

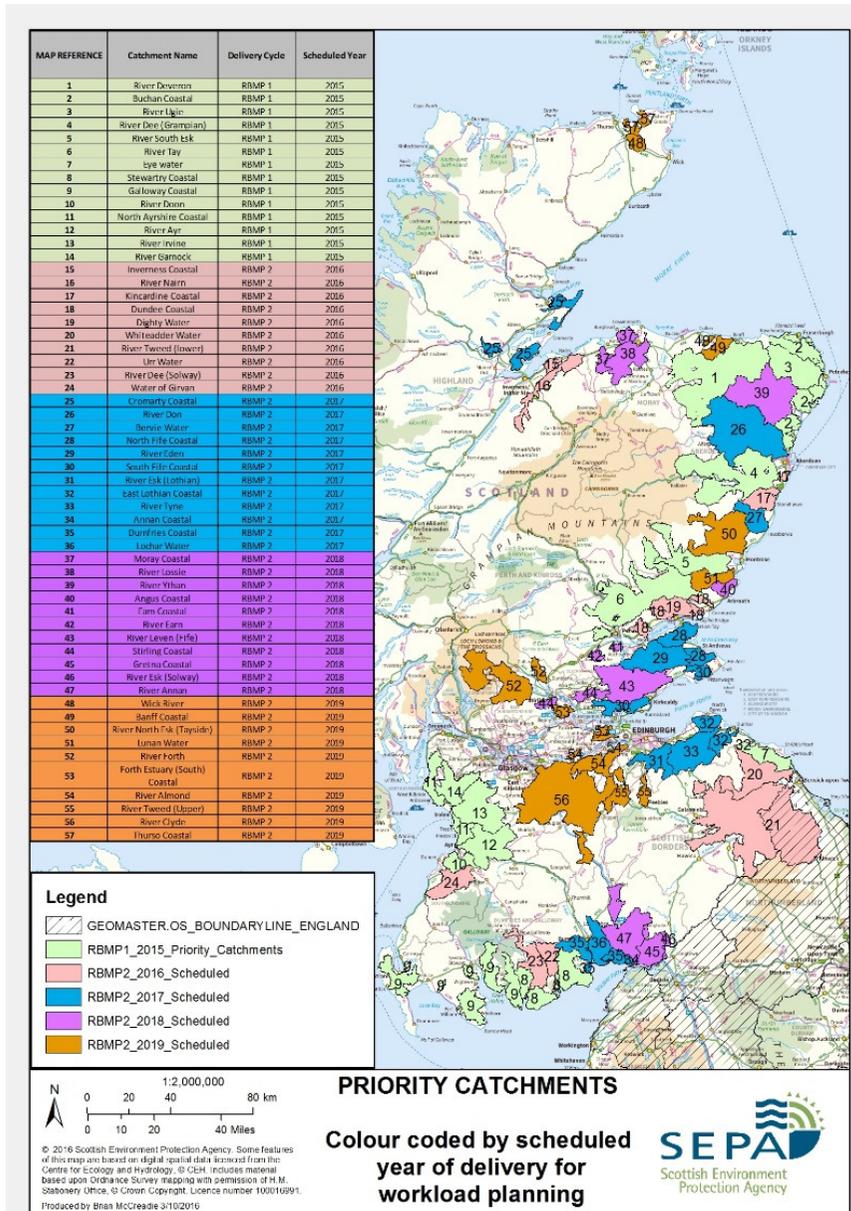
Lothian Diffuse Pollution Priority Catchments

Wull Dryburgh
Catchment Coordinator
SEPA Land Unit

Outline of presentation

- Scotland's priority catchments and SEPA's priority catchment approach
- Diffuse pollution-what is it and why is it an issue?
- Why are the Lothian catchments included?
- Mitigation methods
- The farm visit

Scotland's Priority Catchments



SEPA's Priority Catchment Approach

- More targeted approach-working with the rural sectors (agriculture, forestry etc) to achieve better water quality which benefits everyone.
- Specialist officers-understand pressures on sectors and work with them to achieve mutually acceptable outcomes.
- Been very successful in building bridges between SEPA and agricultural sector.
- Approach quoted as an exemplar in Europe.

