

## **Curraghinalt and Pollanroe Burns: Note on DGL survey work relating to fisheries habitat and wider aquatic/terrestrial ecology**

**23 February 2021**

DGL has undertaken the following surveys within the vicinity of the Pollanroe Burn and Curraghinalt Burn in relation to the fisheries habitat and wider aquatic/terrestrial ecology:

The following reports deal with both watercourses:

- Fisheries Assessment (2013) (referenced at Appendix C8 (Annex L) of ES - 2017).
- Fisheries and River Habitat Assessment (2015) (Appendix C8 (Annex L) of ES - 2017).
- Biological Water Quality Monitoring (2015-2020) (Appendix C8 (Annex P) of ES 2017 and Appendix 02 of Appendix C8 to 2<sup>nd</sup> ES Addendum 2019).
- Surface Water Baseline Report (2020) (Appendix C3 of the 2nd addendum).

The following additional reports deal with the Pollanroe Burn:

- Otter Survey (2015/16) (Appendix C8 (Annex G) of ES and Appendix 01 of Appendix C8 to 2<sup>nd</sup> ES Addendum 2019).
- Phase 1 Habitat Survey and Phase 2 Vegetation Survey (2015/16) (Appendix C8 (Annex C) of ES).
- Fluvial Geomorphology Survey (2016) (Appendix C1 of ES).

The following additional report deals with the Curraghinalt Burn:

- Ecological Assessment of Flora and Fauna (2012) (submitted with planning application for exploration activities in 2013).

Key conclusions from each report (in date order) are set out below.

### **1. Ecological Assessment of Flora and Fauna (2012) (Curraghinalt)**

The Curraghinalt valley was surveyed and detailed Target Notes (TN) and photographs were taken. The Curraghinalt Burn was noted to be a small and shallow stream with its headwaters taking water from the moorland area down the steep valley side before joining the Owenkillew River (TN5) and that Water levels in the burn fluctuate widely and can rapidly rise during and immediately after rainfall events.



Curraghinalt Burn TN5 Photograph

## **2. Fisheries Assessment (2012 to 2013) (Curraghinalt and Pollanroe)**

13 km of the Owenkillew River between Glenhull Bridge to Gortin was surveyed and 9.9 km of the Owenreagh River from Greencastle to the confluence with the Owenkillew was surveyed.

The fisheries habitat survey undertaken was based on the Life Cycle Unit Method (Page 16, Section 6.2) and the detailed fisheries habitat assessment did not identify the Pollanroe Burn (Page 8, Figure 6: River Section 6) nor the Curraghinalt Burn (Page 8, Figure 6: River Section 2b) as being suitable for salmonid fish.

## **3. Fisheries and River Habitat Assessment (2015) (Curraghinalt and Pollanroe)**

SLR conducted a desk-based review in June 2015 of the existing fisheries status of the Owenkillew and Owenreagh catchments (Page 4, Section 2.2). This review was supported by previous studies undertaken within the catchment (Page 8, Table 1) and via Loughs Agency publications. The 2015 survey re-assessed certain sections previously assessed to establish if any changes in baseline conditions had occurred since the previous survey in 2013. The Pollanroe Burn and Curraghinalt Burn were screened out from further assessment due to their general unsuitability for salmonids and it was considered that they would not be subject to any detailed fisheries habitat assessment but would be assessed on site as part of other ecological fieldwork, i.e. Phase I Habitat Survey (Page 4, Section 2.2, Para 4). A total length of 30.7 km of river channel has been subject to fisheries and river habitat assessment between 2012 and 2015.

## **4. Otter Survey (2015 to 2016) (Pollanroe).**

A detailed otter survey of the Pollanroe Burn was carried out on 28th April 2015 and re-surveyed on 16th March 2016 (Page 2, Section 2.3) and again in 2018. The length of the Pollanroe Burn was walked as part of this assessment. The key observation from this survey was that the Pollanroe Burn does not appear to support any fish species based on the field observations made as part of the otter survey, and other surveys carried out on the Pollanroe Burn as part of the wider ecological baseline e.g. river macroinvertebrate sampling (Page 9, Section 3.2.3, Para 2).

## **5. Phase 1 Habitat Survey & Phase 2 Vegetation Survey (2015/16) (Pollanroe)**

The Pollanroe valley was surveyed and detailed Target Notes (TN) and photographs were taken in relation to the Pollanroe Burn (Page 16, Section 3.3.5). The relevant extracts are below:

Target Note 132 (Appendix 01, Page 144) describes the Pollanroe Burn as follows:

*Section of the Pollanroe Burn with a mean channel width of 1m at normal water levels and substrate consisting of cobbles (90%) and gravels (10%) with ochre visible. The channel supports no vegetation with the banks dominated by grassland communities forming an extension to the adjacent fields.*

Target Note 133 (Appendix 01, Page 145) describes the Pollanroe Burn as follows:

*Section of the Pollanroe Burn that has a mean channel width 1.5m and substrate consisting of cobbles (90%) and gravels (10%) that flows through a steep ravine with some vertical cliff faces before emerging at TN39. The ravine supports dense willow dominated scrub at its northern*

*end that grades into an ash dominated woodland with a good diversity of ground and field species many of which are ancient woodland indicator species.*

Target Note 134 (Appendix 01, Page 147) describes the Pollanroe Burn as follows:

*A small stream with a mean channel width of 1m at normal water levels and a substrate comprised of cobbles (80%), gravels (10%) and silt (10%). The channel is largely devoid of vegetation except for a small stand of lesser spearwort. The banks are dominated by hedgerows.*

## **6. Fluvial Geomorphology Survey (2016) (Pollanroe)**

The Pollanroe Burn was surveyed upstream from the confluence with the Owenreagh River on the 22<sup>nd</sup> January 2016 (Page 29, Section 2) and the report contains the following photographs.



