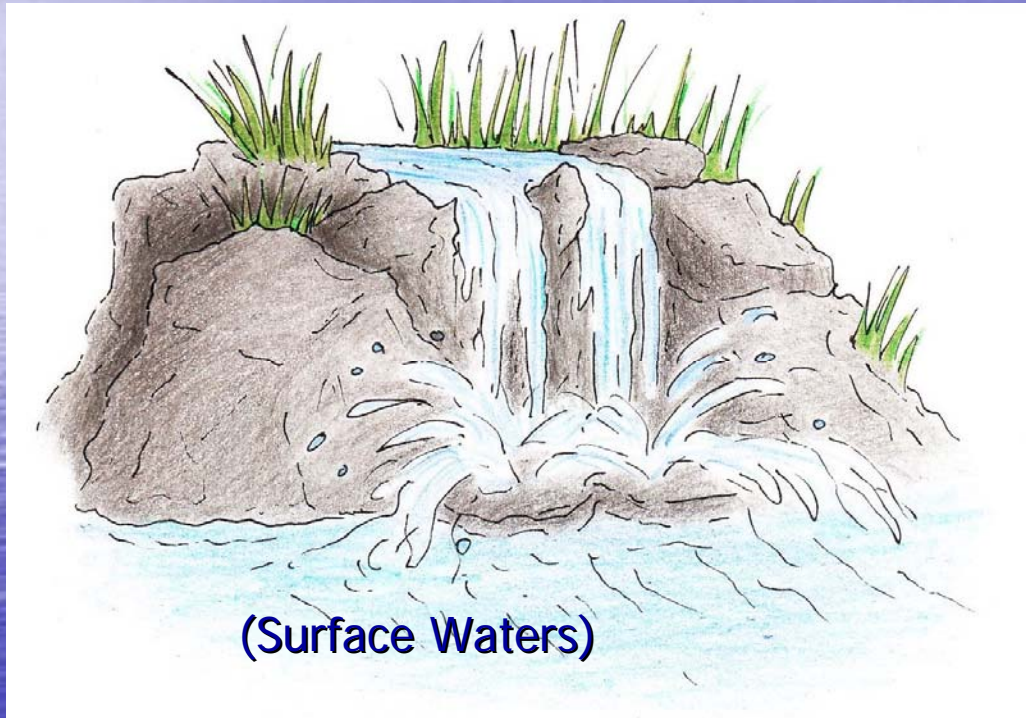


Water Pollution

Truailliú Uisce

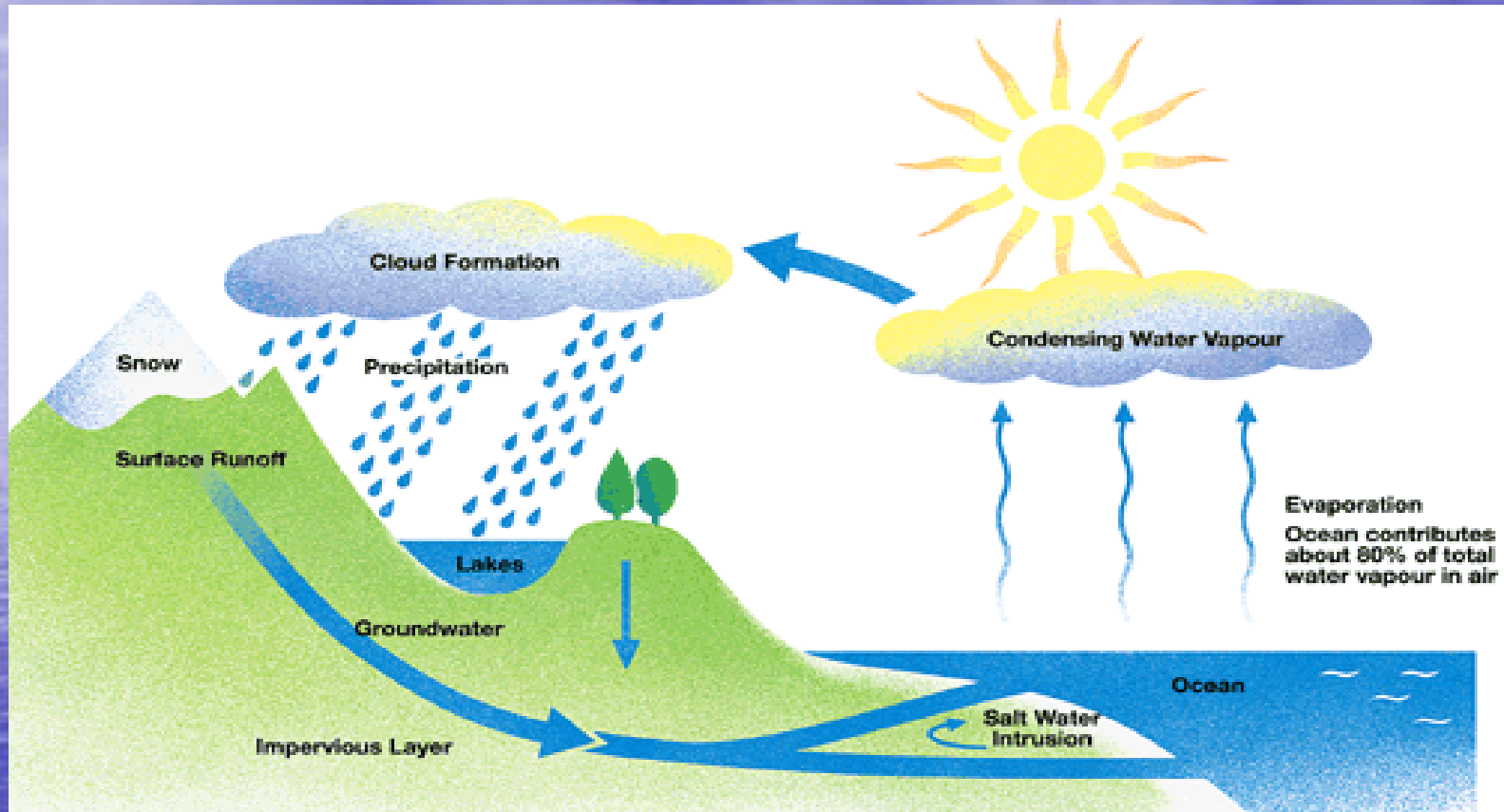


(Surface Waters)



For further information see "Our Water Our Resource Our Responsibility – Water Management for the 21st Century" on www.worldofwater.ie, www.monaghan.ie and <http://www.environ.ie/ga/Comhshaol/Uisce/CailiochtUisce/>

The Water Cycle / Timthriall



To understand water pollution we must first understand the water cycle and the connections between rainfall, land, surface water and groundwater

Water moves through soils, over land, urban areas, wetlands and waterways – throughout the entire catchment. Throughout the catchment human activities can impact on waters



It is easy to pollute waterways and here in County Monaghan many of our waterways have become polluted – mainly with slight to moderate levels of pollution

refer to <http://www.wfdireland.ie/maps.html>

and <http://www.monaghan.ie> and check out environment & water



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COMHAIRLE CONTAE
MHUINEACHÁIN

Tá Comhairle Contae Mhuineacháin ag obair chun caighdeán an uisce a chosaint agus a fheabhsú ar fud Mhuineacháin. Is acmhainn thábhachtach í an t-uisce sa chontae, le níos mó ná 20 loch agus abhainn agus 20 tollpholl a úsáidear chun uisce a chur ar fáil don phobal agus do ghrúpscéimeanna uisce.

What is water pollution?

Water pollution results when polluting matter enters water

Polluting matter is any substance

- that harms fish, their food source or spawning grounds
