The rural diffuse pollution partnership for improving Scotland's waters

dpmag

Rural diffuse pollution plan for Scotland

Contents

1. Introduction 3

2. Background 5
What is diffuse pollution? 5
What impact is rural diffuse pollution having in Scotland? 5
Where does diffuse pollution come from? 5
What is required to tackle diffuse pollution? 5

3. Environmental objectives for rural diffuse pollution 7

4. Overview of the strategy 8
The need for a strategic approach 8
Summary of the strategy to manage rural diffuse pollution 8
Developing and reviewing measures nationally 10
Economic measures to support changes in land management 11
Regulation of diffuse pollution 12
Advice on diffuse pollution 12
Research required for further development of the strategy 12

5. The national campaign 13
What is the national campaign? 13
The national awareness raising campaign 13
National inspection programme 14
Monitoring the success of the national campaign 15

6. Priority catchments 17
Identification of priority catchments 17
Priority catchment approach 20
Characterisation of the catchments and evidence gathering 22
Awareness raising in priority catchments 22
Engagement and audit on the ground 23
Further support for land managers 23
Monitoring and reporting in priority catchments 24

7. Overall monitoring and reporting 25
Monitoring 25
Environmental monitoring 25
Understanding and awareness 25
Changes in land use/management 26
Collecting cost data 26
Research 26
Scale and frequency of assessment 26
Reporting 27

1. Introduction

This implementation plan is to ensure that key stakeholders in Scotland work in a co-ordinated way to reduce diffuse pollution from rural sources, which will in turn help to protect and improve the water environment and deliver the targets set out in the river basin management plans for the Scotland and the Solway Tweed river basin districts.

The delivery of this plan is the responsibility of the Diffuse Pollution Management Advisory Group (DPMAG). DPMAG was set up on the request of the Scottish Government after their consultation *Scotland's Waters: Future Directions* (which accompanied the consultation on the draft river basin management plans [RBMP] for the Scotland and Solway Tweed river basin districts), as a statutory group under section 17 of the Water Environment and Water Services (WEWS) Act 2003. The group was set up to:

- help create a robust governance, decision-making and co-ordination framework for the effective delivery of rural diffuse pollution RBMP actions in Scotland;

- ensure input from a cross-section of rural, environmental and biodiversity interests.

The Scottish Government considers co-ordination of the management of rural diffuse pollution through DPMAG to be critical to the effective management of Scotland's water environment and expects a strong sense of commitment from SEPA to drive the work of DPMAG forward. Awareness raising and engagement with land managers is fundamental to reducing the impacts of rural diffuse pollution. The efficient planning and delivery of this activity will be most effectively delivered through the contribution of a range of organisations at national and local level.

This plan has been developed by DPMAG and progress will be monitored by the group and reported to the Scottish Government and to the national advisory group for river basin management planning in Scotland. More information can be found in the role and remit of the group and national roles and responsibilities of DPMAG members (Appendix 3).

This document is comprised of three key parts:

- this summary document;
- an action plan (Appendix 1);
- a national communications plan (Appendix 2).

This is a national plan; further information on delivery at area and catchment level in can be found in the individual area management plans. Information about specific water bodies can also be accessed through the interactive map. This plan will be reviewed regularly through the river basin management planning cycle.

Extract from the Scotland river basin management plan

We all enjoy the benefits of a clean and healthy water environment. Our rivers, lochs and groundwater provide all our drinking water and farmers need water for growing our food.

Water is still at the heart of the economic success for many of our rural towns and villages. Our world-renowned whisky and fish farming industries depend on its high environmental quality. Our rivers, lochs, estuaries and coasts attract large numbers of people of all ages, from home and overseas, to take part in a wide range of recreational activities.

Our waters support a great diversity of wildlife and a significant number are identified as protected areas because of their importance for the conservation of internationally rare or endangered species. Some of the best salmon runs in the UK are found in our rivers. Many of our best known landscapes are associated with water. In short, our water environment is an integral part of Scotland's cultural fabric.

2. Background

What is diffuse pollution?

Diffuse pollution is pollution arising from urban and rural land-use activities spread across a catchment or sub-catchment. The sources are heavily influenced by rainfall and can be individually minor but collectively significant.

What impact is rural diffuse pollution having in Scotland?

While management of the water environment has led to huge improvements in water quality over the last 50 years, pollution remains one of the most common causes of water bodies not reaching good status. In the Scotland river basin district, 18% of all water bodies are less than good status due to impacts on water quality.

Much of the pollution affecting the water environment is from diffuse sources. The main diffuse pollutants are phosphorus, faecal pathogens, nitrates and pesticides principally affecting rivers, bathing waters and groundwaters respectively.

Diffuse pollution from rural sources also has a major impact upon protected areas such as those supporting economically important shellfish, designated as bathing waters, providing water for human consumption or supporting species or habitats identified as requiring special protection under European legislation.

Where does diffuse pollution come from?

Diffuse pollution in the rural environment comes from a range of land use activities including agriculture, forestry and mining, and areas maintained for recreational purposes such as parks, green spaces and golf courses. Septic tanks from individual dwellings or small clusters of properties can also contribute.

Individual sources include run-off from ploughed fields or bare soil, farm yard drainage or pesticides or fertilisers washed or draining into the water environment. Each source may only have a small effect on the life in the water environment or water quality, but the impacts of a large number of sources can be significant.

What is required to tackle diffuse pollution?

Experience of managing rural diffuse pollution controls suggests the following key principles are likely to be successful:

- a catchment approach;
- a sound evidence base to assess sources, transport, target measures and get stakeholder buy-in;
- one to one advice and rural site visits to identify hotspots, target measures and cost-effectively change management practices;
- partnership approaches and stakeholder involvement/led;
- a combination of regulatory, economic and voluntary measures.

The catchment approach has been successfully implemented at a range of scales in Scotland and elsewhere in the UK. Lessons learnt from such projects have been incorporated into the approach described in this document. Examples include full catchment management plans, such as the Loch Leven catchment management

plan, and projects focusing more specifically on diffuse pollution, such as the Lunan Lochs natural care scheme and the Brighouse Bay project. In addition, SEPA has implemented catchment approaches to mitigating rural diffuse pollution via Environmental Improvement Action Plans, including for bathing waters. However, it is worth noting that monitoring data is limited on the effect of measures at the catchment scale.

A sound evidence base is required to support the mitigation of rural diffuse pollution, both in terms of stakeholder buy-in and accurately targeting measures to achieve the most cost-effective improvements. SEPA holds good information on sources of pollutants, their transport pathways and processes as well as their impact. This information will be made available in a user-friendly format to land managers and their advisors regarding their local area.

