Caha Priority Area for Action Desk Study Summary

This is a non-technical summary of the desk study on the Caha 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. To write these desk study reports, we use information available for all waters that we plan to assess in the PAA. We get our information from:

- The Environmental Protection Agency
- Local Authorities
- Inland Fisheries Ireland
- Irish Water
- The Department of Agriculture, Food and the Marine
- Other public agencies.

The desk study also includes information learned from the public at a local community meeting. The Caha community meeting was held in Dunmanway in December 2018.

The desk study helps us to understand:

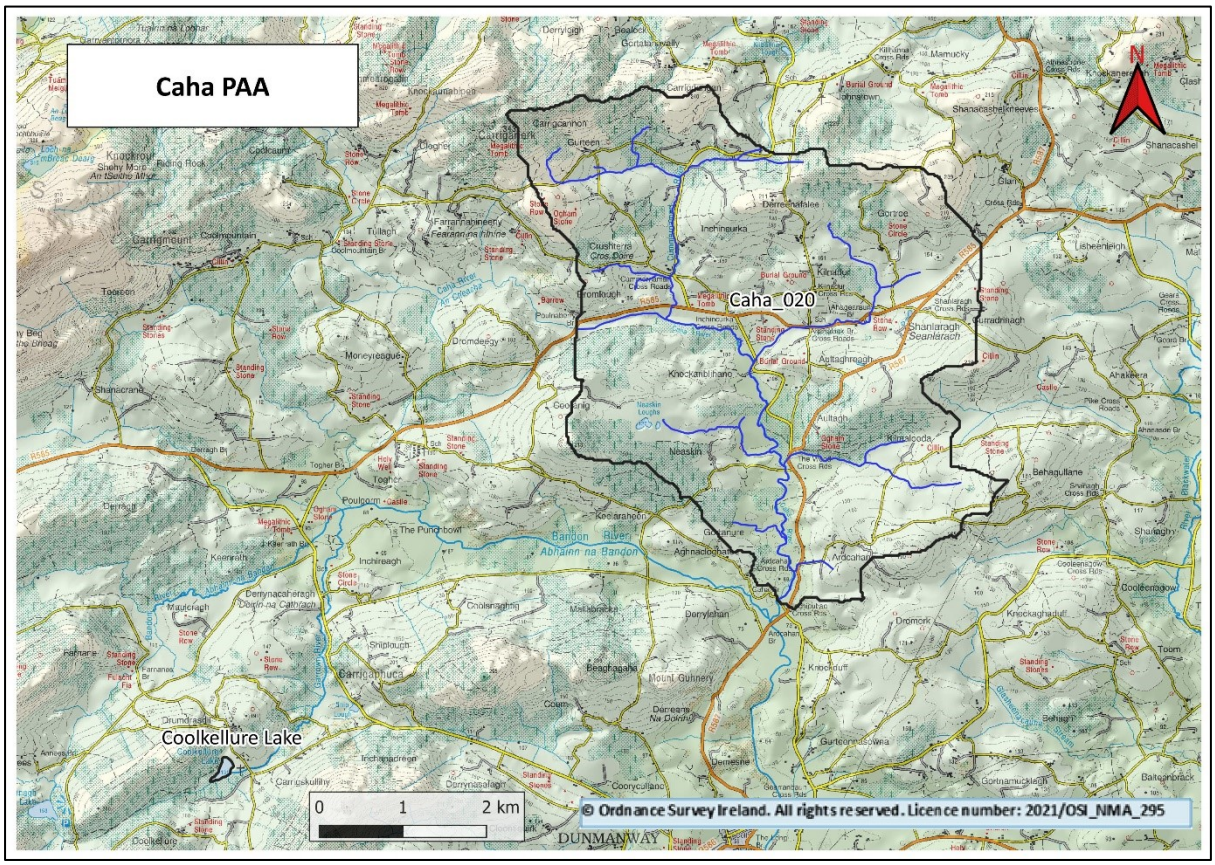
- The quality of the water in the river
    - Has it changed in the last few years?
- The importance of the river
    - Are there any rare plants, animals or habitats that must be protected?
    - Is it used to supply our drinking water?
- The human-made impacts
    - Is there a wastewater treatment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

Background and location

The Caha PAA is located in Co.Cork and comprises of two waterbodies Caha_020 and Coolkellure Lake (shown in **Figure 1** below):

- The Caha_020 waterbody is a section of the Caha River that rises in the Shehy Mountains joining the Bandon River 4km north of Dunmanway. The Caha river flows from Drumlough, Crushterra and Gurteen in the west and northwest of the waterbody to Inchicuhan crossroads at Ardcahan in the south.
- Coolkellure Lake is situated in Coolkellure, to the southwest of Caha_020, in waterbody Bandon_020 (which is not in the Caha PAA). It is near the headwaters of the Bandon River approx. 5.5km northwest of Dunmanway.

