The impact of cattle on freshwater ecosystems

Unrestricted cattle access to watercourses has been linked to deterioration in water quality arising from contamination with faecal matter, increases in suspended sediment, and nutrient enrichment. Preventing such access by fencing off streams and rivers is one of the measures included in the Irish government's new Green Low Carbon Agri-environmental Scheme, GLAS.

Studies on similar measures in other jurisdictions, for example the USA, New Zealand and Australia, have reported improvement in water quality in some cases, but, to date, there has been no intensive study of their effectiveness under Irish conditions, and indeed few studies in Europe generally.

COSAINT - Cattle Exclusion from Watercourses: Environmental and Socio-economic Implications is an EPA funded project (2014- W/154) led by Dr Daire Ó hUallacháin of Teagasc which will run for four years from 2015. Partners include Dundalk Institute of Technology (Prof Eileen Jennings and Suzanne Linnane), and PhD student Patricia Antunes, University College Dublin (Dr Mary Kelly Quinn and PhD student Matt O’Sullivan), Dublin City University (Prof Fiona Regan) as well as Teagasc partners. The project will assess the impacts of cattle access on nutrient and sediment loading, on faecal contamination and on biological quality of streams, and will undertake a socio-economic assessment of cattle exclusion measures in Ireland. Study sites have been selected in three moderate status catchments (Co. Leitrim, Co. Monaghan, and Co. Wexford) and two high status catchments (Co. Cork and Co. Kerry). In one study catchment, the Milltown Lake catchment in Co. Monaghan, one of the three tributaries of the Drumleck River was fenced in its entirety to exclude livestock in 2006 with the cooperation of the local farming community, during the National Source Protection Pilot Study. This new project will offer a unique opportunity to quantify the impacts of this mitigation measure eight years on.

The project is using a combination of high frequency sampling and motion detection cameras to capture information on the extent and duration of cattle access to these waterways.