REF.	ACTIONS	PARTNERS (lead in bold)
1.1	**Identify the most significant sources of agricultural diffuse pollution in the Dee catchment.**	**SEPA** / **MI** / **SNH** / FWAG / Land managers / Land owners / NFUS / SGRPID / SAC / SRPBA
1.1.1	Identify areas of catchment where a combination of land use and topographical characteristics results in a high risk of diffuse pollution (e.g. by modelling, inspection, examination of existing RHS records).	**SEPA** / **MI** / **SNH** / FWAG / Land managers / Land owners / NFUS / SAC / SGRPID / SRPBA
1.1.2	Implement a monitoring plan (particularly for nutrients, sediment and faecal organisms) to confirm priority sub-catchments for diffuse pollution control as well as to demonstrate improvement following action.	**SEPA** / MI
1.2	**Target diffuse pollution control to 'at risk' areas of catchment.**	**SGRPID** / SAC / FWAG
1.2.1	Raise awareness amongst farmers and land managers of the diffuse pollution risks in these 'at risk' areas.	**SGRPID** / SAC / FWAG
1.2.2	Encourage farmers in 'at risk' areas to apply for RDCs under Tiers 2 and 3.	**SGRPID** / SAC / FWAG
1.2.3	Identify and recommend the most suitable crops and techniques for use in 'at risk' areas.	**SGRPID** / SAC / FWAG
1.3	**Promote good practice and the adoption of land management initiatives among farming communities catchment-wide e.g. promotion of RDCs, CASS project.**	**SGRPID** / **AC** / **CNPA** / CLBAP / **DDSFB** / **DSFIA** / FBWG / **FWAG** / Land owners / Land managers / LEAF/ MI / NELBAP / NFUS / RSPB / **SAC** / **SEPA** / **SNH** / SRPBA
1.3.1	Host hands-on workshops to promote initiatives such as the 4 Point Plan and revised NVZ Action Programme.	**SAC**
1.3.2	Advise on funding available for agri-environment schemes.	**SGRPID** / **SAC** / **FWAG**
1.3.3	Provide assistance in finding alternative funding sources for environmental improvements and land management e.g. creation of farm ponds or provision of water troughs.	**SNH** / **DDSFB** / **DSFIA** / SGRPID / FWAG / SAC / SEPA / Land owners / SRPBA
1.3.4	Use existing advisory activities e.g. SEPA diffuse pollution audit.	**SEPA**
1.3.5	Seek mechanisms for the provision of soil-sampling and advice to farmers to demonstrate the benefits of measures to reduce diffuse pollution.	**SGRPID** / SAC / SEPA
1.3.6	Promote existing demonstration sites as examples of best practice.	**SGRPID** / **AC** / **CNPA** / **DDSFB** / DSFIA / FBWG / FWAG / Land owners / Land managers / LEAF/ MI / NFUS / RSPB / SAC / SEPA / SNH / SRPBA
1.4	**Implement and promote best management practices in order to achieve catchment-wide reductions in diffuse pollution.**	**Land managers** / **Land owners** / **SRPBA** / **NFUS** / **SGRPID**
1.4.1	Seek new funding sources outside of the RSS.	**SGRPID**
1.5	**Ensure that relevant authorities adopt a coordinated partnership approach to diffuse pollution control in the Dee catchment.**	**SEPA** / **SGRPID** / **SNH** / **NEAAG** / **NERPAC** / **AC** / **ACC**
1.5.1	Ensure that remedial actions to address diffuse pollution issues are prioritised via cooperation between the NEAAG and NERPAC.	**SEPA** / **NEAAG** / **NERPAC**
1.5.2	Ensure that farm waste management plans fulfil the statutory obligations of all regulatory organisations	**SEPA** / **AC** / **ACC**
1.6	**Use/adhere to General Binding Rules in order to control diffuse pollution from farms within the Dee catchment. Ensure those affected are aware of their roles and responsibilities.**	**SGRPID** / NFUS / SEPA / SNH

Acronyms are listed in the centre of this Action Card

1.Diffuse Pollution.indd Spread 1 of 2 - Pages(4, 1)



diffuse agricultural pollution

1 WATER QUALITY

OBJECTIVE 1. Make planned and coordinated reductions in diffuse agricultural pollution.

