Camlin Priority Area for Action-Desk Study Summary

Below, we summarise the desk study findings for the Camlin Priority Area for Action (PAA), County Longford. Desk study reports are, as the name suggests, written at our desks. To write these reports, we use information about each of the rivers that we assess. This is a water based assessment at a particular point in time (up to March 2020) to identify the issues and pressures. We get our information from:

- The Environmental Protection Agency
- Local authorities
- Inland Fisheries Ireland
- Irish Water
- Other public agencies

It also includes information learned from the public at a local community meeting, which was held in The Temperance Hall, Newstreet, Longford on the 22nd November 2018.

In our desk study reports, we tell you about a particular river, lake, or coastal waters:

- **quality**–how the water quality has changed over the past 3–6 years
- **importance–**for example, we at if it is water used for drinking water, and if there are any rare plants or and animals in it, we need to protect
- **impacts** from human activity–here we focus on impacts that damage water quality such as wastewater treatment, agriculture, forestry, physical changes to the water

We complete desk studies first before starting our field-based assessments or local catchment assessments (LCAs). The accompanying LCA report contains the most up-to-date information on results from these assessments. This desk study was written in 2019-2020.

1. Background and Location

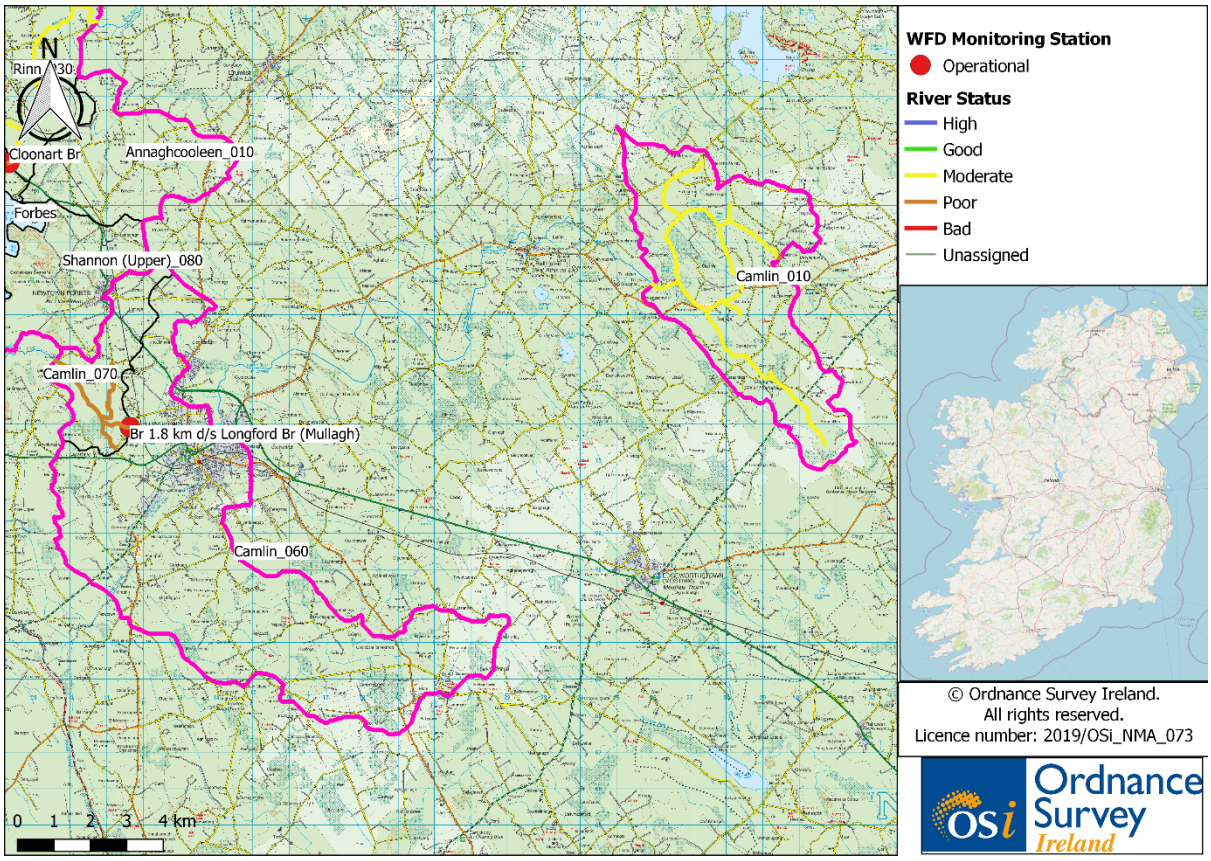
LAWPRO catchment scientists work in specific catchment areas called Priority Areas for Action (PAAs). A catchment is an area of land around a river, lake, or other body of water. Rainwater that falls within a catchment eventually flows into rivers, lakes, or directly into estuaries or coastal waters bringing with it any contaminants that may be in the landscape.