3. Environmental objectives for rural diffuse pollution

The river basin management plans for the Scotland and the Solway Tweed river basin districts set out our ambition to improve from 63% of water bodies in Scotland at good status to 97% by 2027. This plan will contribute by enabling stakeholders from a range of sectors and organisations to co-ordinate activities and resources to tackle diffuse pollution. It will also help to ensure that resources are used efficiently, and where possible other pressures on the water environment will be tackled at the same time.

This plan will also be key to delivering improvements to protected areas affected by diffuse pollution. More information on protected areas can be found in Chapter five of the Scotland and the Solway Tweed plans.

Through improving water bodies affected by diffuse pollution we have the potential to deliver benefits to biodiversity and flood management planning, and to restore beds, banks and shores that have been altered in the past. We can also help to increase our resilience to climate change and to control the introduction and spread of invasive non-native species, and. The implementation plan will enable stakeholders in these sectors to engage with the process of tackling diffuse pollution.

Sections 5 and 6 of this plan summarise two different tiers of action; national actions and those focused in specific catchments. The improvements that are expected to be delivered by these tiers are explained in these sections.

4. The strategy

This section provides an overview of the strategic approach DPMAG is developing to mitigate rural diffuse pollution and to achieve our objectives.

The need for a strategic approach

Diffuse pollution was highlighted as a major impact on the Scottish water environment in characterisation reports in 2005, and significant water management issues reports in 2007. Since then work has continued to develop measures to address diffuse pollution through a number of routes such as regulation, economic support and catchment management initiatives. The river basin management plans published in 2009 set clear and ambitious targets for environmental improvement through the reduction of diffuse pollution in Scotland.

A wide range of factors influence or are affected by diffuse pollution, including:

- economic forces and incentives;
- cross-compliance requirements;
- regulations;
- a wide range of stakeholder interests (eg fishing, drinking water, conservation, forestry and agricultural).

These factors, coupled with the nature and extent of diffuse pollution sources, make it clear that a national, strategic and co-ordinated approach is required.

This plan must enable us to integrate the factors that influence diffuse pollution and co-ordinate resources in Scotland so they are used effectively. Clear and consistent messages must be delivered to land managers by all organisations.

The strategy outlines how we will approach the management of diffuse pollution. The action plan and communications plan detail who will do what, where and when. DPMAG will continuously developed the strategic approach described in this plan.

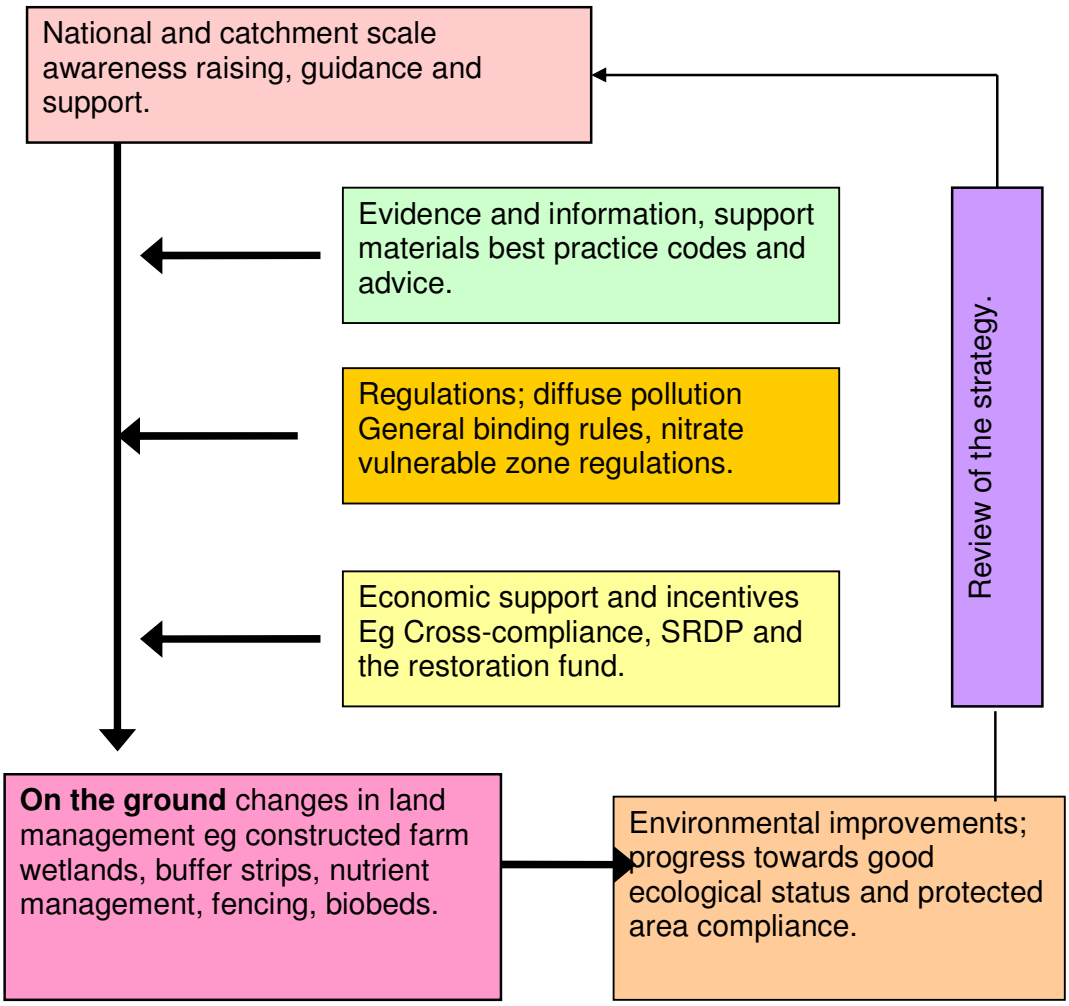
Summary of the strategy to manage rural diffuse pollution

The strategy will involve national co-ordination and management of diffuse pollution through DPMAG. The roles of the key stakeholders in this work are outlined in Appendix 3. This will mean we:

- continue to improve our understanding of the causes of diffuse pollution across Scotland and monitor change;
- co-ordinate our resources (science, economic support, provision of advice, and regulatory support);
- develop and deliver a communications strategy and national and local communications plans.

The actions set out in this plan will be delivered through activities at a national and a local level. The strategy relies on the effective coordination of awareness raising, economic measures and regulation. Figure 1 summarises how we expect these elements to result in land managers making changes to the existing management practices to address diffuse pollution.

Figure 1: Implementation of the strategy



To ensure we identify and target resources effectively we have identified three types of water body:

- water bodies currently at good or high status where no deterioration in status is allowed;
- water bodies currently less than good status but where the scale of improvement in the status is relatively small and can be reached with compliance with the Diffuse Pollution General Binding Rules[1] (DP GBRs);
- water bodies currently less than good and where the status is not expected to reach good status without significant change in land management practices.