BACKGROUND

Agriculture is one of the major land uses in the Dee catchment that gives rise to diffuse pollution, the most significant cause of poor river water quality in the catchment (SEPA, 2005).

ISSUES

- Application of manures or inorganic fertilisers to land over and above the rate required by crops can introduce an overload of phosphorus and nitrogen compounds to surface waters via rainfall run-off or groundwater flow. The discharge of effluent from agricultural silage pits can also raise nutrient levels. *These nutrients can promote excessive aquatic plant growth and decay, favour certain weedy species over others, and cause severe reductions in water quality – a process called eutrophication.*
- Poor land management can lead to soil erosion and sediment deposits. On steep ground, supporting infrastructure such as access roads and tracks can also be significant sources of silt and soil, which are readily eroded and transported. *Eroded soil particles can smother life on the river beds, which includes freshwater pearl mussels and developing salmon eggs. They can carry other pollutants, such as pesticides and bacteria*.
- Rain falling directly onto farmyard areas contaminated with animal faeces can wash significant levels of contaminants into watercourses leading to elevated levels of micro organisms in rivers. Livestock with direct access to burns and rivers also have the potential to pollute watercourses with nutrients and faecal bacteria. *Bacterial levels may cause harm to bathers in the river (especially if at low water, close to agricultural sources or outfalls from sewage plants).*
- Oil escaping from badly managed storage areas and leakage, spills, overspray or illegal disposal of pesticides and herbicides *can harm aquatic life.*
- All of the above sources of diffuse pollution can pollute public drinking water resources and increase the cost of supplying them.
- By its nature, diffuse pollution is dispersed across a wide area so its control needs to be coordinated over the whole catchment.

EXISTING / RECENT INITIATIVES

National

- The Water Framework Directive (WFD) requires new measures to be implemented to control diffuse pollution. General Binding Rules specifically relating to diffuse pollution have been developed under the Controlled Activities Regulations (CAR) 2006.
- The reform of the Common Agricultural Policy (CAP) supports more sustainable farming practices:
  - Under Tier 1, in order to receive the Single Farm Payment, farmers must comply with Statutory Management Requirements (which in part relate to conservation and pollution prevention) and must keep land in Good Agricultural and Environmental Condition (GAEC).
  - Rural Development Contracts provide additional financial incentives for good environmental management.
  - Regional Proposal Assessment Committees (RPACs) prioritise the areas for funding/grants
  - The Rural Stewardship Scheme, the Scottish Forestry Grant Scheme and the Scottish Natural Heritage (SNH) Natural Care Scheme have, in part, been incorporated into the Scottish Rural Development Programme (SRDP).



Diffuse pollution from soil runoff

WHO IS INVOLVED?

- Aberdeenshire Council
- Aberdeen City Council
- Cairngorms Local Biodiversity Action Plan
- Cairngorms National Park Authority
- Dee District Salmon Fishery Board
- Dee Salmon Fishery Improvement Association
- Farming & Wildlife Advisory Group
- Landowners & land managers
- Linking Environment & Farming
- The Macaulay Institute
- National Farmers' Union Scotland
- North East Area Advisory Group
- North East Local Biodiversity Action Plan
- North East Regional Proposal Assessment Committee
- Royal Society for the Protection of Birds
- Scottish Agricultural College
- Scottish Environment Protection Agency
- Scottish Government Rural Payments & Inspections Directorate
- Scottish Natural Heritage
- Scottish Rural Property & Business Association

Further copies can be downloaded at www.theriverdee.org. For further information contact the Dee Catchment Officer c/o The Macaulay Institute, Craigiebuckler, Aberdeen AB15 8QH Telephone: 01224 498200 email: info@theriverdee.org

