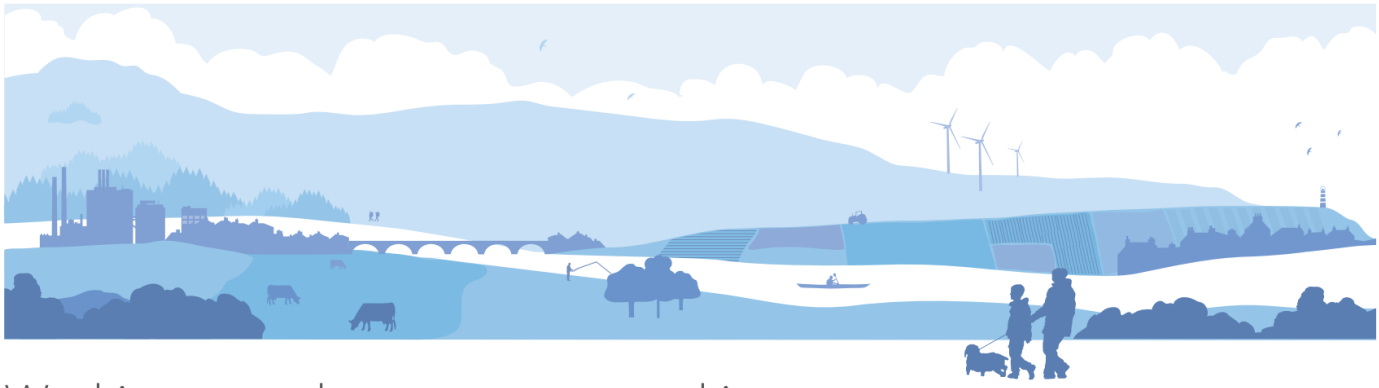
Greener Scotland
Scottish Government

SEPA
Scottish Environment Protection Agency
Buidheann Dìon Àrainneachd na h-Alba

The River Basin Management Plan for Scotland 2021 - 2027

December 2021



Working together to protect and improve our water environment

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1. A plan for Scotland's water environment

Scotland's water environment is one of our most important national assets. It contributes to the health and well-being of our country; supports a rich diversity of wildlife; and provides for the sustainable growth of our economy. Scotland is renowned worldwide for the quality of its rivers, lochs, wetlands and seas. The natural environment attracts millions of visitors every year and supports our exports of high-quality produce. Maintaining this resource is vital to Scotland's continued success and it is critical that we manage the water environment to ensure that the needs of society, economy and wildlife can be met and maintained for future generations.

On a global scale, the environment and the benefits it provides are under threat; from the overuse of natural resources; climate change; and biodiversity loss. Our oceans are polluted with waste materials, including plastics. Many species of plants and animals are in decline. The climate emergency means we are facing more frequent and damaging floods, higher temperatures and droughts. Healthy, natural systems can remove carbon from the atmosphere and help protect people and wildlife from the worst effects of climate change.

Here in Scotland, we are experiencing increasing floods and periods of drought. Recent data show that almost half of our species are in decline[1], including iconic species such as the Atlantic salmon. The need for urgent and transformative action to tackle these threats is clear. As we emerge from the shadow of coronavirus (COVID-19), we will have the opportunity to support Scotland's transition to green and sustainable economic success. The principles of a circular economy (design out waste, keep resources in use and restore the natural environment) that have been developed to ensure we manage finite resources sustainably, apply equally to water. Incorporating these principles into a more systematic approach to water management will provide new solutions to protecting and improving the water environment while providing wider public benefits.

This river basin management plan (RBMP) sets out a framework for protecting and improving the benefits provided by the water environment across Scotland. We – the Scottish Government, Scottish Environment Protection Agency (SEPA), responsible authorities and all of Scotland's other public bodies – are responsible for developing and