We have also used information on the effect of diffuse pollution on the condition of protected areas. This has identified areas of Scotland where we have evidence that diffuse pollution is affecting, or has the potential to affect, water used for drinking

[1] The Water Environment (Controlled Activities) (Scotland) Regulations 2005 as amended

water supplies, bathing waters or habitats and species important on a European scale.

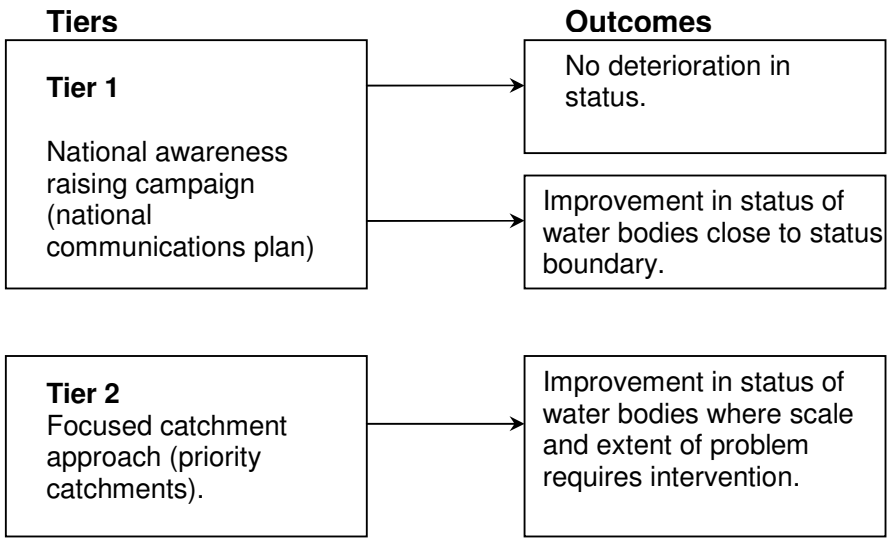
A two tiered approach has been developed to target protection and improvements to water bodies in these categories. The tiers are:

- a national campaign of awareness raising, guidance, training and inspections in relation to the impacts of diffuse pollution;
- a targeted catchment approach (priority catchment approach) with a sequential process of evidence gathering, awareness raising, and farm visits to identify hotspots, target measures and provide one to one advice.

It is expected that actions as a consequence of the national awareness raising campaign will prevent water bodies from deteriorating in status and will result in improvements in status where water bodies are close to a status boundary.

The focused catchment approach will be required to ensure sufficient changes are made to land management practices in order to make the improvements. Further information on these elements of the plan can be found in Section 5 and Section 6 of this document. The use of national and focused work to achieve improvements is summarised in Figure 2.

Figure 2: Summary of the two tier approach



Through the national campaign, DPMAG will ensure the coordination of activities to reduce diffuse pollution on protected areas across Scotland.

Action area 1: DPMAG will co-ordinate activities to reduce diffuse pollution in protected areas

Developing and reviewing measures nationally

Nationally DPMAG will work together as a group, through sub-groups or as member organisations to ensure the co-ordination of resources focusing on specific areas

such as funding, research, resources for training and advice, effective communication and regulation enforcement and developing a national communications plan and process for working in priority catchments.

The process relies on:

- a sound evidence base to link cause and effect;
- clear information;
- an effective communication strategy that ensures land managers are aware of the problems and their roles, and the benefits;
- appropriate regulatory measures;
- appropriate guidance and advice;
- economic support processes aligned to priorities and most effective methods of reducing diffuse pollution;
- sector buy-in and assistance with communication and co-ordination of the strategy.

Action area 2: DPMAG will review and aim to influence the range of national measures available including advice, incentive and regulation to ensure the management of diffuse pollution is effective.

Economic measures to support changes in land management

The Scotland Rural Development Programme (SRDP) contains several measures to benefit water quality. For the purposes of this document, Land Manager's Options (LMO) will be considered as part of the national campaign and Rural Priorities (RP) as part of the targeted priority catchment approach.

LMO provides support for the provision of economic, social and environmental improvements across Scotland. Land managers can apply for funding on a range of options under LMO with a maximum allowance for the business. They are non-competitive and open to all land managers with land in Scotland. Options available include several which, if appropriately sited, will contribute to water quality improvement. These include retention of winter stubbles, management of grass margins, beetle-banks in arable fields and management of conservation headlands.

Cross Compliance is made up of a series of statutory management requirements (existing legislative standards relating to public health, animal and plant health, environmental protection and animal welfare) and Good Agricultural and Environmental Conditions standards (GAEC). GAEC measures are mandatory and must be followed in order to comply with Cross Compliance. Several GAEC measures relate to soil quality and as such are relevant to diffuse pollution control.

The national awareness raising campaign will also promote and provide guidance on the SRDP measures relevant to water quality and GAEC.

SEPA has received funding from the Scottish Government to restore and enhance the condition of Scotland's water environment. The restoration fund aims to deliver improvements to rivers, lochs, estuaries and coastal and wetland environments. In some circumstances this scheme can also be used to fund measures to prevent diffuse pollution.

A review and assessment of several of the available measures, particularly the SRDP and GAEC, will be carried out to assess how they can best be utilised in the proposed strategy.

Action area 3: DPMAG will review effectiveness of economic measures influencing diffuse pollution mitigation eg SRDP, cross compliance, restoration fund.

Regulation of diffuse pollution

The DP GBRs are central to the strategic approach we are taking to reduce diffuse pollution in Scotland. They set a statutory level of good practice which is expected to be in place nationally. A national compliance assessment of the DP GBRs is undertaken through the SEARS partnership. The effectiveness of DP GBRs will be assessed and reviewed through this plan.

Advice on diffuse pollution

Advisory support to land managers can greatly improve the effectiveness of measures tackling diffuse pollution, by increasing the likelihood of behavioural change and targeting measures to the most appropriate locations. Advice is provided to land managers from several different sources and it is important to ensure that advisors are appropriately trained and have access to materials for their clients that deliver a consistent message on diffuse pollution. The national awareness raising campaign will need to address these issues.

There may be a need for more targeted advice to be supplied in priority catchments, where diffuse pollution pressures are not reduced by compliance with the DP GBRs. There is a need to review how such advice can be provided.

Action area 4: Review the advice given to land managers on diffuse pollution and identify improvements eg in training, materials, funding, targeting, availability etc.

Research required for further development of the strategy

Continued investment in research, both in Scotland and internationally, will be required to develop an accurate and up-to-date evidence base on diffuse pollution. This should cover the impacts of diffuse pollution and the effectiveness of measures to tackle it.

Action area 5.1: DPMAG will work to influence future research in Scotland and, where possible, in the UK to directly benefit the management of diffuse pollution.