The total land area included in the PAA is based upon the combined catchment areas of each of the rivers. A river's catchment is derived from the topography of the landscape, where all water that falls onto that catchment area flows into one river. When the river is large, we spilt it into smaller, more manageable sections. Each of these river sections has a smaller catchment area with a unique code, which we call waterbodies. At the bottom of these waterbodies, there are monitoring points, which are used to measure the quality of the incoming water.

The Camlin PAA is in Co. Longford. It is divided into three sections or waterbodies, which are distinguished by a unique number (shown in Map 1):

- Camlin_010: This waterbody flows from Ballymore to Clonbroney.
- Camlin_060: This waterbody flows from Ardnacassagh before Longford town (main channel) with an inputting tributary originating from Ardagh village. (Photo 1)
- Camlin_070: This waterbody flows from Mullagh to Ballykenny.

Photo 1. The Camlin River, Longford town.



Map 1. The Camlin PAA 2010-2015 ecological status, location of monitoring points and waterbody catchment areas.

2. Catchment Description

The main settlement in the catchment area of the Camlin PAA is Longford town. Agriculture is the main land-use in the catchment, with some areas of forestry and peatland.

The geology and soil type within a catchment determine how water moves. There is a mix of wet, dry and peat soils throughout the PAA. On the poorly draining soils in the PAA, water cannot easily soak into the ground and collects. On the well-drained soils in the PAA, water is able to soak into the ground. From there, it travels vertically into the underlying bedrock. The water then moves horizontally through the bedrock and flows upward into the streams in the PAA.

The Camlin River is a is an important habitat for many protected aquatic plants and animals, including the white clawed crayfish. In addition, the Camlin River is important to the replenishment of the trout stocks of Lough Ree, a wild brown trout fishery.

3. Water Quality history in the Camlin PAA

Rivers are classified into five quality classes (status), with high being unpolluted and bad being the most polluted.

High	Good	Moderate	Poor	Bad

The Environmental Protection Agency assign status at (approximately) 3-yearly intervals based on the standards set out in European legislation, the Water Framework Directive. Status is based on many elements that altogether show the overall health of the river, for example, the ecology recorded in river habitats, the physico-chemical condition of the river (oxygen levels, nutrient concentrations, indicators of organic and chemical pollution etc) and also the physical condition of the river bed and bank.

We need to make sure that the Camlin PAA achieves **Good Status**. We have reviewed water quality data available for each of the waterbodies (Table 1 and 2) and we have found that:

Waterbody	**Status (2013 – 2018)**	**Our findings**
Camlin_010	Moderate	We have identified that the level of total ammonia and nutrients in the river is too high and caused a decline in water quality.
Camlin_060	Unassigned	Even though this waterbody does not have status assigned to it, we have identified that the levels of total Ammonia, nutrients and BOD are too high and have caused a decline in water quality.
Camlin_070	Poor	We have identified that the poor fish status or potential is driving the poor status for this waterbody.

Table 1: Water quality status and findings.

