# Summary: Awbeg (Buttevant)(West) Priority Area for Action Desk Study

This is a non-technical summary of the desk study on the Awbeg (Buttevant)(West) Priority Area for Action (PAA).

A desk study is the first step in our work. We gather available information about the river into a single document. The information comes from many public bodies including the Environmental Protection Agency, local authorities, Inland Fisheries Ireland and Irish Water. It also includes information learned from the public at a local community meeting. The community meeting for the Awbeg (Buttevant)(West) PAA was held in Liscarroll Community Centre in April 2019.

The desk study helps us to understand:

- The quality of the water in the river
    - Has it changed in the last few years?
- The importance of the river
    - Are there any rare plants, animals or habitats that must be protected?
    - Is it used to supply our drinking water?
- The human-made impacts
    - Is there a wastewater treatment plant?
    - Is land used for agriculture or forestry?
    - Has the river been changed physically?

## Background and location

The Awbeg (Buttevant)(West) PAA is in County Cork. It is divided into two sections or waterbodies which are distinguished by a unique number (shown in **Figure 1**):

- Awbeg (Buttevant)(West)_010: This waterbody flows in an easterly direction flowing along the boarder of the townland of Sunfort. It has headwaters to north west rising in Tulladuff, Cappanagoul, Ballybahallagh and to the south rising in Killinane, Knockbarry and Coolbane.
- Awbeg (Buttevant)(West)_020: This waterbody flows in north easterly direction towards Annagh Bridge. It has headwaters to the south rising in Lackaroe and Gurteenroe and to the north rising in Killabraher North, Killarraher South, Cloonkeen and Fiddane.