Action area 5.2: Link outcomes of research to the strategy and process of managing diffuse pollution.

5. The national campaign

What is the national campaign?

The national campaign is the first part of the two tiered approach to mitigate diffuse pollution in Scotland. The focus of the work at the national level is to promote awareness and ensure compliance with the DP GBRs. It is expected to prevent further deterioration in the quality of the water environment and to deliver moderate water quality improvements.

There will be a general increase in good management practice as a result of this part of the plan which will deliver improvements to water bodies and protected areas across Scotland.

The national campaign will be organised and delivered by a range of organisations across Scotland. Successful delivery of the strategy will require sectors to be made aware of the impacts that their land use activities can have, and more specifically what measures they can use to help mitigate them. A joined up and supportive approach will help to raise awareness and promote appropriate action and will also rely heavily on a range of organisations playing an active role.

The national campaign will be based on:

- a national awareness raising campaign on diffuse pollution issues – a comprehensive programme of guidance and training for land managers and their advisors;
- site inspections by SEARS partners to check statuary requirements of practice are being adopted.

The initial priority will be to roll out a programme of guidance development, training and awareness raising for SEPA staff and SEARS partners and other key stakeholders. The success of the national campaign will depend on the establishment of local linkages between DPMAG members.

Organisations with responsibilities for the management of protected areas will coordinate their activities through DPMAG.

The national awareness raising campaign

The national awareness raising campaign is a comprehensive programme of information, guidance and training for land managers, their representatives and advisors. This programme will be delivered though a partnership approach by DPMAG members.

The steps to developing the national awareness raising campaign are to:

- carry out stakeholder analysis;
- agree key messages;
- develop actions for a national communications plan for delivering the national awareness raising campaign;
- agree resources to develop the communications plan.

The impacts of rural diffuse pollution depend on several factors including rainfall, topography, geology, soil type and sensitivity. This, coupled with the overall pattern of land use in Scotland where arable farming predominates in the east and livestock in the wetter west, means the effects of rural diffuse pollution vary between geographic regions. Therefore implementation of an awareness raising campaign needs to be targeted at specific sectors and activities for maximum effect.

In order to allow the national campaign to provide appropriate advice across the country, maps are being produced to show the distribution of the main types of rural diffuse pollution. These maps provide information to support advice and where necessary regulatory action on particular types of agricultural practice, as well as the promotion of funding mechanisms eg the Scotland Rural Development Programme (SRDP).

The national awareness raising campaign should be flexible and adaptable to regions and type of issues identified. The DPMAG communications plan (Appendix 2) will deliver the national awareness raising campaign with the support of area advisory groups in targeting specific areas.

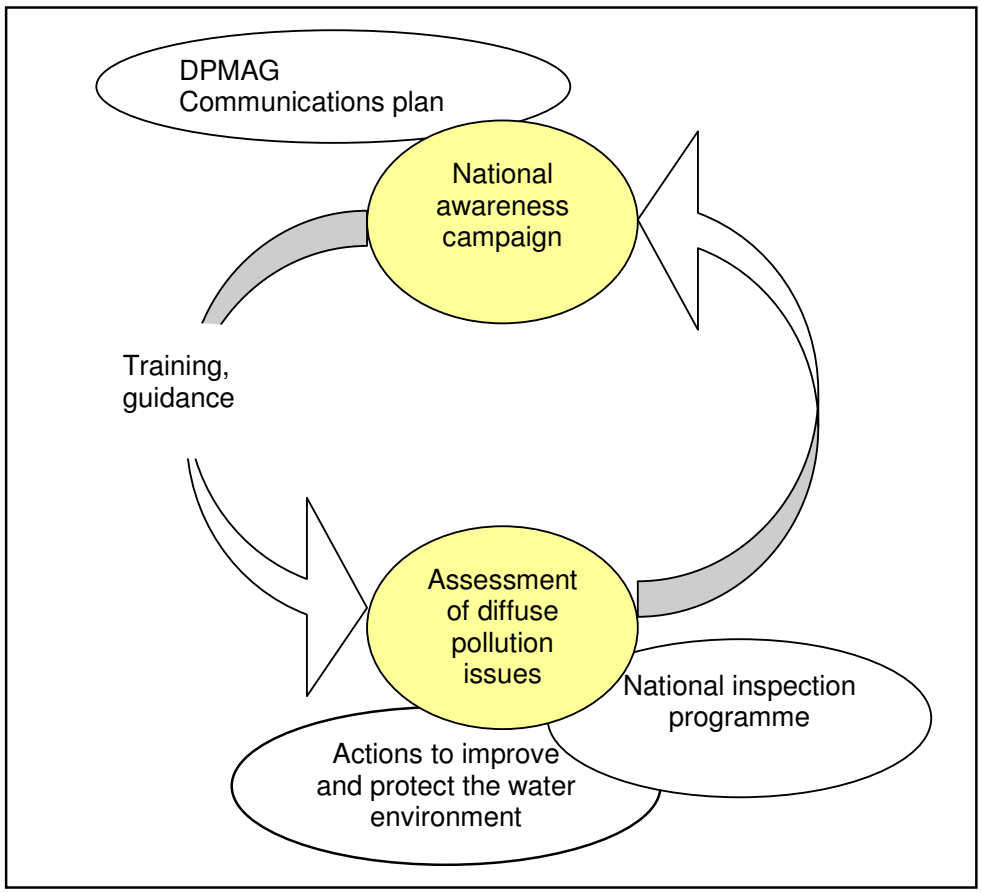
Action area 6: Develop, maintain and deliver the national awareness raising campaign.
Action area 6.1: Agree key messages for dissemination.
Action area 6.2: Gap analysis of communications resources for delivering the key messages.
Action area 6.3: Develop actions to target specific sectors and impacts effectively.
Action area 6.4: Agree who will deliver communications activities.
Action area 6.5: Deliver the national communications plan.

National inspection programme

Inspections of land holdings are delivered across Scotland by SEARS partners, with about 2000 inspections carried out every year. Such inspections will report land management practice which is not compliant with the DP GBRs.

The national inspection programme will rely on SEPA providing training for SEARS staff and guidance on diffuse pollution issues and awareness raising activities for land managers

Figure 3: Summary of the national campaign approach



Monitoring the success of the national campaign

The success of the national campaign will be measured by:

- an awareness raising survey;
- monitoring the use of good land management practice in relation to diffuse pollution;
- national inspection programme;
- water quality classification.

A baseline awareness survey is being conducted to measure land managers' knowledge of rural diffuse pollution, best practice and the DP GBRs at the start of this process.

This study will be developed and repeated at an appropriate frequency so the level of awareness and the success of this campaign can be assessed.

Action area 7: Measure changes in awareness of diffuse pollution, best practice and the DP GBRs.
Action area 7.1: Agree project scope and resources.
Action area 7.2: Develop methods for measuring baseline awareness.
Action area 7.3: Measure baseline awareness.
Action area 7.4: Measure awareness at an appropriate frequency.