- that renders waters harmful to public health (waters used for drinking or bathing)
- that is detrimental to the beneficial uses of water (recreational, agricultural or industrial use)

Polluting matter can contain:

- **Microorganisms/Miocrorgánaigh** – such as faecal coliforms from animal and human wastes
- **Nutrients/Cothaithigh** (N & P) – from fertilisers or animal and human wastes
- **Chemicals/Ceimiceáin** – from industrial processes, pesticide use, mining, solvent use, use of medicines & from households
- **Organic material/Ábhar orgánach** from a variety of materials
- **Silt & soils/Siolta agus ithir** from excavation works, drainage, paved areas, quarries and erosion

We use water for many purposes and we often return it to our waterways as polluted water!

How do we measure water pollution?

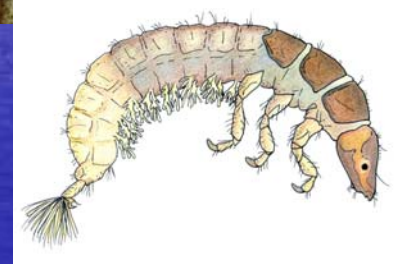
We can measure water pollution by a combination of physical, chemical, **biological** and microbiological testing

- physical & chemical testing includes such parameters as temperature, pH, solids, turbidity, phosphorus, nitrogen, & dissolved oxygen levels
- biological testing includes the examination of the insect larvae & other small organisms, fish surveys and plant surveys
- microbiological analysis includes bacteria counts, & testing for the presence of microbes such as e coli that are of interest in matters of public health

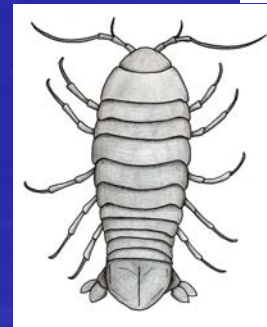
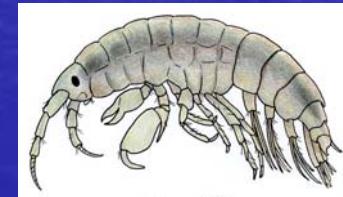
Biological Monitoring – tells us a lot about water quality