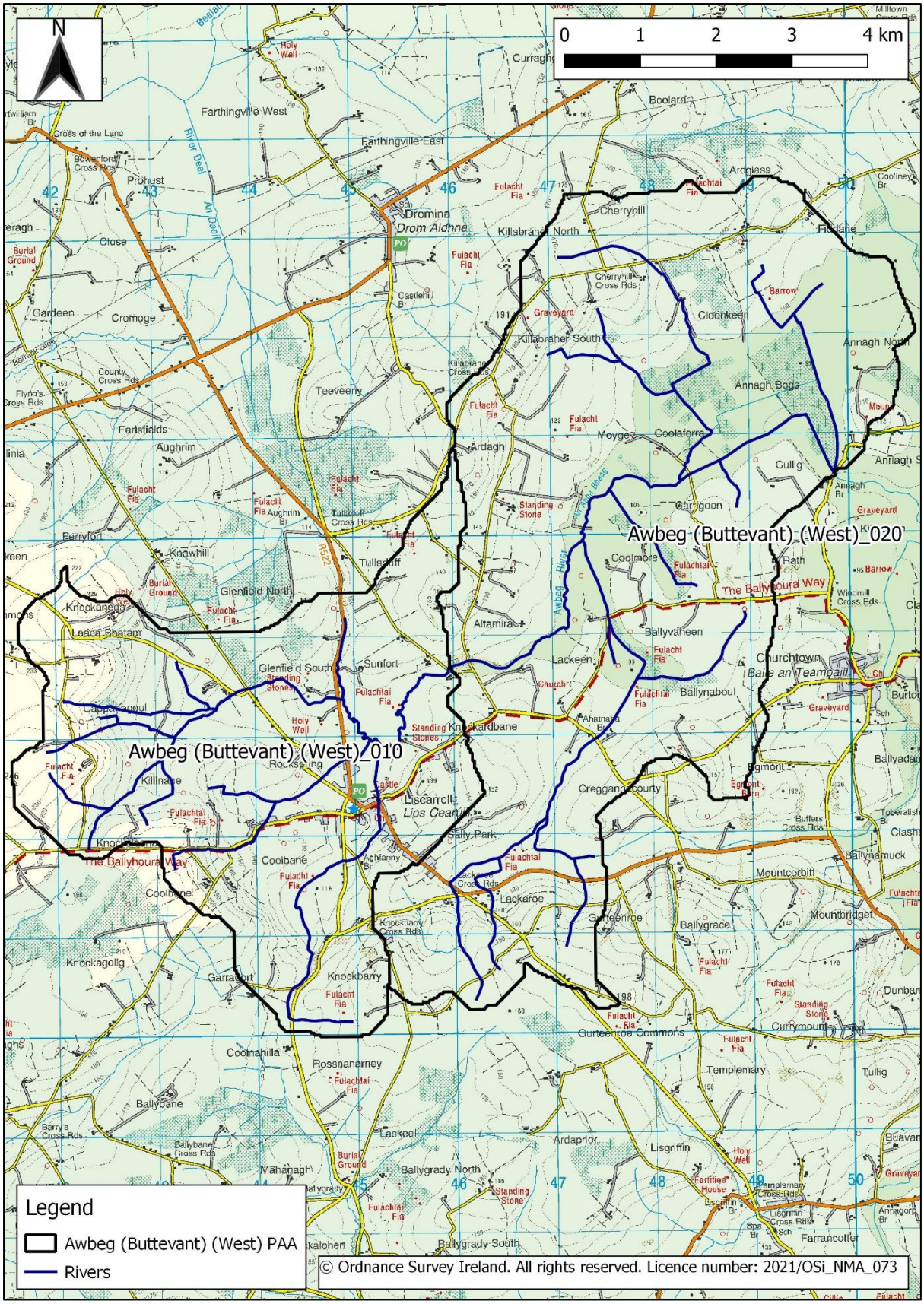



**Figure 1 The Awbeg (Buttevant) (West) PAA**

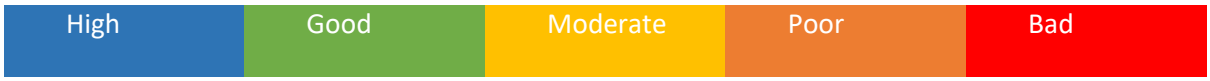
## Catchment Description

The main settlement located in the Awbeg (Buttevant)(West) PAA is Liscarroll village, Co. Cork (in the south). Agriculture is the main land-use in the catchment, with small areas of forestry. Soils are a mix of wet (poorly draining) and dry (well draining) throughout the PAA.

The Awbeg river was selected as a PAA because of its value as a trout river and because it is failing to meet protected area objectives for crayfish; the lower section of Awbeg (Buttevant)(West)_020) falls within the Munster Blackwater (Cork/Waterford) SAC (Site Code 002170).

## Water Quality in the Awbeg (Buttevant)(West) PAA

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




The Environmental Protection Agency assigns status at (approximately) 3-yearly intervals based on the standards set out in European legislation, the Water Framework Directive. Status is based on many different elements that altogether indicate 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 Awbeg (Buttevant)(West) PAA achieves Good Status. We have reviewed water quality data available for each of the waterbodies and we have found that:

- The Awbeg (Buttevant)(West)_010 is currently at Poor status. We are unsure what is driving this unsatisfactory water quality as there is no information on nutrient levels available yet.
- The Awbeg (Buttevant)(West)_020 is currently at Poor status. This is due to hydromorphology (physical modification) as well as high levels of nutrients (phosphate and ammonium) and possibly sediment.

## Sources of Pollution

Pollutants find their way to rivers by a number of paths:

- They can be piped directly to the river from large sources such as wastewater treatment plants, or small sources such as faulty septic tanks, farmyards, roadside drains etc.
- They can flow across the ground to the river when nutrients which are applied to the land as fertiliser are washed 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 isn't ready to absorb the nutrient (e.g. temperatures too cold, incorrect soil pH etc) and is common in free-draining/ light soils.

We have identified potential sources of pollution in the Awbeg (Buttevant) (West) PAA which we will examine further. These are agriculture, forestry and hydromorphology.