Increased good land management practice in relation to diffuse pollution will be measured through the uptake of diffuse pollution related measures, for example in SRDP. Other methods of measurement will also be explored.

Action area 8: Measure change in uptake of diffuse pollution related measures.

The national inspection program will be used to assess compliance with the DP GBRs across Scotland. Results from these inspections will be reported back to DPMAG.

Action area 9: Report on results from the national inspection programme as a measure of changes in the level of compliance with DP GBRs.

6. Priority catchments

The catchment approach is key to delivering the major improvements required in the water environment. It is in these catchments that pollutant sources and pathways will be identified, so that local awareness of the issues, advice on best practice and accurate targeting of measures can be delivered. More detailed information on priority catchments can be found at www.sepa.org.uk/dppriioritycatchments.

Identification of priority catchments

Catchments have been selected using a risk based approach where water bodies or protected areas are significantly failing standards due to rural diffuse pollution. High priority has been given to those areas affecting human health (ie drinking water protected areas and catchments draining to bathing waters). The type of protected areas in each diffuse pollution priority catchment for the first cycle is highlighted in table 1 below. The detailed selection methodology is described in the priority catchment update paper circulated to DPMAG on 9 September 2009[2]. DPMAG was consulted during the development of the selection process and over the specific catchments proposed for the three cycles.

Fourteen diffuse pollution priority catchments have been identified in the first river basin management cycles for the Scotland and the Solway Tweed river basin districts, containing some of Scotland's most important waters (for conservation, drinking water, bathing and fishing). Candidate priority catchments have been proposed for future cycles. Map 1 shows the diffuse pollution priority catchments for the first cycle and those proposed for the second and third cycles.

Overall there is a good distribution of failing water bodies (surface and groundwater) across the cycles with:

- 133 in the first cycle;
- 215 in the second cycle;
- 96 in the third cycle.

Table 1 shows the number of water bodies that are currently failing in the first cycle priority catchments.

Projected improvements for priority catchments are:

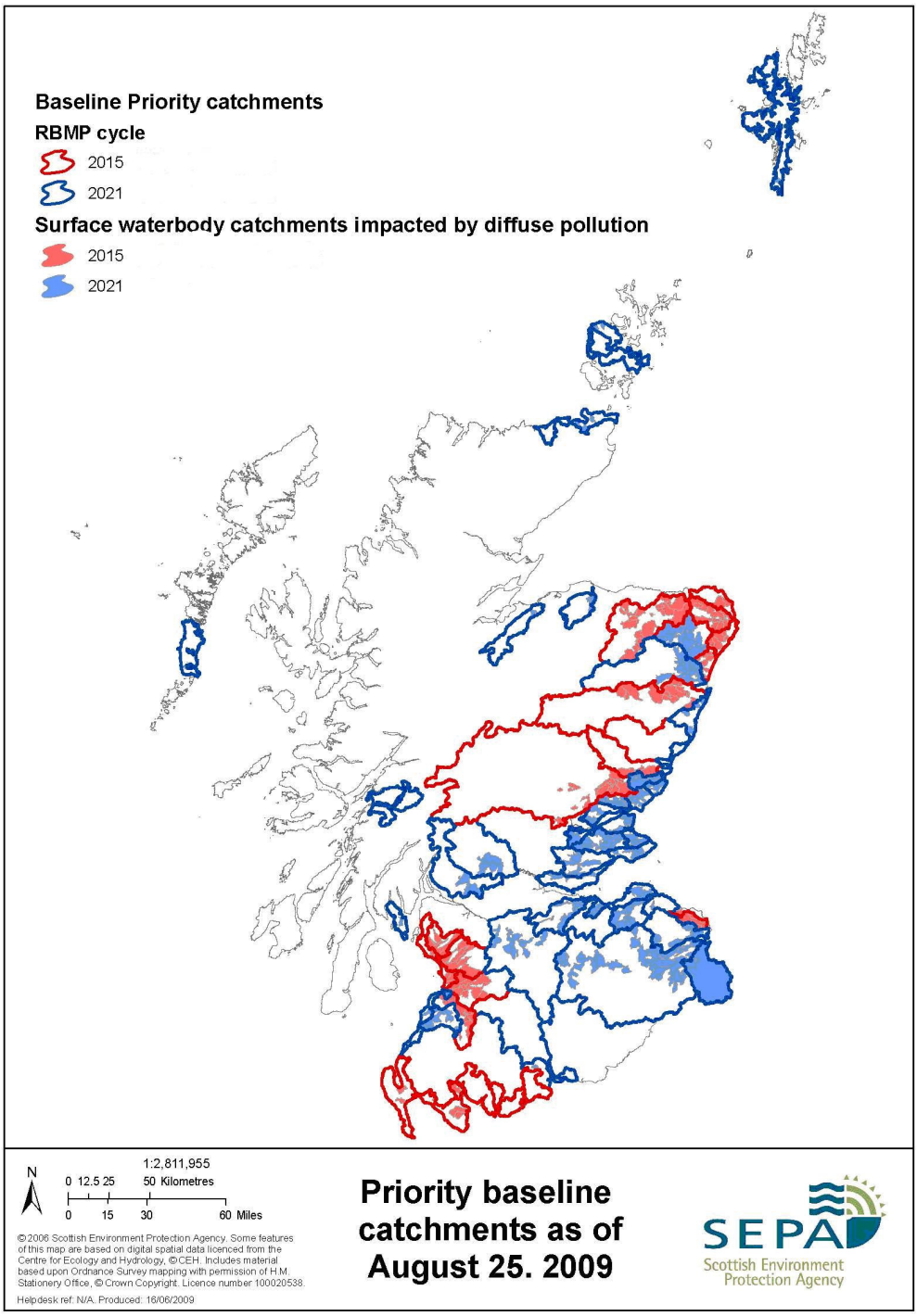
- there will be a one class improvement in diffuse pollution and morphology (rural land use) impacts in the first cycle priority catchments following by an improvement to good status by 2021;

- there will be a one class improvement in diffuse pollution and morphology (rural land use) impacts in the second cycle priority catchments followed by an improvement to good status by 2027;

- all remaining catchments will improve to good status by 2027.

The prioritised rural diffuse pollution catchments are listed in Appendix 4, which also shows which catchments have been scheduled for each RBMP cycle.

[2] Insert link to DPMAG website page with papers



Map 1: Priority catchments in Scotland 2009 –2015 and proposed catchments 2015–2027.