Diffuse pollution in Scotland

- **Scotland's water quality is generally good!**
- **Rural Diffuse pollution** now the largest pollution pressure



- Individually minor, but collectively significant
 - Sources include sediment, nutrients, bacteria & pesticides
- Transported from land to burns and rivers
- Heavily influenced by rainfall

Agrochemicals

Cultivation
too close

Roads, tracks
and slopes

Overland
runoff

Groundwater

SOURCE

PATHWAY

RECEPTOR

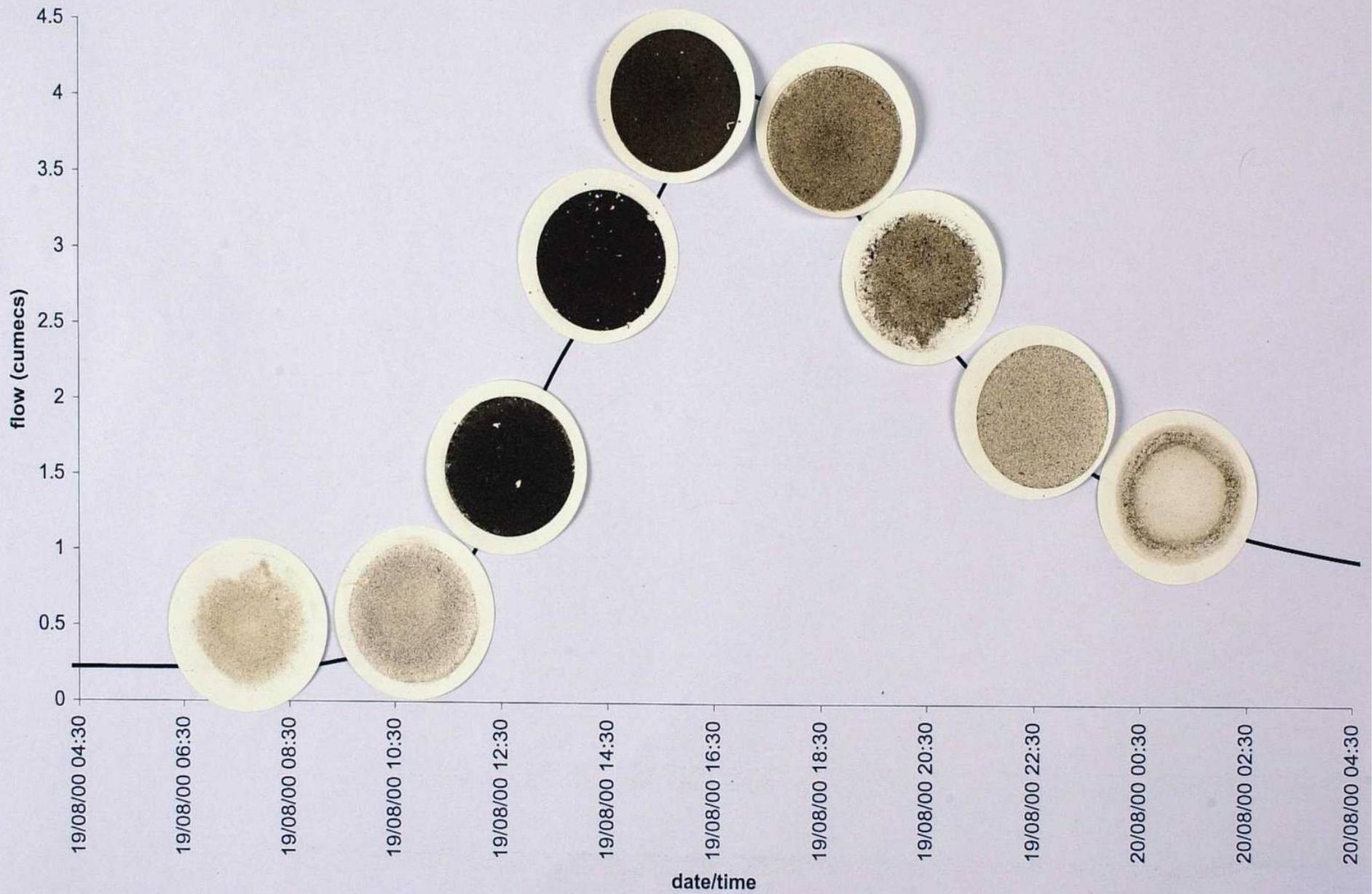
Storage &
application of
slurry/FYM

Cattle waterings

Field/road drains

Direct access

Surface waters
(ditches, burns,
wetlands etc)



Why is diffuse pollution a problem?

