



Drumcomoge Priority Area for Action

Referral to Tipperary County Council – Pipe Discharging
to Surface Waters in Emly

Introduction:

The Drumcomoge_010 is the sole waterbody in the Drumcomoge Priority Area for Action (PAA). For the WFD Cycle 2, the waterbody had unassigned ecological status and was *At Risk*. Extrapolated ecological status (2022) designates this PAA as being at poor condition.

Initial characterisation deemed agriculture (farmyards) to be the only significant pressure and urban waste water (Knocklong) as not significant. Proposed further characterisation required Investigative Assessment (IA) 7 (Multiple Sources in Multiple Areas) and IA6 (Multiple Sources in Large Urban Area).

Following completion of the desk study and engaging with the local communities and farmers in the PAA, Local Catchment Assessment (LCA) was undertaken between July 2020 and January 2022. Initially, field work involved stream walks and chemistry sampling at a coarse spatial level. However, as field work progressed a finer spatial level of investigation was deemed necessary due to the issues arising throughout the waterbody.

LCA work started in the area south of Emly in September 2021. This area has high drainage density where channelisation has resulted in over deepened and straightened channels. Initial observations (10/9/2021) in some channels i.e., low dissolved oxygen conditions at Site 15 indicated that further work was necessary in this area. Laboratory analysis later confirmed that there was elevated orthophosphate and ammonium concentrations present.

Results:

The location of the field sites visited are shown on the map in Figure 1 for the broader Drumcomoge PAA and the red box indicates the vicinity of the referral area. Figure 2 shows the outfall location (red triangle on map) where the assessment was focussed on in the vicinity of Emly. Field parameters (temperature, pH, dissolved oxygen, electrical conductivity and total dissolved solids) and nutrient analysis results are presented in Table 1.

Three further field visits were undertaken between September 20th, 2021 and January 26th, 2022 as outlined in Table 1. A pipe was observed discharging to the stream upstream of Site 24 on the first visit. The same pipe was submerged during the November visit due to high flow conditions in the stream so no discharge could be confirmed. In the January visit the pipe was not discharging and the water level in the stream was low. Anoxic conditions and sewage fungus were present and continuous on the stream substrate from the discharge point to 400m downstream on all three visits (Photos 1 – 4). The receiving stream is first order and approximately 2m wide.

Laboratory analysis results showed excessive levels of ammonium and orthophosphate in September and November sampling rounds at Site 24. Orthophosphate and ammonium are also issues upstream as indicated by nutrient concentration at Site 25 but are of a much lower magnitude. As the pipe was not discharging in January the difference between the upstream and downstream nutrient concentrations was negligible (Table 1). The issues at Site 25 have been communicated to ASSAP in a separate referral.

Orthophosphate loading estimates indicate that this discharge is significant in low flow conditions at the waterbody outlet (Site 1) and not significant in high flow. While overall it may not be acting as a significant pressure at the outlet of Drumcomoge_010, it does pose a public health risk, particularly in the vicinity of the discharge.