Table 1: Diffuse pollution priority catchments

Main catchment	Protected areas				No of baseline water bodies at less than good status where diffuse pollution is a pressure 2007 and 2008 classification
	Drinking water	Bathing water	Habitat	Shellfish	
River Tay	X		X		21
River Ugie	X				14
Eye Water		X			6
River Dee (Grampian)		X	X		12
River Doon		X	X		6
Buchan coastal		X	X		11
North Ayrshire coastal		X		X	4
River Ayr		X			7
River Deveron	X				26
River Irvine		X			5
River Garnock		X			5
River South Esk			X		7
Stewartry coastal		X			1
Galloway coastal		X		X	8
	Total				133

N.B The protected areas in Table 1 are designated under European legislation to provide water for human consumption (as a drinking water protected area), as bathing water, to support species or habitats important on European scale or to support economically important shellfish water.

For each diffuse pollution priority catchment SEPA has appointed a catchment co-ordinator. This co-ordinator will act as a single point of contact for the catchment and will be responsible for co-ordinating and organising evidence gathering, awareness raising events and inspection work between all parties involved. They will work closely with the area advisory group co-ordinators, so that those stakeholders are involved in the process of developing networks and co-ordinating activities to manage diffuse pollution in their area.

Priority catchment approach

A process for coordinating activities in the catchments that have been prioritised is being developed, led by SEPA in consultation with DPMAG.

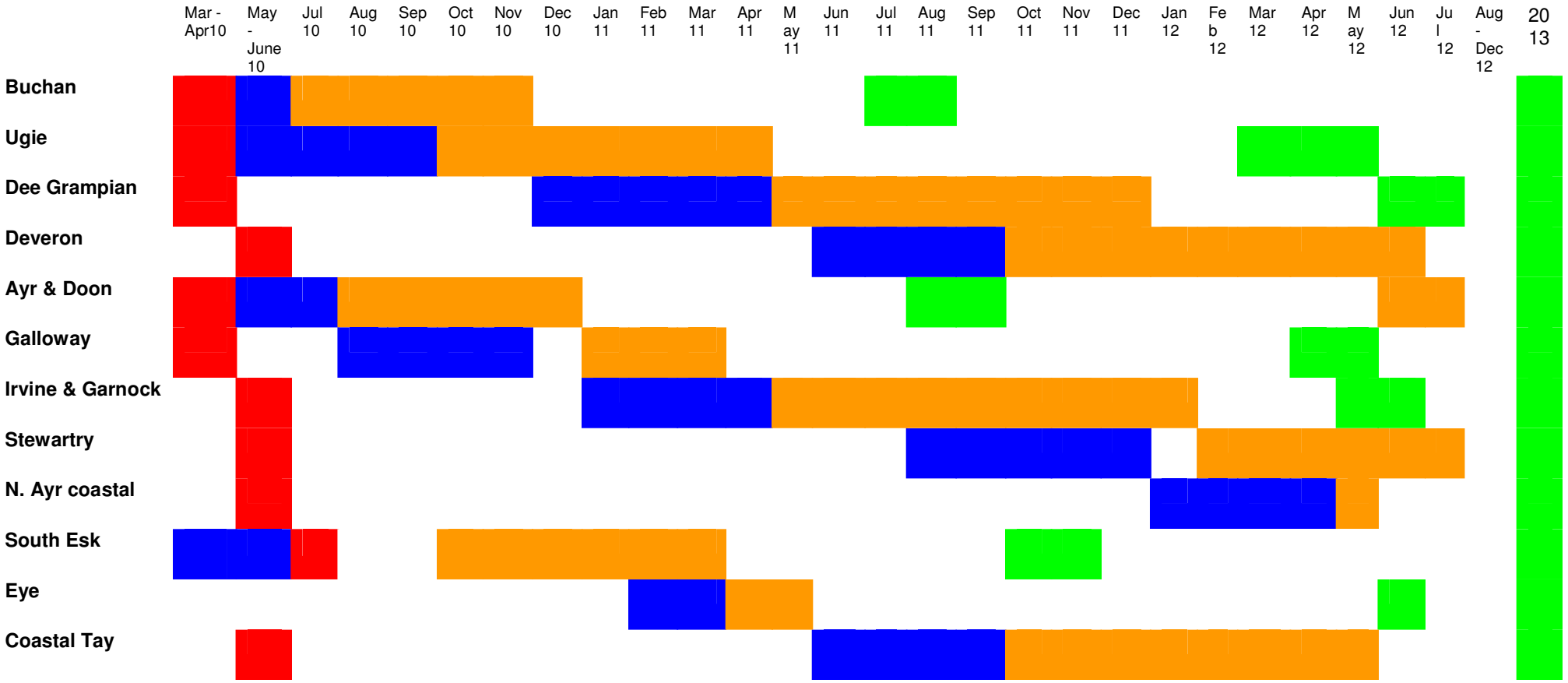
The rural diffuse pollution priority catchment approach has three phases:

- characterisation and evidence gathering (desk based study and catchment walks);
- awareness raising;
- one to one engagement and audit (rural diffuse pollution farm assessment checklist).

Each phase needs to be adapted depending on the issues in each priority catchment. For example, the approach will depend on the types of water environment affected (eg river, loch, coast, wetland or groundwater), the pressures and land use (eg type of land use and pollutants, and the land managers and stakeholders involved).

The delivery programme of diffuse pollution priority catchments is shown in Figure 4.

Figure 4: Timeline for diffuse pollution priority catchment work based on estimated farm numbers prior to catchment assessment and risk modelling to identify operational area. The time for delivery of inspections on ground is likely to reduce.	
Assessment of science (evidence base)	
Awareness raising	
Farm inspection time based on 6 staff working catchment	
Follow up visits	



Action area 10: Developing the priority catchment approach.
Action area 10.1: Delivering the priority catchment plans.

Characterisation of the catchments and evidence gathering

Once priority catchments have been identified, the intention is to explain to land managers about impacts in the catchment and the programme of work proposed to identify causes. This process will involve a mixture of desk-based assessment and field surveys. Other pressures such as abstraction, flooding risk and morphology need to be considered so that a single approach can be made to land managers, covering all pressures on the water environment and ensuring that multiple benefits can be delivered

The desk-based studies will cover:

- assessment of catchment sensitivity;
- modelling of land-use impacts - sources and transport pathways for the pollutants;
- collation of known pressures (eg diffuse pollution, septic tanks, irrigation);
- catchment surveys.

The field surveys will cover:

- presence of buffer strips;
- morphology impacts;
- evidence sources of pollution (eg soil erosion);
- invasive non natives species.

In consultation with DPMAG, area advisory groups and SEPA staff, a characterisation report[3] will be prepared which will detail the pressures and impacts in the catchment. The report will be made available in an easy-to-read format and will form the basis for stakeholder engagement as well as helping to target measures effectively.

Action area 10.2: Developing the characterisation process and delivering characterisation reports.