Figure 1 The Caha Priority Area for Action



Catchment Description

Soils in the Caha_020 are a mix of shallow poorly draining mineral and peat, and shallow well drained soils. Land use is primarily low intensity agriculture and forestry.

The Caha River is listed as one of twenty-seven catchments under the Freshwater Pearl Mussel Regulations S.I. 296/2009 which aims to support the achievement of favourable conservation status of the protected species. Currently the Caha is not meeting its objectives under these regulations.

Caha_020 is a High Status Objective waterbody which means it must improve and achieve high status under the Water Framework Directive by 2027. It is within the Natura 2000 Site Bandon River Special Area of Conservation (SAC) also S.I. 653 of 2019 Regulations, which includes qualifying interests for the protection of natural habitats and species such as freshwater pearl mussel and brook lamprey.

Coolkellure Lake is 3.5Ha in size and located in an upland area within waterbody Bandon_020 which is currently at Good status and not part of the PAA. The lake is the abstraction source for the drinking water supply for Dunmanway. Land use within the catchment of the lake is forestry and agriculture.

Water Quality in the Caha 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 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 Caha PAA achieves its quality objectives which is to achieve high status for Caha_020 and good status for Coolkellure lake. We have reviewed water quality data available for each of the waterbodies and we have found that:

- Caha_020 was at High status from 2006 to 2012 and dropped to Good status in 2015. Ecological status is currently at Good. We are unsure what is causing this unsatisfactory water quality but sediment and nutrients are potentially issues. Caha_020 is a 'High Status Objective' waterbody so it needs to improve further and return to High Status.
- Coolkellure Lake is currently at Moderate status but has fluctuated between moderate and good status for the past number of years. There is a nutrient issue in this lake.

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.

From the desk study we believe that sediment and nutrients are the most likely issues impacting water quality in Caha_020 which we will examine further. These are likely to be related to forestry and quarrying (that had been historically carried out in the PAA).

The issue impacting water quality in Coolkellure Lake is phosphorus, most likely due to clear felling of forestry.

Other sources may also be identified during further local catchment assessment.

Forestry that was planted prior to the Guidance on Best Forest Practice by the Forest Service was frequently planted up to the very edge of rivers and lakes. This creates a high risk of sediment and nutrient loss to watercourses when they come to be felled. Run-off from forestry activity potentially contains excess sediment (some soils including peat are highly erodible), nutrients and brash (tree debris, twigs, bark, needles etc) that can impact water quality. Sediment deposition in rivers can damage habitats such as beds for fish spawning and impact their food source. Nutrients carried with

the sediment also impact on water quality with excess algae and plant growth that can choke up the waterway and affect oxygen levels.

Quarrying activity can damage the physical habitat of streams and rivers because of sediment that is lost to the watercourse. In the Caha_020 there are two closed quarries which may potentially have been a source of sediment in the past.

Next Steps

Community Engagement Meetings

We held a community information meeting in Dunmanway on the 6th of December 2018 to tell the public about our work and to hear about water quality concerns from people living in the area.

Comments and issues raised include:

- How sediment acts in rivers and how it impacts freshwater pearl mussel and are they at risk
- There was a view that forestry, drainage and one-off houses are the biggest pressures in the catchment
- That a lot of forestry has been felled and land reclaimed. The question was asked as to whether forestry setbacks are adequate?
- Concern around wind farm development and how that affects achieving water quality improvement and high status, what studies were conducted for the wind farm? And questions around the EIA process
- It was stated that fish stocks in the Caha river seem to be good but flooding issues are worse now because of drainage
- What type of measures might be used and are they being funded?
- Is Coolkellure lake being monitored by the EPA? There is much more weed and plant growth in the lake now
- Interest expressed for school involvement

Agricultural Sustainability Support and Advice advisors from Teagasc, Dairygold and Carberry Group held an information meeting for farmers within the PAA on 5th February 2019. 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 impact.

We will assess biology and collect water samples to learn more about the nutrient and sediment levels in the rivers. We will walk selected stretches of the river to identify where pollutants and sediment are being lost from the land.

The outcome of this work will be published here when available.

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

Table 1 Ecological status, pressures, and significance in the Caha PAA (high status objective water bodies highlighted in columns 1 and 2 in blue)

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 (2019)	Desk study Review Potential Significant Issue (2019)
				2007 – 2009	2010 – 2012	2013 – 2015	2016 – 2018				
IE_SW_20C010700	Caha_020	River	*At Risk*	High	High	Good	Good	Extractive Industry (Quarries)	Altered habitat due to morphological changes	No additional potential pressures identified	Siltation, nutrients
								Forestry	Altered habitat due to morphological changes		
IE_SW_20_153	Coolkellure Lake	Lake	*At Risk*	Moderate	Good	Moderate	Moderate	Forestry	Nutrient pollution	Agriculture (nutrients)	Nutrients (Total Phosphorus), Chlorophyll a

Caha River

Coolkellure Lake