PAA	WB Code	WB name	WB Type	Risk	Env. Obj	2007-2009	2010-2012	2010-2015	2013-2018	EPA Characterisation Significant Pressure Category (Sub-category) (2013-2015)	EPA Characterisation Significant Issue (2013-2015)	Desk Study Review Potential additional pressures (2019)	Desk study Review Potential Significant Issue (2019)
Camlin_010	IE_SH_26C010050	CAMLIN_010	River	**At risk**	2021	U	U	P	M	Forestry (Clearfelling)	None specified	Agriculture	Total Ammonia
										HYMO (Channelisation)	None specified		
Camlin_060	IE_SH_26C010900	CAMLIN_060	River	**At risk**	2027	U	U	U	U	UWW (Agglomeration PE > 10,000 - D0060-01)	None specified	Hydromorphology (weir)	
										Urban Run-off (Diffuse Sources)	None specified		Total Ammonia, Nutrients
										Agriculture (Pasture)	None specified		
										Urban Run-off (Diffuse Sources)	None specified		
Camlin_070	IE_SH_26C011000	CAMLIN_070	River	**At risk**	2027	P	P	P	P	UWW Agglomeration PE > 10,000 (D0060-01)	None specified		Poor Fish status or potential
										Urban Run-off (Diffuse Sources)	None specified		
										Hydromorphology (Land drainage)	None specified		

Table 2 Ecological status, pressures, and significance in the Camlin PAA

4. Sources of Pollution

Pollutants find their way to rivers by several paths:

- They can be through pipes directly connected to the river from large sources such as wastewater treatment plants, or small sources such as faulty septic tanks, farmyards, roadside drains.
- They can flow across the ground to the river when nutrients applied to the land as fertiliser wash off by rainfall before the crop and soil has absorbed them. This is usually a problem where soils are wetter and poorly draining, particularly during wet weather.
- Groundwater losses occur when pollutants move down through the soil and rock into groundwater and eventually into rivers, lakes, and coastal waters. This usually occurs when too much fertiliser is applied to land, or when the soil is not ready to absorb the nutrient (e.g., temperatures too cold, incorrect soil pH etc) and is common in free-draining/ light soils.

From our desk study (Table 2), we have identified four potential pollution sources in the Camlin PAA, which we will examine further. These are agriculture, urban wastewater, urban diffuse, including misconnections, and hydromorphology.

- Agriculture and hydromorphology are the likely significant pressures in the Camlin_010 waterbody. Hydromorphology is where the river and land adjacent to the river are physically changed from their natural conditions. Straightening and deepening of the channel and land drainage are some examples. These practices have consequences as sediment is released and settles in some places on the riverbed. This sediment affects fish and other life in the river. Forestry may have had acute pressures in the past during periods of clear-felling but not thought to be significant at present.
- Agriculture, urban wastewater, urban diffuse pressure including stormwater and misconnections are likely to be the significant pressures in the Camlin_060. The Camlin_060 is currently unassigned ecological status but judging from the chemistry it is likely to be less than good water quality. The Camlin weir/falls is also likely to be a significant hydromorphological pressure affecting fish status or potential which is assessed in the Camlin_070.
- Hydromorphological pressures such as land drainage are also impacting the Camlin_070. These practices have consequences as it reduces habitat quality and

sediment is released and settles in some places on the riverbed. This sediment affects fish and other life in the river. Poor fish status or potential is now driving the poor status for this waterbody.

These as well as other potential pollution sources that may arise will be examined further during field visits.

5. Engagement

Community Meeting

We held a community information meeting in the Temperance Hall, Newstreet, Longford on the 22nd November 2018 to tell the public about our work and to hear about water quality concerns from people living in the area.

Urban wastewater and industrial pressures on water quality were discussed at the community meeting.

Farmers' Meeting

Agricultural Sustainability Support and Advice advisors from Teagasc and the Lakeland Dairy Co-Op held an information meeting for farmers within the PAA. During this meeting, the advisors gave details of the supports available for farmers in this catchment.

6. Local Catchment Assessment

The desk study helps us inform our approach for undertaking our own fieldwork or local catchment assessment (LCA). LAWPRO's catchment scientists will carry out fieldwork to identify areas with highest impact. We will collect water samples to learn about the nutrient levels in the rivers. We will walk selected stretches of the river to identify where total ammonia, BOD ortho-phosphate and other pollutants are being lost from pipes and from the land. We will measure the dissolved oxygen, pH, temperature, and conductivity at each site.

We will publish a summary of this work, when available.