Awareness raising in priority catchments

On the basis of the catchment characterisation, and in discussion with the area advisory group (AAG) or a catchment steering group linked to the AAG, an awareness raising campaign will be developed for each diffuse pollution priority catchment. It will start by explaining the causes of any problems within the catchment and the types of measures which could be taken to address these.

Engagement with land managers and the local community will be based on a range of awareness raising activities such as local meetings/workshops and articles in the press. Success will rely on the quality of this engagement and resulting buy-in and behavioural changes. Follow-up visits to check progress will also be critical for sustained change.

[3] Characterisation reports for each catchment can be found at www.sepa.org.uk/dppriritycatchments

The awareness raising campaign in each priority catchment will focus on the issues identified during the characterisation of the catchment, and will target the area where problems have been identified. A specific awareness raising campaign[4] will be developed for each priority catchment, and detailed information will be available and linked to the relevant area management plan.

Action area 10.3: Developing specific awareness raising campaigns in priority catchments.

Action area 10.4: Collecting and developing specific resources so awareness raising campaigns can be focused in priority catchments.

Engagement and audit on the ground

The next step in the process is SEPA's one to one engagement with land mangers. SEPA staff will work proactively with land managers to achieve remedial action. This will involve an educational element and an audit based on SEPA's farm assessment checklist and associated guidance.

This phase involves walking both the steading and fields and assessing compliance with DP GBRs and Control of Pollution (Silage, Slurry and Agricultural Fuel Oil) (Scotland) Regulations (SSAFO). Similar assessment and checklists will be used in other sectors, and pressures such as forestry, septic tanks, morphology and irrigation identified as significant within the diffuse pollution priority catchments will be addressed. Engagement in each catchment will be according to the problem and type of land management; for example, catchments draining to bathing waters will be inspected in the summer. In addition, CAR waste sheep dip to land, engineering and abstraction inspections may also be undertaken.

Advice will be provided to land managers whose premises and/or land based activities are identified as non-compliant and/or causing pollution. Links will be made to SRDP measures and other appropriate guidance once compliance with statutory standards has been achieved.

Action area 10.5: SEPA will plan and undertake a programme of inspection audits for each priority catchment.

Further support for land managers

In some diffuse pollution priority catchments, land management advice will be required which may go beyond compliance with the diffuse pollution regulations, or if the solutions are complex. This may be necessary where:

- water bodies are highly sensitive;
- land management is intensive and environmental impacts are severe.

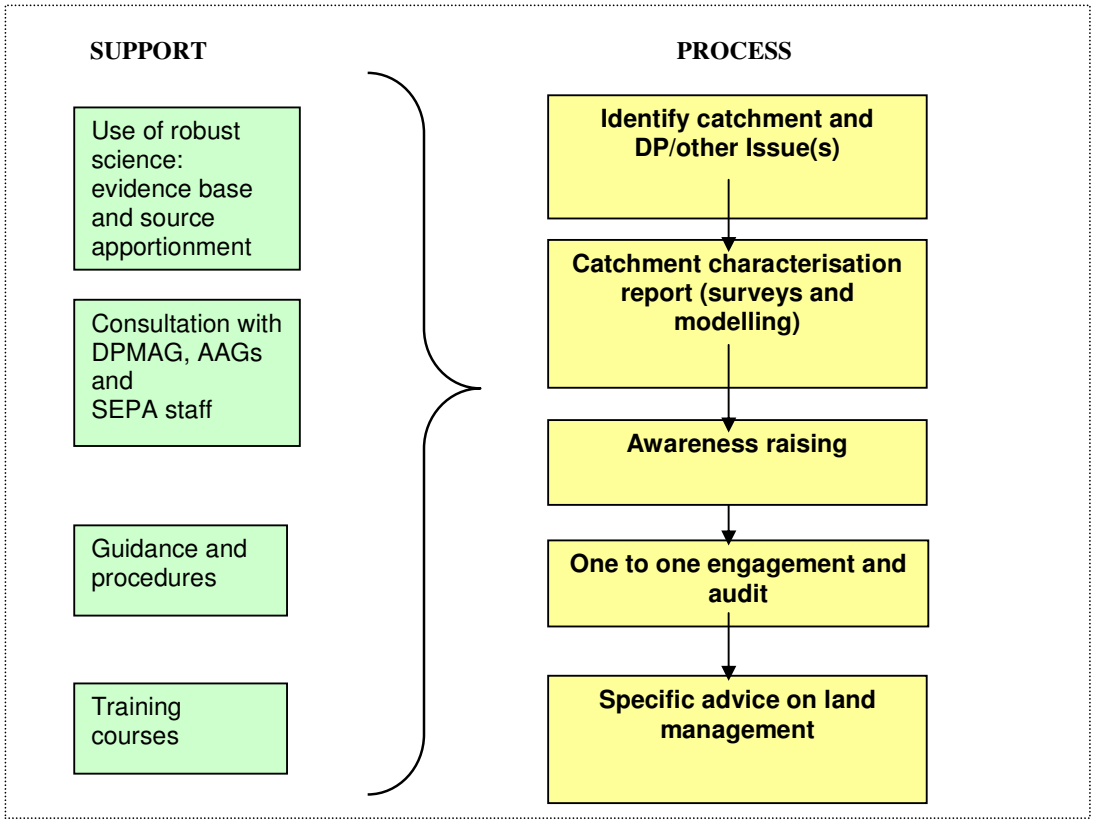
For example in certain instances, nutrient budgeting could be a useful tool to help land managers lower the phosphorus content of topsoil. It is recognised that some funding support could be helpful in increase the uptake of such measures, so DPMAG will explore whether sources of funding such as the SRDP (including

[4] Information on specific awareness raising campaign for each catchment can be found at www.sepa.org.uk/dpprioritycatchments

LEADER) and Scottish Government funding might be used to deliver this type of measure.

Action area 10.6: Review resources for detailed one to one advice.

Figure 5: Summary of the catchment approach



Monitoring and reporting in priority catchments

Specific actions will be planned, monitored and reported at catchment level. This information will be linked to area management plans and the national monitoring of progress (eg when a phase is complete) will be reported to DPMAG, including:

- monitoring of changed awareness;
- monitoring of measures being put in place;
- summary of environmental monitoring.

Feedback on progress will be provided locally and in an appropriate format to land owners.

Action area 10.7: Develop a process for monitoring and reporting the effectiveness of the priority catchment approach.

7. Overall monitoring and reporting

Monitoring

We need to measure the effectiveness of the approach described in this plan to assess whether it has been successful and to understand any observed changes. Specifically we need to:

- identify which measures are the most cost-effective and provide the greatest multiple benefits (eg for climate change mitigation and adaptation);
- be able to separate the effect of our measures from economic impacts, land use change and other pressures such as climate change;
- be able to understand why expected improvements are not being observed, if that is the case;
- identify what measures are required for the next planning cycle and rural development programme;
- support WFD derogations, if necessary;
- assess the effect of the proposed approach.