- Soil/sediment->increased turbidity & habitat smothering.
- Nutrients (N&P)->eutrophication of surface waters (algal blooms) and disruption to aquatic species. Drinking water also affected.
- Bacteria->impact on human (and animal) health (shellfish and bathing waters, water supplies)
- Pesticides->severe impact on aquatic species. Drinking water also affected.

=>Overall reduction in water quality

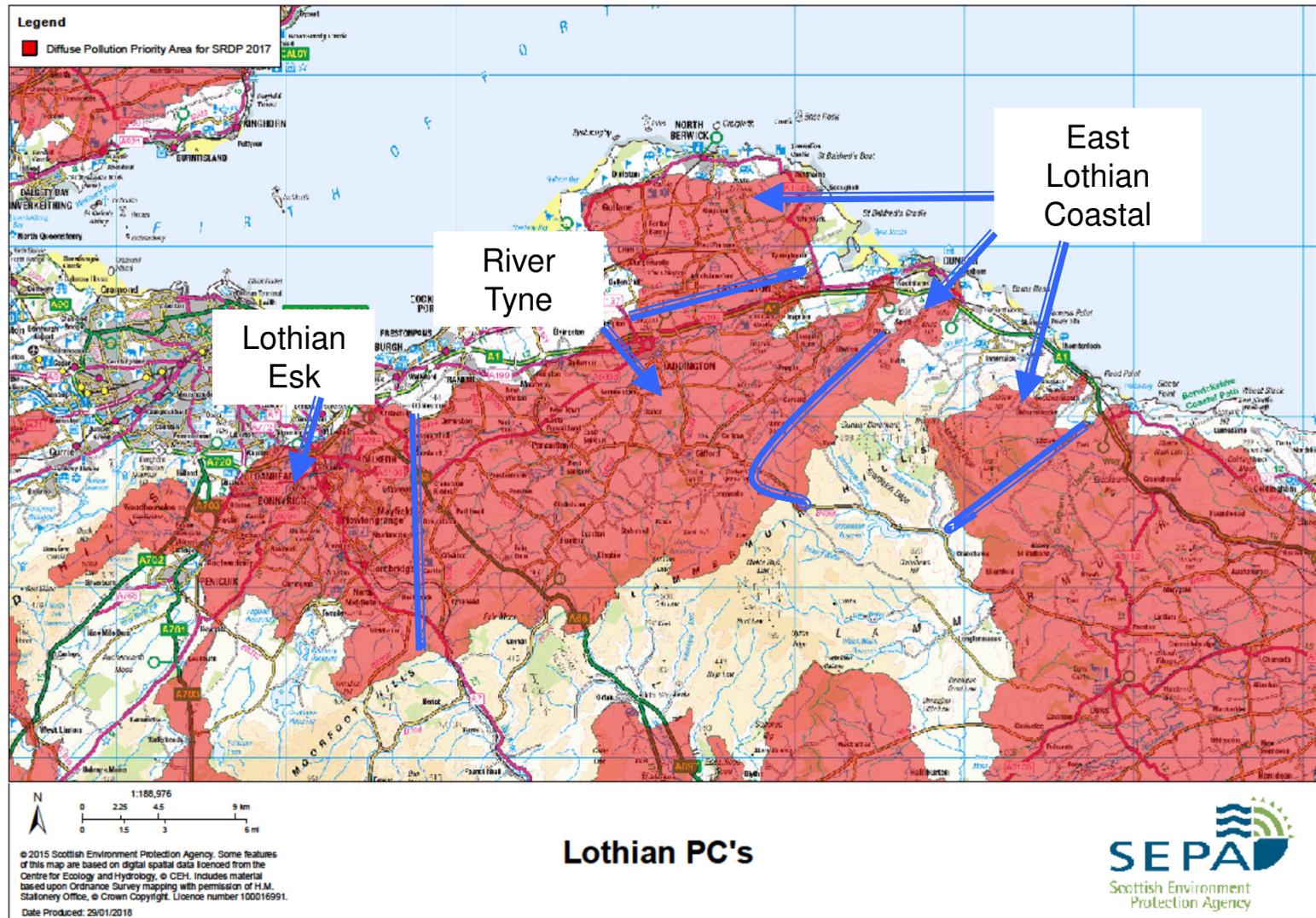
Why is diffuse pollution a problem for you?

