

Guidance for the farming community on protection of water resources and habitat quality from impacts due to livestock access to waters

The River Suir Surface Water Working Group established under the aegis of the EPA's Office of Environmental Enforcement has prepared this guidance leaflet for the farming community. Water and habitat quality is being adversely impacted in many areas as a result of livestock access to waters. This has significant potential implications in terms of public health, safety of water supplies and fisheries and wildlife issues. From the farming perspective, it is essential that Ireland's reputation of quality food production from a healthy environment is maintained.



Livestock watering!!

This leaflet describes the problems as a result of livestock access to waters. It identifies benefits to the farming and the wider community. For those agencies and authorities charged with responsibility for environmental and habitat quality protection and improvement and for provision of water supplies, it is intended to assist in delivery of Ireland's obligations under the Water Framework Directive. The leaflet contains practical recommendations and provides advice on reducing and where possible eliminating livestock access to waters.

Protecting the quality of our water resources and riparian habitat.



Unfenced bank area showing poaching and erosion due to lack of fencing.

What happens when farm animals have free access to streams, rivers, canals, lakes and other water bodies?

- Banks become eroded.
- Bank-side vegetation is damaged and sometimes eliminated.
- Large amounts of matter containing animal faeces, soil and nutrients enter and contaminate waters.
- Blanketing or smothering of riverine gravels can totally destroy nursery and spawning areas for fish.
- Aquatic macro-invertebrate and plant life, essential constituents of the food chain are reduced or eliminated.
- Water abstraction facilities are affected, and treatment processes to remove contaminants have to be upsized and upgraded with major cost and other resource implications.

Sheep and cattle, particularly when lambing or calving, are significant sources of *Cryptosporidium*. Deer (also when present at high numbers in the wild) and pigs, particularly if farmed close to water sources, can also be a source of *Cryptosporidium*. The risk is higher when animals have direct access to water. Therefore, it is imperative that access to surface waters used as drinking water supply sources is adequately protected.



3 Silt erosion, with downstream deposition and formation of an island with implications for alterations in flow regime with possible flooding or further erosion during high flows.

Who are the stakeholders and who is affected?

Everyone needs clean water:

- Group water scheme members who have set up at local level their own water supply arrangements.
- The general public on whose behalf water is abstracted and treated by Local Authorities prior to supply through distribution networks.
- The farming sector for livestock watering and crop irrigation.
- Industry for use as process water.
- Recreational users engaged in boating, swimming, water sports, angling etc., and wildlife, particularly our inland fisheries resource for which Ireland is internationally renowned.



4 A brown trout at the alevin stage shortly after hatching. Very sensitive to siltation and in stream disturbance due to livestock movement.

Fencing and bank stabilisation benefits for all stakeholders

There are very many benefits from fencing of waters and limiting livestock access, and from maintaining existing natural boundaries such as hedges and stonewalls bordering waters such that these are stock proof.

- Fencing, especially where a narrow strip is left between the fence and river bank, allows for the development of stable bankside vegetation by prohibiting animal access, trampling and grazing.
- Well developed riparian zone vegetation comprising grasses, shrubs and trees help maintain bank stability, mainly due to the binding influence of root structures.



5 Compare the level of poaching and habitat destruction pre-fencing shown above, with that 1 year later with livestock eliminated shown below.



6 Note above, limited fenced access to a hard standing area of the stream for livestock watering.

- Fencing allows for a recovery of riparian zones where they have been trampled and overgrazed, and for re-establishment of a wide range of plants and invertebrates which cannot survive on intensively fertilised or heavily grazed lands. (O' Grady, M. F.,2006)



7 Habitat destruction and elimination of all aquatic life because of unlimited livestock access.

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The same location as photograph No. 7, but with livestock excluded

- Fencing ensures that the river corridor is a continuum thereby ensuring mobility of many forms of wildlife along a network of river channels across the countryside, and provides opportunities for ground nesting birds such as mallard. (O'Grady, M. F., 2006)
- Stable bankside vegetation acts as a barrier and filter preventing soil(s), nutrient and pesticide run-off from farmlands gaining direct access to waters.
- Fish stock assessments undertaken by the Central and Regional Fisheries Boards have established that consistently, where fencing and creation of stable riparian zone vegetation has occurred, there are directly associated improvements in fish population numbers.
- Shade and cover is particularly important in terms of the well-being of fisheries resources. Shading due to growth of grasses, trees and shrubs in areas of land fenced off between the actively worked land and waters reduces growth of in-stream vegetation by limiting light penetration. Shading also helps to keep water cool especially during summer conditions when fish might otherwise experience temperature stress. The wide range of insect life inhabiting bank-side cover provides a very useful source of food especially for fish.

