	
WE_35_4062	N	WE_35_1444								G						GES	2009	
WE_35_4065	Y		G							G		Y				GES	2009	
WE_35_4140	Y		G						G	G						GES	2009	
WE_35_4183	Y		H				G		G	G		Y			Y	GES	2009	
WE_35_4205	N	WE_35_1444								G						GES	2009	
WE_35_532	N	WE_35_1662								G			Y			GES	2009	
WE_35_601	N	WE_35_636								M		Y	Y			GES	2015	
WE_35_636	Y		M						H	M			Y			GES	2021	
WE_35_784	N	WE_35_1495								P		Y	Y			GES	2021	
WE_35_801	N	WE_35_1444								G						GES	2009	
WE_35_826	N	WE_35_3327								G		Y	Y			GES	2009	
WE_35_864	N	WE_35_636								M		Y				GES	2021	
WE_35_917	N	WE_35_1113								P		Y				GES	2015	
WE_35_965	N	WE_35_3842								G		Y			Y	GES	2009	
WE_35_966	Y		H							H						HES	2009	

# Garavogue Water Management Unit Action Plan

## Status of lake water bodies within WMU



IE_WE_Garravogue																	
Member State Code	Name	Monitored Y (Extrapolated N)	Biological Elements			Supporting Elements			Ecological Status	Chemical Status	Protected Areas					Objective	Date objective to be achieved
			Macrophytes	Chlorophyll	Fish	Morphology	Nutrient Enrichment	Physico Chemical			Special Area of Conservation	Special Protection Area	Nutrient Sensitive Waters	Bathing Water	Drinking Water		
WE_35_131	Anarry ( Lough )	Y	G	H			M	M	M							GES	2015
WE_35_139	Glencar Lough	Y	H	H			G	G	G		Y					GES	2009
WE_35_142	Carrigeencor Lough	Y	G			G			G							GES	2009
WE_35_155	Belhavel Lough	Y	P	M			M	M	P							GES	2021
WE_35_156	Glenade Lough	Y	G	H			G	G	M		Y					GES	2015
WE_35_158	Gill ( Lough )	Y	M	H	M		G	G	M		Y					GES	2015
WE_35_17	Kilsellagh	Y	M	H			G	G	M					Y		GES	2015
WE_35_188	Nacroagh (Lough)	N							M					Y		GES	2015
WE_35_96	Lackagh Lough	N							G		Y			Y		GES	2009
WE_35_98	Kip ( Lough )	N							H		Y					HES	2009