- Loss of soil- its always the good stuff you lose!
- Loss of applied nutrients –waste!
- Livestock poaching destabilises banks, leading to soil loss and erosion.
- Transmission of livestock diseases- **Johne's**
- Soil compaction-reduces yields, increases erosion risk, more run-off-more flooding.
- Fills ditches/watercourses requiring maintenance-stop it going in in the first place!
- Cross compliance-most GBR breaches are also cross compliance breaches.

River Tweed 27th December 2015



Lothian PC's 2018



Why are these Priority Catchments?

- Poor Ecology in many waterbodies-impacted by rural diffuse pollution.
- Siltation found at many sites
- Potentially toxic impact noted at one site-possibly due to pesticides
- Some waterbodies have high phosphorus levels
- Bathing Waters at Thorntonloch, Dunbar East, Dunbar Belhaven and Fisherrow Sands all have potential to be impacted by rural diffuse pollution. Also Shellfish area at Gullane Point.

The Diffuse Pollution GBRs cover....

- Storage and application of fertiliser (GBR18)
- Keeping of livestock (GBR19)
- Cultivation and harvesting of crops (GBR20)
- Run-off from agricultural or forestry activities (GBR 21)
- Construction and maintenance of water bound roads and tracks (GBR 22)
- The handling and use of pesticides (GBR 23)
- Operating sheep dipping facilities (GBR 24)

The DP GBR's apply to all ditches, burns, rivers & lochs

Examples of GBR 18 breaches



Examples of GBR 19 breaches



Examples of GBR 20 breaches



End results...



Soil- your most valuable asset

Scotland's soils are at risk from:

- Compaction-gives rise to increased erosion and reduces yields, increased flood risk.
- Loss of soil organic matter-makes soil more susceptible to erosion and water retention, reduces yields.
- pH- low soil pH reduces fertiliser efficiency and can lead to nutrient loss to water environment, reduces yields.
- Nutrient build up-do you know your soil P status?
- Inappropriate fertiliser application-leads to run-off and greenhouse gas production.

Soil- keep what you've got and get the best out of it

- Reduce compaction- sub-soiling, sward lifting
- Know what you've got-pH, nutrient levels-put on what crop needs, take into account manures and slurries applied
- Think about soil organic matter- muck is magic!
- Cultivation techniques- conventional ploughing vs min till or no till?
- Cover crops
- Precision farming
- Tramline management
- Field drainage management



Soil problems.....



Potential solutions



Potential solutions

...it's not always about fencing



- Relocating livestock feeders & salt licks
- Providing shade/shelter away from burns
- Maintaining field drains, troughs etc
- Preventing compaction from livestock
- Stock management

Cultivation Mitigation



Farm visits

- Appointment letter will be sent out with date and time of visit-if not suitable we can either re-arrange, or do land part of visit and come back at a later date to complete visit.
- Need to meet you for around 1/2-1 hour at start of visit to get details of farm, i.e. stock types/ numbers, cropping details etc, and then do a steading assessment (looking at silage/slurry storage, animal housing, oil storage, pesticide fill/mix areas etc).
- We then walk water margins on farm.
- We always try to feedback verbally at end of visit.

At the end of the visit

- All findings discussed with you
- Agree suitable mitigation and timescales
- 12 month revisit where non-compliances identified
- If **NO** action / remedial work has been initiated then enforcement action will be taken (if GAEC breach involved this may be referred to SGRPID)
- SRDP funding should be available to mitigate issues identified on visit.

SEPA
Scottish Environment Protection Agency

Our Ref: 130045-2013-038

If telephoning ask for:
Susan Arnold
07 October 2013

J.S. Smith & Sons
Mains Farm
Dunfield Road
Perth
PH4 6CF

Dear Mr Smith

Findings of Diffuse Pollution Visit at Mains Farm

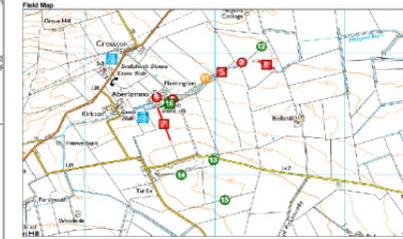
As your farm lies within a catchment affected by diffuse pollution from steading and field activities.