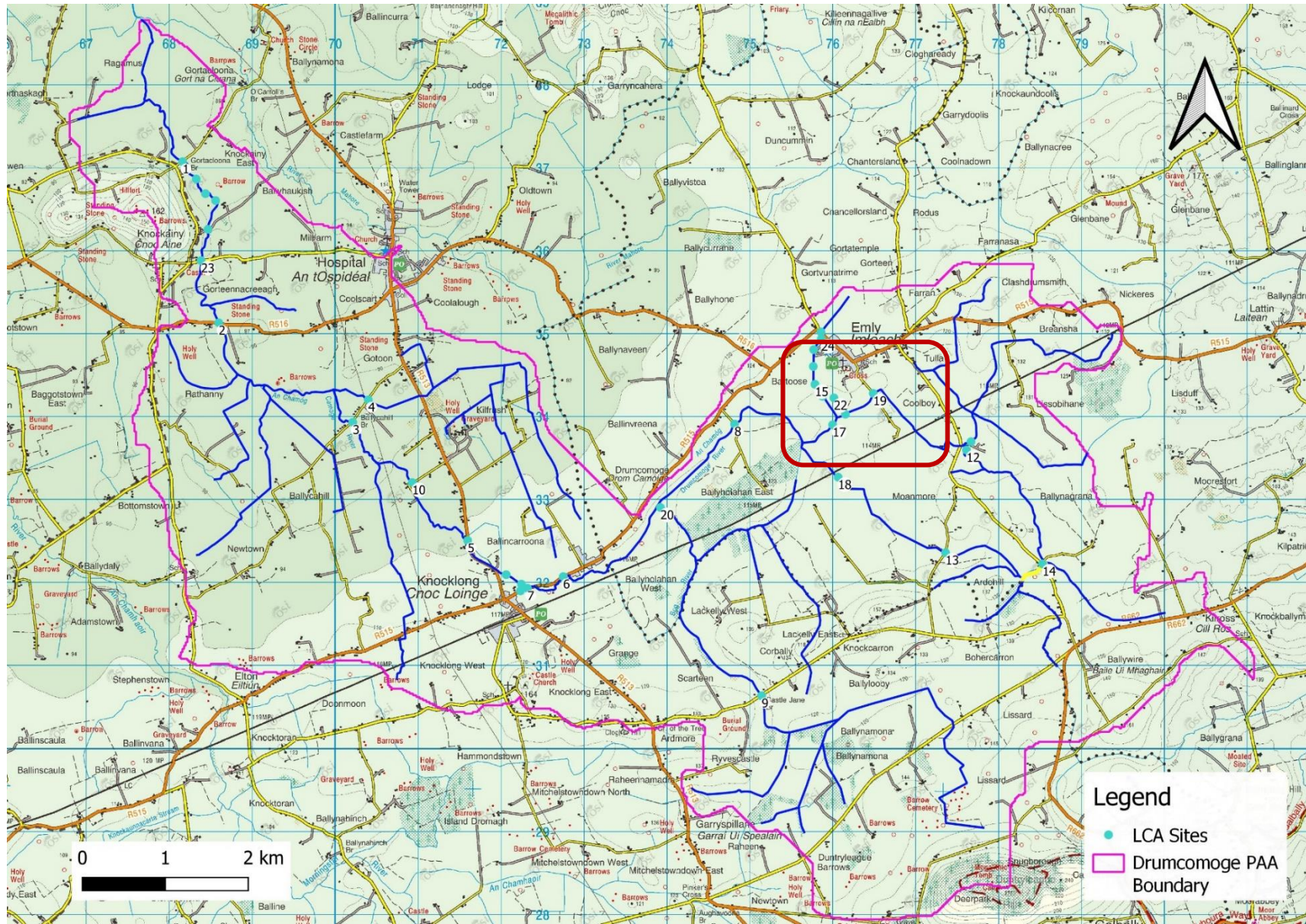


Figure 1: Map shows the Drumcomoge PAA and local catchment assessment sites.



Figure 2: Map shows the outfall location and the local catchment assessment sites in the vicinity of Emly.

Table 1: Field parameters and flow, nutrient and orthophosphate loading results.

Site	Date	Assessors	Co-ordinates		Assessments	SSIS	Time	Nutrients		Physical						Flow		Load
			Longitude	Latitude				Ammonia NH ₃ -N (mg/l)	Ortho-Phosphate PO ₄ -P (mg/l)	Temp°C	DO (%)	DO (mg/l)	pH	Cond. (µS)	TDS (ppm)	Condition & percentile	Rate (m ³ /s)	Ortho-Phosphate (kg/day)
Site 25 100m upstream from Site 24	20/09/2021	DJL & AD	-8.355870	52.466710	Nutrient & Physical Chemistry	Not assessed Unsuitable habitats	10:15	0.05	0.238	14.4	48.8	4.98	7.62	705	355	Low (Q95)	0.01	0.2
	10:00						0.14	0.195	10.2	50.1	5.41	7.41	656	329	High (Q10)	0.15	2.5	
	11:10						0.05	0.189	7.9	75	8.85	7.80	717	363	Low (Q70)	0.01	0.2	
Site 24 Referral Point	20/09/2021	DJL & AD	-8.355603	52.466076	Nutrient & Physical Chemistry	Not assessed Unsuitable habitats	10:30	13.7	1.409	14.4	46.1	4.66	7.60	706	351	Low (Q95)	0.01	1.2
	10:15						1.39	0.310	9.6	47.4	5.69	7.48	668	326	High (Q10)	0.15	4.0	
	11:19						0.07	0.182	7.2	69.4	8.43	7.82	719	359	Low (Q70)	0.01	0.2	
Site 15 600m d/s from Site 24	10/09/2021	DJL & TD	-8.356888	52.460818	Nutrient & Physical Chemistry	Not assessed Unsuitable habitats	15:15	4.81	0.986	18.4	9.0	0.84	7.45	627	313	Low (Q95)	0.01	0.9
Site 1 Waterbody Outlet	20/09/2021	DJL & AD	-8.469886	52.484592	Nutrient & Physical Chemistry	Not assessed Unsuitable habitats	15:00	< 0.04	0.154	No data						Low (Q95)	0.18	2.4
	15:30						< 0.04	0.168	9.7	83.9	9.37	7.92	557	279	High (Q10)	2.40	34.9	
	15:33						0.040	0.136	8.9	107	12.5	8.4	692	345	Low (Q70)	0.47	5.5	





Photo 3 (September 2021)



Photo 4 (September 2021)