Pollution sensitive species/
Speiceas íogair don truailliú



Pollution tolerant
species/Speiceas
truailliúfhulangach

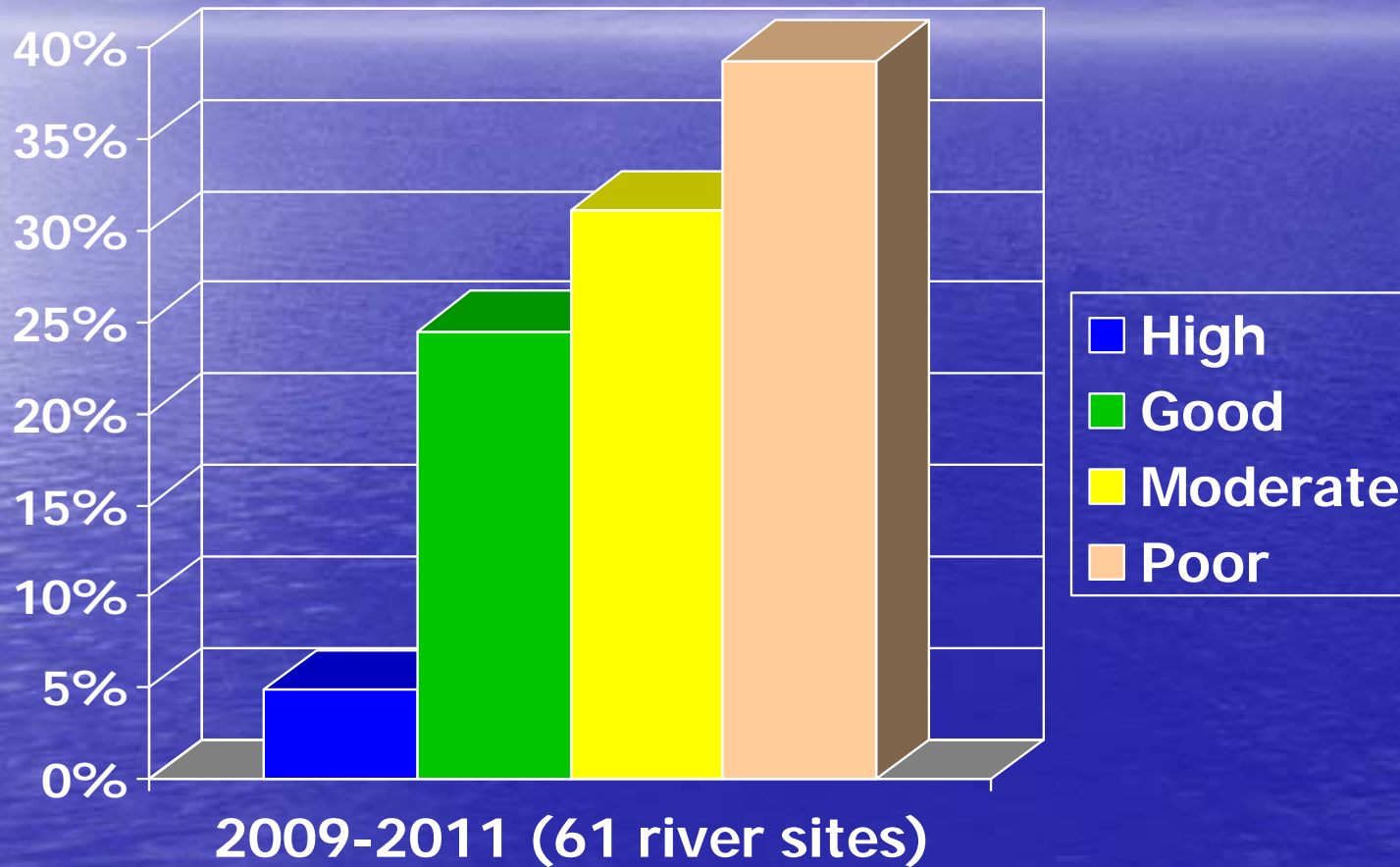


To carry out a biological survey see the methodology outlined in

[http://worldofwater.ie/resources/documents/adultmodules/4_2AssessingBiodiversity.pps#300,10,Sampling Method](http://worldofwater.ie/resources/documents/adultmodules/4_2AssessingBiodiversity.pps#300,10,Sampling%20Method)

The quality of Monaghan's river

(Biological Monitoring 2009 to 2011- 61 river sites)



What is polluting our waterways and where does the polluting matter come from?