deecatchment partnership

- Issues relating to soil erosion form a central element of existing initiatives to promote best management practice, most noticeably GAEC, the Farm Soils Plan and the Forests and Water Guidelines (F&WG IV).
- Farmers in areas of the catchment designated as a Nitrate Vulnerable Zone (NVZ) – the areas outside of Aberdeen City to the east of Banchory - must comply with regulations regarding nutrient additions to soils. The forestry sector voluntarily complies (F&WG IV).
- The Scottish Government is preparing changes to the Action Programme for NVZs in Scotland. It proposes to:
  - Limit the quantities of fertilisers applied.
  - Increase the length of the closed periods during which the application of certain types of fertilisers is prohibited.
  - Apply these closed periods to all soil types.
  - Introduce an increase in manure efficiency.
- Scottish Water (SW) and the Scottish Environment Protection Agency (SEPA) are establishing a network of groundwater sampling points which SEPA will sample as part of the groundwater characterisation.
- The Voluntary Initiative, a programme of measures agreed with Government to minimise the environmental impacts of pesticides, has been introduced (in place of a proposed tax on pesticides used in agriculture and horticulture).
- Farmers are encouraged to identify the possibilities for minimising waste by drawing up comprehensive Farm Waste Management Plans.
- Farmers are encouraged to undertake Nutrient Budgeting (a comparison between all the sources of nutrients available to the producer and the requirement of nutrients to meet the crop and soil needs).
- General Binding Rules (GBRs) have been introduced under The Water Environment (Controlled Activities) (Scotland) Regulations 2005 to control the impact of diffuse pollution on the water environment from rural land use. The GBRs will apply to the use of fertilisers, keeping of livestock, land cultivation, drainage, construction of roads and tracks and the application of pesticides and sheep dip. The Regulations also contain an amendment to the Silage, Slurry and Agricultural Fuel Oil (Scotland) Regulations. This amendment allows lightly contaminated water from some areas of the farm steading, which is currently required to be stored and spread to land, to be treated through a Constructed Farm Wetland before discharge to the water environment The GBRs are based largely on existing codes of good practice drawn up in conjunction with industry (consultation papers were published in 2006 & 2007).

Regional

- The North East Area Advisory Group (NEAAG) will address diffuse pollution issues in areas of the catchment identified as being 'at risk' of failing to meet Good Ecological Status.

Catchment

- River Dee Trust surveys in 1999 and 2007 have identified areas of the catchment with diffuse pollution problems.
- The Cairngorms Local Biodiversity Action Plan (LBAP) addresses related issues and is involved in raising awareness.
- The Cairngorms Park Plan addresses related diffuse pollution issues.
- A range of best practice measures (such as different types of cattle waterings and buffer strips) have been implemented in the Loch Davan and Tarland catchments by the 3-Dee Vision project.
- The 3-Dee Vision Project has produced a Rainfall Questionnaire which enables farmers to trace the path rainwater takes across the farm, and highlights measures that will ensure that it stays clean before running into watercourses.
- Improvements to riparian forest management are being undertaken on the Crynoch Burn in order to reduce sediment as part of the Conservation of Atlantic Salmon in Scotland (CASS) initiative.
- Financial help for environmental improvements such as fencing and waterings has been provided through the Dee Habitat Enhancement Project.

ACTIONS REQUIRED

- Identify the areas of the catchment that are vulnerable to different types of diffuse pollution.
- Target control of diffuse pollution in areas identified to be most at risk.
- Promote best management practices for agriculture throughout the catchment by helping farmers to identify problem areas and implement good management of soil, nutrients, agro-chemicals, manures and slurry. This work should be assisted by financial incentives, largely under the new CAP reform.
- Implement and promote good agricultural practice for the reduction of diffuse pollution. For example: nutrient budgeting, buffer strips, off-stream watering, constructed wetlands and reedbeds, contour ploughing, riparian woodland creation (whilst ensuring positive management of remaining areas of herb rich grassland), appropriate stocking density, farm waste management plans, regular maintenance of farm infrastructure, the Voluntary Initiative to reduce pesticide pollution, minimising poaching around feeding rings, selecting drier fields for winter grazing of cattle, avoiding overworking and compaction, use of woodland to reduce diffuse pollution.
- Ensure approaches to diffuse pollution control are coordinated.





Good agricultural practice for reducing diffuse pollution in the Tarland catchment. Before (left) and after (right) the creation of buffer strips to prevent cattle from accessing the burn and a small wetland area to intercept run-off (3-Dee Vision).