This means that a much greater emphasis will be placed on collecting data on land use and inputs such as fertiliser and pesticide usage than in the past. Data on measures funded under the SRDP, results of SEARS inspections and costs associated with all measures will be collected. This proposed approach means that a significant amount of resources are being directed at guidance, training and awareness raising and the costs and effects of this approach need to be assessed.

The types of monitoring are described below.

Environmental monitoring

A programme of short, medium and long term monitoring is planned. The focus will be mainly, but not exclusively, in the priority catchments (see Table 2 below). Water quality monitoring will provide an evidence base to focus action on the key risks and to provide information on emerging pressures. Soil monitoring will also be undertaken both to understand processes and to contribute to the assessment of the achievement of multiple benefits.

There is relatively little data on the effectiveness of catchment scale measures. SEPA established the Monitored Priority Catchment (MPC) project in catchments representative of typical land uses to fill this gap, and has been working in partnership with MLURI and SAC to establish a baseline against which changes will be assessed. Monitoring to assess multiple benefits (eg for hydromorpholgy and flooding) on a catchment specific basis will also be undertaken.

Monitoring the success of awareness raising

Major emphasis is being placed on awareness, guidance and training both for land managers and their advisors.

Surveys and a series of focus group meetings will be undertaken and repeated at regular intervals to quantitatively assess land mangers' awareness and understanding of the DP GBRs and other sources of guidance. This will help us identify barriers to uptake of DP GBRs and other mitigation measures, and identify the best mechanisms and techniques for reaching sectors and effectively changing practices.

Changes in land use/management

Data on land use and management will be collected alongside results of inspections and the funding of measures through the SRDP, for example, to enable us to assess changes in diffuse pollution pressures. This information is critical to understanding the effectiveness of measures as processes, such as soil nutrient transformations.

This information is also important as recovery times for ecology may mean that responses to a decrease in the diffuse pollution pressure may not be visible in terms of status change for some time. This information will be collated in a database at catchment scale and models will be used to predict and understand change. The detail on the sources of data required is still to be decided but DPMAG partners will have an important role to play.

Collecting cost data

Data on costs will be collected and will include SEPA and DPMAG member resources, funding under the SRDP and other sources and costs to land managers.

Research

Research has an important role to play in all the categories described above. It will help us understand the sources, transport pathways and processes that lead to diffuse pollution impacts. It will help us to understand the effectiveness of individual measures through detailed monitoring and at a catchment scale through modelling.

We will work closely with Scottish Government funded main research providers and with other funders at national and international scale to ensure our approach is informed by the latest science.

Scale and frequency of assessment

Monitoring will take place at a range of scales and intensities across the three water body types described in Table 2 below.

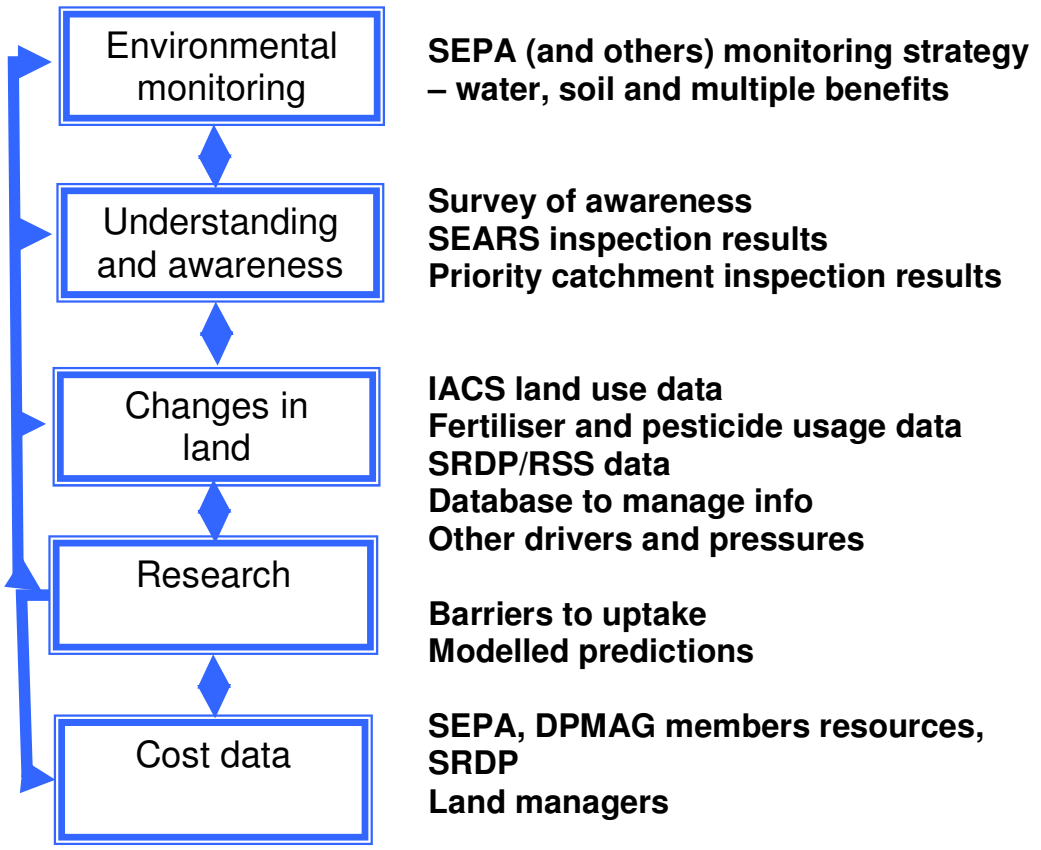
Table 2: Monitoring scale and frequency

Water body type	Scale and frequency of monitoring
Water bodies currently at good or high status at risk of deterioration.	Modelled risk assessment and 6 yearly classification.
Water bodies currently less than good status but where the scale of improvement in the status is relatively	Modelled risk assessment and 6 yearly classification. Assessment of effect of national awareness raising campaign.

small and can be reached with compliance with the DP GBRs. Water bodies currently less than good and where the status is not expected to reach good status without significant change in land management practices.	 Intensive water quality monitoring. Soil quality monitoring. Modelled predictions of effectiveness. Annual yearly classification.

Action area 11: DPMAG to monitor the progress on the overall strategy.

Figure 6: Summary of monitoring of the overall strategy



Reporting

Progress on delivering this plan will be reported to DPMAG, who will update the national advisory group. The Scottish Government will be informed of progress through this process.

Action area 11.1: A report of progress on the plan will be reported to DPMAG on a quarterly basis.

Action area 11.2: DPMAG will report progress to the national advisory group twice a year.

Action area 11.3: An annual report on progress will be produced.