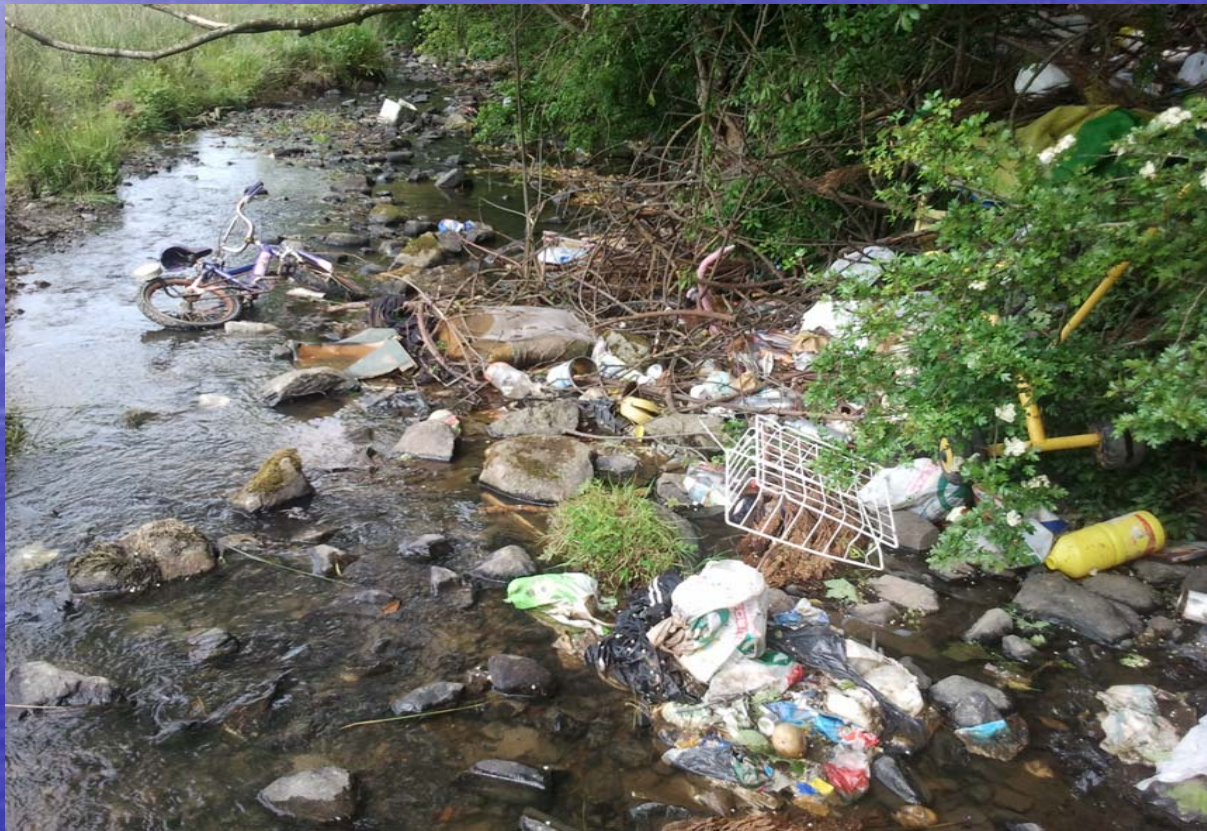
Discuss – then lets take a look at some examples



Graphic by Gillian Cullen

Litter and household wastes dumped in a stream

while this is very unsightly the effects of many other more serious pollution sources are not quite so visible



Urban Waste Waters and Urban area runoff a very significant source of water pollution



Contaminated Drain

- murky water can be a significant source of pollution in urban areas and below large industrial and agricultural complexes – storm drainage systems need regular cleaning



Industrial discharges

- are strong pollutants – however in recent years licensing and enforcement have resulted in significant improvements



Silts and soils from drainage, excavation works and quarries can pollute our waterways

Silt from numerous sources can be a significant pollution source - note the severe discolouration of river water below – think how this might effect the habitat of sensitive fish



Waste water from a septic tank discharging to a stream

Septic tank discharges can be a significant source of water pollution especially where tanks are poorly maintained and of old or inadequate design



PROTECT WATER RESOURCES

Wells and springs are fed by groundwater which moves through the pores or cracks in soils and rocks.



Poorly constructed wastewater treatment systems can lead to groundwater pollution. Well contamination by microorganisms is a common problem in Ireland.

In areas of free draining or shallow soils groundwater can be more vulnerable to pollution. (see advanced systems)



WATER CONSERVATION



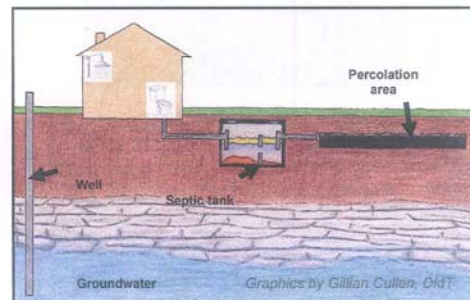
Refer to www.taptips.ie, the WATER WISE leaflet or the Environment Section of your local authority for advice on water conservation.

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GUIDELINES for SEPTIC TANK and other WASTEWATER TREATMENT SYSTEMS



Cuireadh an treoirleabhrán seo le chéile do shealbhóirí tí agus gnóthais bheaga atá ag brath ar umar seipteach nó ar chóras eile um chóireáil fuíolluisce chun salú/fuíolluiscí a dhiúscairt i mbealach ina íoslaghdaítear an baol do shláinte an duine agus don timpeallacht.