LEGISLATION

See Action Pack Annex for information sources

- Bathing Waters (Classification) (Scotland) Direction 1999
- Bathing Waters (Classification) (Scotland) Regulations 1991
- Cross Compliance (Statutory Management Requirements and Good Agricultural and Environmental Condition)
- Nature Conservation (Scotland) Act 2004
- Nitrate Vulnerable Zone (NVZ) (Scotland) Regulations 2003.
- NVZ Action Programme
- NVZ (Grants) (Scotland) Regulations 2003.
- Salmon (fish passes and screens) (Scotland) Regulations 1994
- Salmon Act 1986
- Silage, Slurry and Agricultural Fuel Oil (Scotland) Regulations 2003
- The Conservation (Natural Habitats and Species) Regulations 1994
- Water Environment and Water Services (Scotland) Act 2003
- Water Environment (Controlled Activities) (Scotland) Regulations 2005
- Water Environment (Diffuse Pollution) (Scotland) Regulations 2008
- Wildlife and Countryside Act 1981

GUIDELINES AND INFORMATION

See Action Pack Annex for information sources

- 3-Dee Vision Rainfall Questionnaire for Farmers
- 3-Dee vision website has a comprehensive list of links to further information
- Code of practice for suppliers of pesticides to agriculture, horticulture and forestry
- Code of practice for the Management of Agricultural and Horticultural Waste
- Code of practice for the safe use of plant protection products in Scotland
- Conservation of Atlantic Salmon LIFE project
- Diffuse Pollution Initiative (SEPA)
- Farm Soils Plan
- Farm Waste Management Plans
- Farming and Wildlife Advisory Group (FWAG)
- Forests and Water Guidelines 4th Edition (Forestry Commission)
- Guidelines for farmers in Nitrate Vulnerable Zones
- Linking Environment and Farming (LEAF)
- Prevention of Environmental Pollution from Agricultural Activities (PEPFAA) Code of Good Practice 2005
- PEPFAA DOs and DON'Ts guide
- Salmon (fish passes and screens) (Scotland) Regulations 1994 best practice guidelines
- SEPA Best Management Practices (handbook available on website)
- Sheep Dipping Code of Practice for Scottish Farmers, Crofters and Contractors – Groundwater Regulations 1998 (Scottish Governmant Rural Payments ans Inspections Directorate)
- Targeted Inputs for a Better Rural Environment (TIBRE)
- The 4 Point Plan
- The Voluntary Initiative

BENEFITS TO PROTECTED SPECIES

The following specially protected species will benefit from the Actions: Grass wrack pond weed / Pillwort / Freshwater pearl mussel / Common frog / Palmate newt / Northern blue damsel fly / *Brachyptera rustic*a (a stone fly) / Atlantic salmon / Brook lamprey / River lamprey / Sea lamprey / Daubenton's bat / Otter / Water vole / Goldeneye / Osprey

REFERENCES

SEPA, 2005. Characterisation and impacts analyses required by Article 5 of the Water Framework directive.



RELATED ACTION CARDS

2. Pesticides & sheep dip
3. Woodland management
4. Road and access track drainage
5. Surface water drainage
8. Use of organic fertilisers
12. Bathing water quality at Aberdeen beach.
26. Atlantic salmon
27. Freshwater pearl mussel
34. Tarland Burn
35. Loch Davan
36. Loch of Skene

AC Aberdeenshire Council **ACC** Aberdeen City Council **CLBAP** Cairngorms Local Biodiversity Action Plan **CNPA** Cairngorms National Park Authority **DDSFB** Dee District Salmon Fishery Board **DSFIA** Dee Salmon Fishery Improvement Association **FWAG** Farming & Wildlife Advisory Group **LEAF** Linking Environment & Farming **MI** The Macaulay Institute **NFUS** National Farmers' Union Scotland **NEAAG** North East Area Advisory Group **NELBAP** North East Local Biodiversity Action Plan **NERPAC** North East Regional Proposal Assessment Committee **RSPB** Royal Society for the Protection of Birds **SAC** Scottish Agricultural College **SEPA** Scottish Environment Protection Agency **SGRPID** Scottish Government Rural Payments & Inspections Directorate **SNH** Scottish Natural Heritage **SRPBA** Scottish Rural Property & Business Association

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