A summary of the key findings can be found in the any non-compliance found during the visit and the compliance. Areas at risk of causing pollution have recommended improvement measures. Where good summarised.

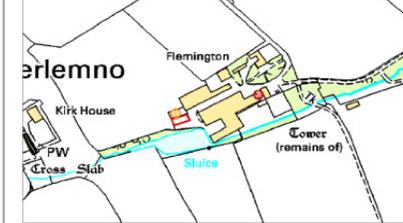
A follow up visit will be carried out within 12 months or nearer the time to arrange a suitable time to call. In any of the points raised in this letter, please contact susan.arnold@sepa.org.uk. Alternatively you can write Agency, Burnside, Monzie Road, Gairloch, TD11 1

| Non-Compliance | | | |
|---------------------|--|---|-----------|
| Map ID | What We Found | What needs to be done For information on Best Management Practices please refer to www.sepa.org.uk/bmp or see contact details above for SEPA. | Timescale |
| 2 | Oil storage systems unlocked and no padlock present. | Oil storage systems to be kept locked when not in use. Padlocks to be fitted where required. | 12 months |
| 3 | Cultivation has been carried out too close to a watercourse, ditch or wetland. Cultivating too close to the water environment can increase the risk of pollution from sediment, nutrients and pesticides and lead to bank erosion and slippage (SBR23). | Next time land is cultivated, there must be at least a 2 metre buffer strip between the edge of the cultivated land and the top of the bank of watercourses, ditches and wetlands. | 12 months |
| 4 | Other steps of floor is starting to come away and concerns raised regarding effluent collection system. It is noted that this pit is only used infrequently. | Improvements needed to floor and effluent collection system if this usage is to continue being used. | 12 months |
| Advisory | | | |
| What should be done | | | |
| Map ID | Management Practices (as applicable) or advice for SEPA. | Timescale | |
| 1 | Installing a dedicated outfall for chemicals and risk of contamination being accurate when | 12 months | |
| 5 | Verified away from the watercourse the capacity should not be allowed to be suitably sized. | 12 months | |
| 6 | land within 10 metres of any land slopes towards a watercourse, ditch or wetland pollution associated with the land should be reduced. It is recommended that a buffer strip be established along the edge of the field along the edge of other information can be referred to Management Practice 79. | 12 months | |
| 7 | buffered strip is left in place and wetlands, land by referring to 79. | 12 months | |

Field Map



Steading Map



Map Guide

- 1. Areas shown in red indicate areas that are at risk of causing diffuse pollution.
- 2. The blue line represents the watercourse. A red line in the watercourse indicates a breach of the watercourse.
- 3. Areas shown in green indicate areas that are at risk of causing diffuse pollution.
- 4. Areas shown in yellow indicate areas that are at risk of causing diffuse pollution.
- 5. Areas shown in orange indicate areas that are at risk of causing diffuse pollution.
- 6. Areas shown in pink indicate areas that are at risk of causing diffuse pollution.
- 7. Areas shown in purple indicate areas that are at risk of causing diffuse pollution.

Common steading issues

- Non-compliant oil stores (unbunded, delivery hose outwith bund, valve in base of bund)
- Leaking silage bales within 10 metres of drain/watercourse
- Unauthorised silage pits/slurry stores
- Overflowing effluent tanks/slurry stores
- Dirty yards
- Pesticide fill/mix area within 10 metres of drain/watercourse
- Broken rainwater goods

Impact of silage effluent escape



Common field issues

- **Livestock poaching**-now 80% of all issues we find
- Badly sited ring feeders
- Badly sited FYM heaps
- Cultivation issues- compaction, tramlines, potato fields not grubbed after harvest
- Broken/ineffective field drainage systems
- Application of slurry/FYM within 10 metres of watercourse

Summary

- Think of diffuse pollution mitigation as an **investment** in your business-improving business efficiency
- Use your EFA effectively-fallow field vs effective buffer strip?
- SRDP is available this year (last chance saloon!) to mitigate diffuse pollution issues
- Think out of the box...be proactive!

“if you aye dae what you aye did you’ll aye get what you aye got”

“just because its aye been disnae mean it was aye right”

Other sources of information



“Wull’s Law”

Soil, nutrients and pesticides
going down a river aren’t doing
anyone any good....