REPS and the single farm payment

Farmers who participate in and receive special grant payments under the Rural Environment Protection Scheme (REPS) are required to fence off all watercourses and to prevent livestock access, except where the lands in question are bounded by waters which are tidal, or which drain directly into salt water, or where the watercourses are already stock proofed with hedgerows or stonewalls. There are a limited number of further circumstances defined under REPS, where exemptions apply in relation to livestock access.

Under REPS 4, access to drinking points may be permitted, provided such points prevent animal movement up or downstream and restrict animals

from standing in the water. Fences must be a minimum of 1.5 metres from the top of the bank of a watercourse.

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Fencing rendered ineffective due to animal access from farm on opposite bank.

Good Farming Practice

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Note secure fencing to protect well grassed embankment on higher ground between drinking trough and watercourse.

Livestock watering should, where possible, take place at drinking troughs which should be located so as to avoid poaching. Drinking troughs should not be located where there is a risk of runoff to surface waters, or where there is fissured limestone, and should be a minimum of 20 metres from boreholes and wells. Livestock should not have direct access to waters where downstream water abstraction for human consumption is taking place.

Where because of downstream abstraction for water supply, livestock cannot be permitted to enter surface waters, farmers have the option of using public or group water supplies, or to provide their own supply using electrically powered pumping from a borehole or by abstracting from surface waters. For example, use of a mechanical nose pump is an efficient means of delivery of supply to livestock without unnecessary water wastage.



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A mechanical nose pump

In cases where it is not feasible to provide piped drinking supplies for livestock, it is acceptable, subject to the exercise of care, to allow limited animal access to waters for drinking. Such drinking access should only take place when there is no risk of contamination of any downstream drinking, farming or industrial supply, or where beneficial uses such as swimming, boating and angling activities involving direct water contact do not take place. Livestock should be controlled by use of fencing and barriers, with a limit of one watering access area per field.

In constructing drinking access points, emphasis should be on bringing water to the livestock, rather than allowing livestock to walk out in the river or stream channel. It is preferable that there be a fall created back towards the lands on which the livestock are standing, thereby allowing for contaminated deposits which inevitably will contain urine and faeces to be routinely removed.



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Livestock have drinking access, but are precluded from entering the stream. Contamination of water is still highly likely because of the fall towards the stream coupled with the scouring effect of the flowing water.



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An example where although partly limited, livestock access is very likely to contaminate water and affect downstream uses.

Specific benefits to the farming community

Apart from the environmental benefits in terms of habitat and water quality, there are some very obvious benefits to the farming community from good fencing and elimination of animal access to surface waters. These include:

- Reduced risk of animal lameness, infection and injury.
- Reduced incidence of mud on udders and reduction in risk of contamination to milk.
- Saving in losses of valuable topsoil and nutrients which could otherwise occur during run-off and erosion of land.
- Reduction in the amount of time spent in rounding up livestock.
- Less animal straying leading to improved relationships between farmers and other rural dwellers.
- Protection of farmers own drinking water supplies against potential *Cryptosporidium* contamination.

In terms of agri-tourism, a river corridor which is fenced off is a much more valuable asset which will improve potential for conservation and recreation enterprises such as angling and farm walks, with the potential to improve the income and diversity of the farm in question.

Membership of the Environmental Enforcement Network Suir Surface Water Working Group includes: Limerick County Council, North Tipperary County Council, South Tipperary County Council, Waterford City Council, Waterford County Council, Kilkenny County Council, Southern Regional Fisheries Board, Teagasc, Department of the Environment Heritage and Local Government, Department of Agriculture & Food, South Eastern River Basin District Office, Office of Environmental Enforcement, EPA.

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