Environment Section,
Monaghan County Council,
County Offices
The Glen,
Monaghan

Phone: 047 - 30500/ 30592
Recycling Centre 047 80888

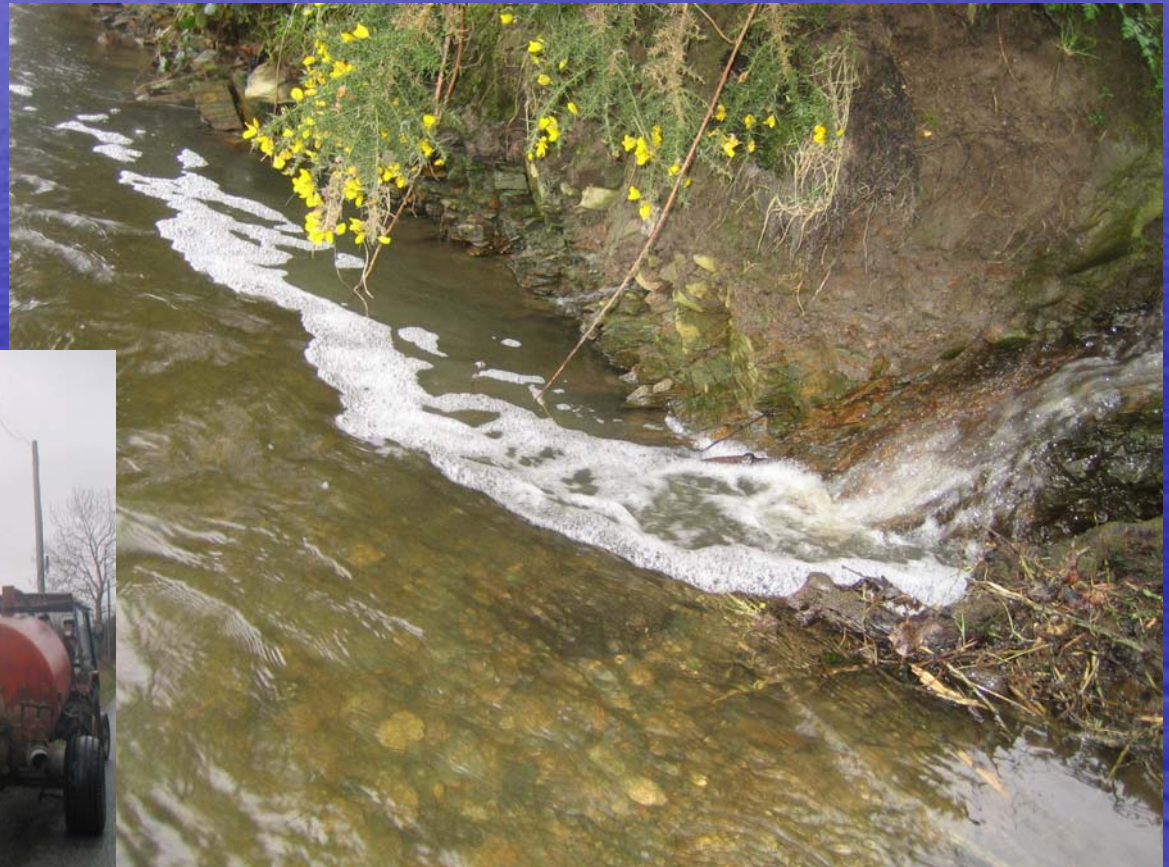
May 2010

Cuireadh an treoirleabhrán seo le chéile do shealbhóirí tí agus gnóthais bheaga atá ag brath ar umar seipteach nó ar chóras eile um chóireáil fuíolluisce chun salú/fuíolluiscí a dhiúscairt i mbealach ina íoslaghdaítear an baol do shláinte an duine agus don timpeallacht.

Poor land spreading practice – can result in direct discharges to waters

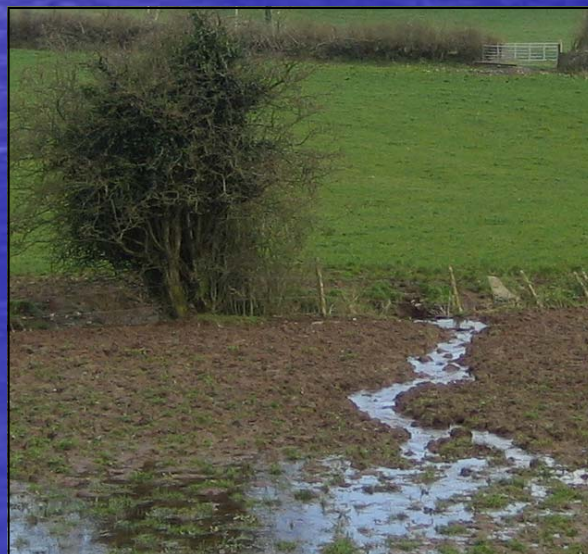
- a significant source of water pollution

Tá ról lárnach ag dea-chleachtais leata ar an talamh chun an cháilíocht uisce a chosaint



Poor agricultural practices

A significant source of water pollution



Déanann dea-chleachtais talmhaíochta cáilíocht uisce a chosaint

Common Problems in Co Monaghan

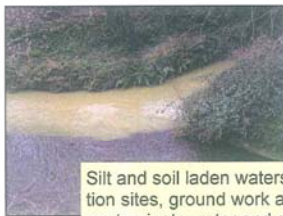
Unsatisfactory feeding points and poor out-wintering practices waters.