Page 31 Photograph 5 (looking downstream at the confluence with the Owenreagh River)



Page 31 Photograph 6

## **7. Biological Water Quality Monitoring (2015-2020) (Curraghinalt and Pollanroe)**

The river invertebrate sampling location for the Curraghinalt Burn (SLR-Ok06) is in the Owenkillew River downstream of confluence of Curraghinalt Burn (Page 2, Section 2.1, Table 1). The selection of this site is because the substrate, water depth and habitat within the Curraghinalt Burn is unsuitable to be sampled via a standard biologist's kick-sample net.

The following photograph taken during the River Habitat surveys in 2020 shows the Curraghinalt Burn flowing into the Owenkillew River and the height difference between the bed of the burn and the Owenkillew River is circa 2m.



Confluence of the Curraghinalt Burn with the Owenkillew River

The river invertebrate sampling location for the Pollanroe Burn (SLR-Or04) is upstream of the Pollanroe Bridge (Page 2, Section 2.1, Table 1). It is a 1m wide section of watercourse consisting of a series of riffles and a consolidated bed of cobble 60%, gravels 30% and sand 10%. The site has a mean depth of 20cm. Ochre is evident, but the levels vary considerably. The site supports no aquatic or marginal vegetation (Page 9, Table 4: Description of Sampling Sites).



Pollanroe Burn looking downstream to Pollanroe Bridge

## **8. Surface Water Baseline Report (2020)(Curraghinalt and Pollanroe**

This report provides an update to the original project baseline report in the ES and covers flow monitoring for the period from September 2016 to end January 2020 (Page 1, Section 1, Para 2).

There are two sampling locations along the Curraghinalt Burn: SW02 located in the upstream stretch and SW04 located in the downstream stretch, below the outfall pipe from the existing water treatment plant (Page 74, Section 10.5, Para 1).

There are two sampling locations along the Pollanroe Burn: SWN05/SW25 located at the Pollanroe Bridge and SWN08/SW28 located upstream of the bridge within the proposed infrastructure area (Page 128, Section 12.7, Para 2).

Surface water quality summaries for dissolved metals are given in the Curraghinalt Burn (Page 78) and Pollanroe Burn (page 131). These demonstrate that in the majority of cases, concentrations of metals are below PGVs; however, Iron exceeds the PGV in the Curraghinalt Burn and Pollanroe Burn. These levels, along with the observations of iron ochre in both burns demonstrates that the water is unsuitable for salmonid fish.

In additions there is data in respect of flow. Flow monitoring station FLO1 is positioned on the upstream face of Atty Bridge, on the Curraghinalt Burn which is described as highly mobile with evidence of small and large rocks/boulders moving down the watercourse between site visits (Page 7, Section 3.1, Para 1)

Flow monitoring station FLO13 is located on the upstream face of Camcosy Road bridge on the Pollanroe Burn (Page 35, Section 3.1, Para 1).

The Pollanroe Burn data indicates that:

- I. The Pollanroe Burn is 'flashy' in nature and responds quickly to rainfall events.
- II. During high flow periods water velocities would be expected to be high; at least 1 to 2 m/s.
- III. After rainfall flows and water levels within the Pollanroe rapidly fall with depths <0.1m common for long periods in the winter, as shown by gauged data and site observations.
- IV. depths in the key salmonid fish spawning months (November to January) are regularly below 0.1m. This observation is supported by the 2016 Fluvial Geomorphology Survey (see above) and the bed of the Pollanroe Burn can be clearly seen within the site audit photographs.
- V. The alluvial fan formed has elevated the bed level of the Pollanroe Burn significantly above the Owenreagh River to the extent that there is a minimum water level difference at the confluence between the river and the burn of 1m.
- VI. The 'perched' nature of the Pollanroe Burn above the Owenreagh River coupled with the shallow nature of the Pollanroe Burn (water depth circa 0.05 to 0.1 m), indicates a constant barrier to fish migration into the Pollanroe Burn from the Owenreagh River.

The Curraghinalt Burn data indicates that:

- I. The Curraghinalt Burn is 'flashy' in nature and responds quickly to rainfall events.
- II. During high flow periods water velocities would be expected to be high; at least 2 m/s.
- III. After rainfall flows and water levels within the Curraghinalt rapidly fall with depths <0.1m common for long periods in the winter, as shown by gauged data and site observations.
- IV. The 'perched' nature of the Curraghinalt Burn above the Owenkillew River (2m) coupled with the shallow nature of the Curraghinalt Burn (water depth circa 0.1 m), indicates that there is a constant barrier to fish migration into the Curraghinalt Burn from the Owenkillew River.