Agriculture

Agriculture is identified a potential source of pollution on Awbeg (Buttevant)(West)_010 and also (possibly) on Awbeg (Buttevant)(West)_020. We have no information yet on nutrient levels in Awbeg (Buttevant) (West)_010 but from the desk study, we believe that levels of the nutrient orthophosphate may be too high, particularly from the areas in the catchment where soils are wetter (poorly draining). We do have nutrient results for Awbeg (Buttevant)(West)_020 and these results show that nutrients orthophosphate and ammonium are too high. Sediment is also a possible issue here.

Forestry

Forestry is a potential source of sediment issues in Awbeg (Buttevant)(West)_020.

Hydromorphology

Hydromorphology is where the river and land beside the river are physically changed from their natural condition. 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. Our desk assessment indicates that straightening and deepening of the channel in Awbeg (Buttevant)(West)_020 are major pressures there.

Other possible pollution sources such as discharges from wastewater treatment systems and other point sources may also be identified during our fieldwork.

# Next Steps

## Community Engagement Meetings

We held a community information meeting in Liscarroll Community Centre on the 30th of April 2019 to tell the public about our work and to hear about water quality concerns from people living in the area.

Issues raised at the meeting included general water quality monitoring queries such as the monitoring of the treatment plant in the village, concerns regarding flooding, road runoff and forestry.

Agricultural Sustainability Support and Advice advisors from Teagasc, Kerry Agribusiness and Dairygold 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.

## Local Catchment Assessment

LAWPRO's catchment scientists will carry out fieldwork to identify areas with highest risk of ortho-phosphate and/or sediment loss to the river. These areas are called critical source areas for phosphate loss.

On Awbeg (Buttevant)(West)_010, we will assess biology by taking kick samples and sediment levels at different points in this waterbody. Also, we will take kick samples upstream and downstream of the wastewater treatment plant to confirm whether this is a source of pollution here.

We will assess and confirm if there are hydromorphological impacts along the main channel upstream of Annagh Bridge. We will assess biology by taking kick samples and sediment levels at different points in this waterbody. These assessments will inform if hydromorphology, agriculture and/or forestry are causing siltation and/or nutrients issues at outlet of the waterbody at Annagh Bridge.

We will collect water samples at both waterbodies for nutrients to learn about which branches of the river have the highest phosphate levels.

A report on the outcome of this local catchment assessment work will be published here when available.

Photograph of WFD operational monitoring point at Annagh Bridge, taken on 26th of April 2019

Photograph of WFD operational monitoring point at Bridge SE of Sunfort, taken on 26th of April 2019

The table below gives some summary information on waterbody status, possible water quality issues and sources of pollution for the waterbodies in the Awbeg (Buttevant) (West) PAA.

Table 1 Ecological status, pressures, and significance in the Awbeg (Buttevant) (West) PAA

| WB Code | WB Name | WB Type | Risk | Ecological Status | | | | EPA Characterisation Significant Pressure Category (Sub-category) (2013-2015) | EPA Characterisation Significant Issue (2013-2015) | Desk Study Review Potential Additional Pressures (2020) | Desk Study Review Potential Significant Issue (2020) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | 2007-2009 | 2010-2012 | 2010-2015 | 2013-2018 | | | | |
| IE_SW_18A090300 | Awbeg (Buttevant) (West)_010 | River | *At Risk* | Good | Good | Poor | Poor | Agriculture (agriculture) | Organic pollution | Liscarroll wastewater treatment plant (CoA) | Organic pollution, Nutrients (orthophosphate) and sediment |
| IE_SW_18A090400 | Awbeg (Buttevant) (West)_020 | River | *At Risk* | Mod | Poor | Poor | Poor | Agriculture (agriculture) | | No new pressures identified | Channelisation, nutrients and sediment |
| | | | | | | | | Forestry (forestry) | | | |
| | | | | | | | | Hydromorphology (channelisation) | Altered habitat due to hydrological changes and altered habitat due to morphological changes | | |