Féadfaidh truailliú uisce a bheith ann de bharr talaimh ar a bhfuil an iomarca stoic agus drochphóitseáil



Avoid cattle access to streams particularly near drinking water sources.

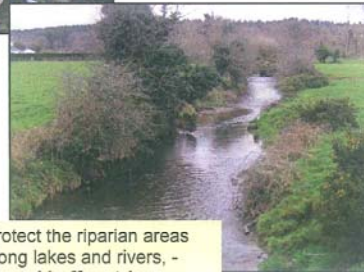


Silt and soil laden waters from construction sites, ground work and drainage can contaminate water and damage fisheries. Use settlement ponds and buffer strips to minimise discharges to waters.

Remember that if you are in the Single Payment Scheme, the Good Agricultural Practice for the Protection of Waters Regulations 2009 are also part of cross-compliance. Poor practices put the Single Payment at risk.



Be vigilant – regularly check drains and streams around the farmyard. Discolouration, smells or slime growths are signs of contamination.



Protect the riparian areas along lakes and rivers, - fenced buffer strips are recommended.



Example of a clean stream; free from excess weeds, slime growth and excess sediment.

It is important to maintain high quality in all our streams - many flow into our drinking water sources.

Other Information Leaflets available:

- ◆ Good Landspreading Practice
- ◆ Prevent Silage Pollution
- ◆ Septic Tank Guidelines
- ◆ Wetlands not Wastelands



**MONAGHAN
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WATER QUALITY AND GOOD FARMING PRACTICES



Tá Comhairle Contae Mhuineacháin ag obair chun caighdeán an uisce a chosaint agus a fheabhsú ar fud Mhuineacháin. Déanann dea-chleachtais talmhaíochta cáilíocht uisce a chosaint.

For more Information see:
www.agriculture.irlgov.ie
www.icmsa.ie
 Teagasc, Monaghan - 047 81188

May 2008

www.wfdireland.ie
 Monaghan Co Council's
 Environment Section 047 30500/30592

Silt & soils from car park and building site

More Silt! - a significant cause of habitat degradation

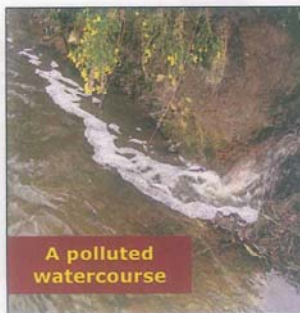
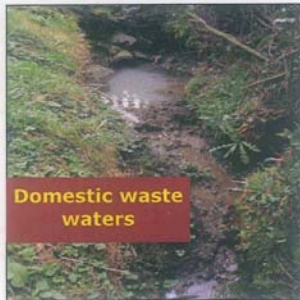
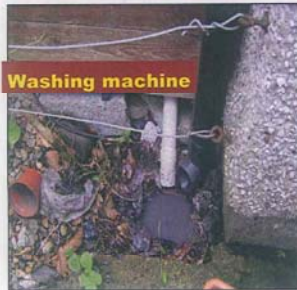


- # Misconnections
- result in discharges of wastewater from sinks & washing machines to rain water pipes and streams instead of to the public sewer or septic tank
- Perhaps a more significant cause of water pollution than we might think!



Úsáid cheart draenacha

Storm drain misconnections



Remember—only rain down the drain!

What can you do to stop this Pollution?

- ✓ Identify storm drains on your property
- ✓ Check for misconnections where sinks, washing machines or other waste waters discharge to storm drains
- ✓ Separate storm and waste water drains
- ✓ Keep yards clean, Store and handle chemicals with care



For more information on Water Pollution see:
Water Pollution Slide Show on
www.monaghan.ie/environment/water

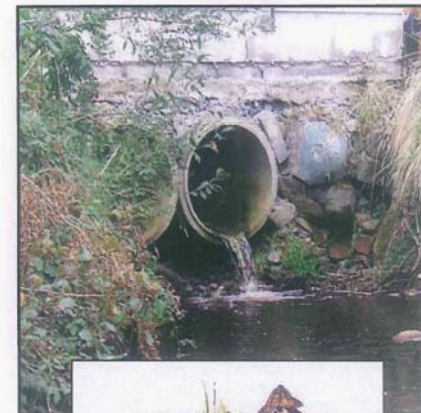
Contact Jennifer at 047 30592 for a range of information leaflets on Septic Tanks, Best Practice for Business Premises and Good Farming Practices, also available to download from our website.
Graphics by Gillian Cullen

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DEALING WITH DRAINS

ÚSÁID CHEART DRAENACHA



Staff from the Environment Section are carrying out river walks and pollution investigations. We have found that many drains are misused and polluting matter from households, farmyards and business premises is discharged to storm drains.

Sept. 2011

Bank erosion can damage river habitats – forestry, cattle access to streams and storm events can lead to bank erosion



Poor storage facilities and dumping of waste chemicals or oils can pollute surface and groundwater

A significant source of water pollution



Lawn cuttings thrown into a Monaghan stream!

– a minor polluting source



Oil Pollution

regular oil spills occur – a significant source of water pollution

Where might spills of oil arise from?



Polluting matter can contain:

- **Microorganisms** – such as faecal coliforms from animal and human wastes
- **Nutrients** (N & P) – from fertilisers and animal and human wastes
- **Chemicals** – from industrial processes, pesticide use & households
- **Organic material**
- **Silt & soils**

Some effects of water pollution:

- Microorganisms in water can be a threat to **public health**
- Excess nutrients cause **eutrophication**
- Chemical contamination may threaten **public health** and/or **degrade the habitat**
- Organic material **uses up** a lot of **oxygen** as it breaks down (biodegrades)
- Silts and soils **damage habitats**

Polluting matter can contain:

- Miocrorgánaigh
- Cothaitheigh
- Ceimiceáin
- Ábhar orgánach
- Siolta agus ithir

Some effects of water pollution:

- Buncheisteanna sláinte poiblí
- Eotrófú (saibhriú ina bhfuil cothaitheigh)
- Ídiú ocsaigine
- Díghrádú gnáthóige

In severe cases water pollution can result in algal blooms and fish mortality



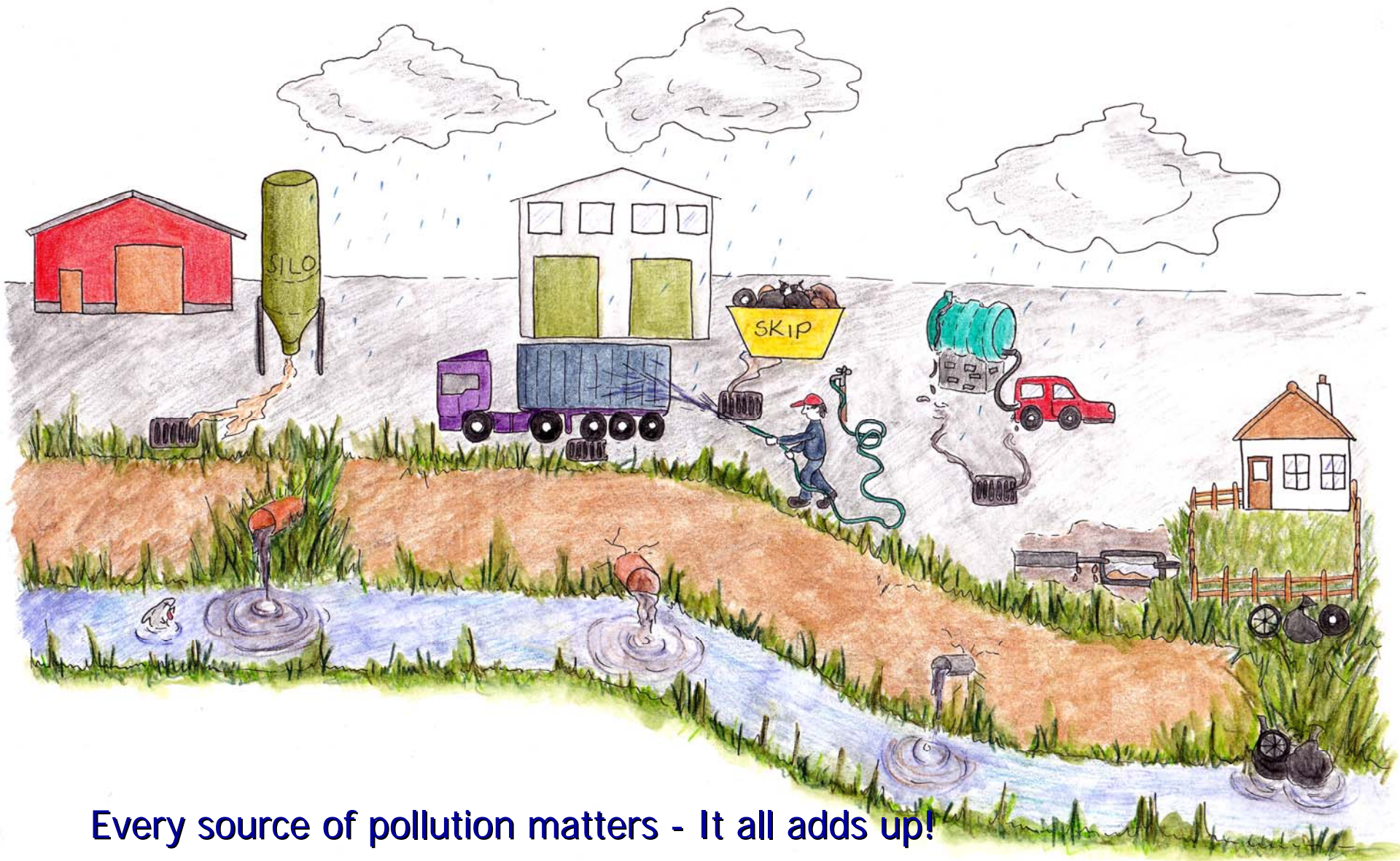
Eotrófú



Eotrófú



Slad ar Éisc

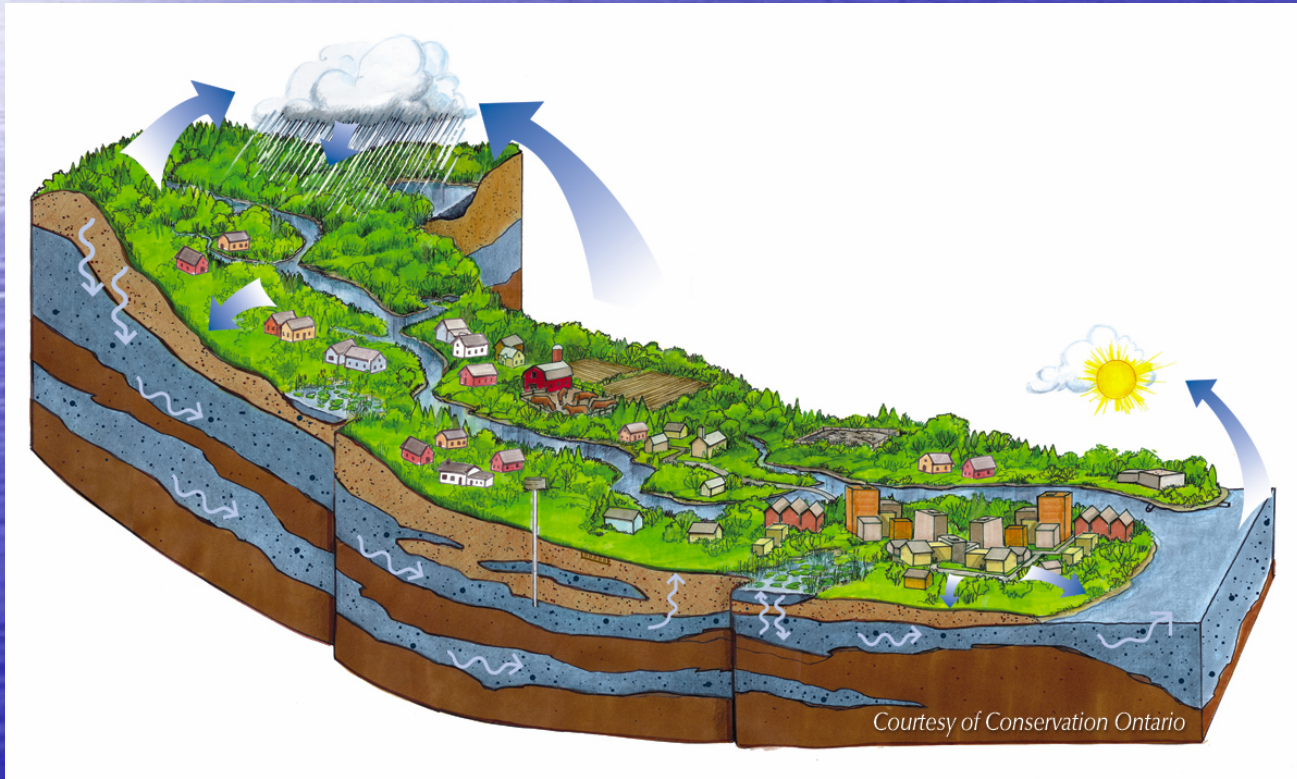


Every source of pollution matters - It all adds up!

Truailiú Uisce - tá tábhacht le gach foinse.

Review

As water moves through the catchment think about the natural contaminants and contaminants from human activities that may arise.



Courtesy of Conservation Ontario

So what can you do to reduce water pollution?

- Learn more about water and water protection
- Think about drains and what we put down our drains
- Think about the wastewaters we generate every day – how can we minimise waste
- Report serious pollution incidents

Report water pollution incidents

Tuairiscigh teagmhais truaitithe uisce

How to Make an Environmental Complaint

This leaflet explains who
you should contact and what
you can do to help resolve
environmental problems

- A. Who to Contact
- B. What to Say and Do
- C. Directory of
Relevant Agencies



Environmental
Enforcement
Network



SEE SOMETHING?

SAY SOMETHING!



Contact your local authority, the Inland
Fisheries Hotline 1890 347424 or the EPA