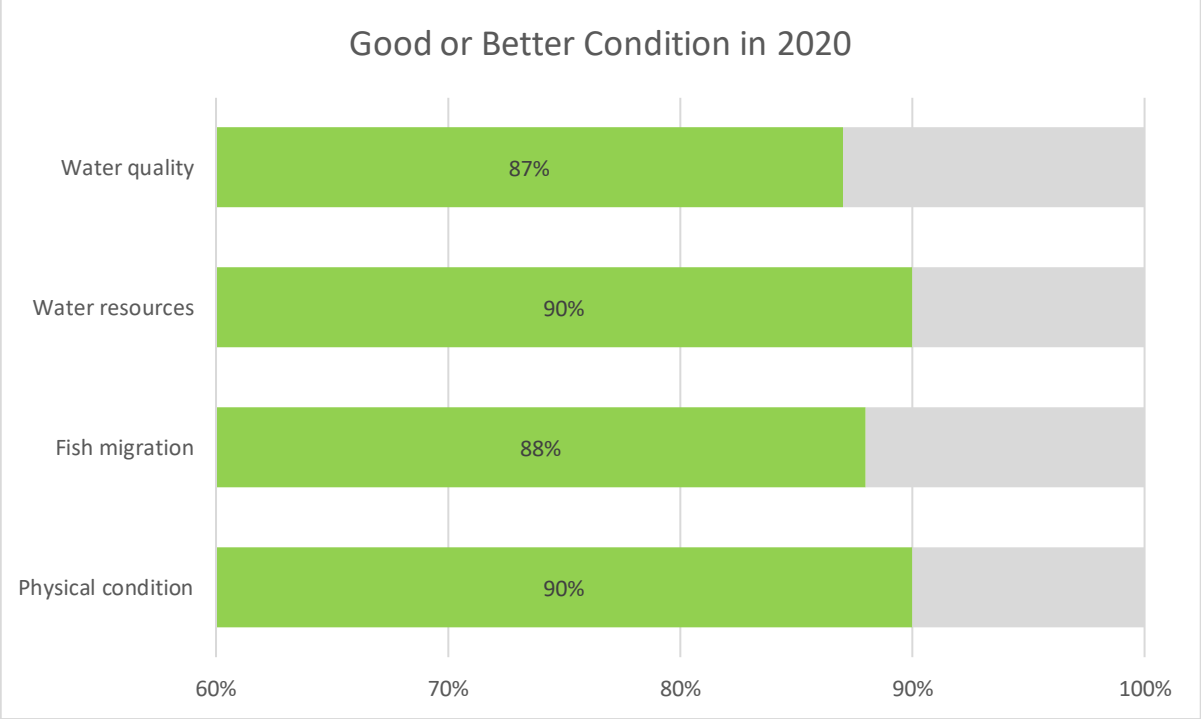
[1] https://www.nature.scot/sites/default/files/2019-10/State-of-nature-Report-2019-Scotland-full-report.pdf

delivering the RBMP actions. We will work closely with businesses, land managers, voluntary groups and organisations to build strong and effective partnerships that will deliver the ambitious actions set out in this plan. These actions will ensure that Scotland's rivers, lochs, estuaries, coastal areas and groundwater can continue to supply drinking water; support fisheries; offer an essential resource for business and agriculture and serve as a source of recreation that promotes health and wellbeing.

This RBMP builds on previous RBMPs published in 2009 and 2015, setting revised objectives for the period from 2021 to the end of 2027 and providing a programme of actions for achieving the objectives. 2027 is a significant date in the RBMP process. Over the past two cycles we have been working towards having all feasible and proportionate actions in place by 2027 to achieve good or better condition for Scotland's water environment. We will continue this work in the third cycle to secure sustainable use of the water environment that maximises the benefits a healthy water environment can bring to Scotland's people and businesses.

2. Current condition of the water environment

River basin management planning is underpinned by evidence and information so that action is targeted where it can have the greatest ecological benefit. To achieve this, SEPA monitors the environment to assess the condition of water quality, water resources, physical condition and fish migration.



Summary of the current condition of the water environment in Scotland (figure 1)

Water quality

SEPA monitors water quality to ensure that potentially harmful substances are within safe levels, and that the loss of valuable resources such as soil and nutrients can be identified and minimised. Water quality is now in good or better condition in 87% of Scotland's water environment. This is up from 82% when we published the second RBMPs. The upgrade in water quality reflects improvements made through Scottish Water's investment programme and the sustained hard work by all stakeholders to improve rural land management practices and reduce diffuse pollution. SEPA's priority catchment initiative continues to support land managers to achieve and maintain compliance with regulatory standards and go further where possible.

Water resources

Monitoring water resources (the flows and levels of water) indicates how much water is being used and how much is available to serve all its vital functions. This information is essential for managing water efficiently. The amount of surface water and groundwater available varies over time depending on weather events and the seasons. Climate change is influencing these natural variations and is increasing the frequency and severity of droughts. SEPA has been working to improve the quality of its data on the amount of water that is used across industry; for public water supply; and to generate hydropower. Despite the increasing natural fluctuations, the flows and levels in Scotland's water environment are currently at good or better condition in 90% of rivers, lochs and groundwaters. This is up from 88% when we published the second RBMPs.

Fish migration

SEPA evaluates structures such as weirs, culverts and bridges, which can block migratory routes for fish and deny them access to good quality habitat for spawning and rearing. As the condition of rivers improves, suitable habitats for fish extend further along rivers into areas above these manmade barriers. It is important therefore to ease the passage into as many of these stretches of water as possible. Since publication of the second RBMPs 29 barriers to fish migration have been removed or eased. Following field investigations, discussions with stakeholders and further assessments, SEPA has identified additional barriers and confirmed that a number do not need action. When taken together, this now means that 88% of Scotland's rivers and lochs are at good or better condition for fish migration. This is up from 86% when we published the second RBMPs.

Physical condition

SEPA assesses the physical condition of the water environment to understand the extent and impacts of modifications and structures, such as embankments; culverts; and the widening and straightening of rivers. All these activities can affect the benefits Scotland derives from the water environment, such as reduced flood risks; enhanced landscape quality; improved habitats for animals and plants; and health/wellbeing and recreation for people. The physical condition of Scotland's water environment is now at good or better condition in 90% of our waters. Since 2015, we have completed five projects to restore the physical condition of rivers and have another 17 in development.

Overall condition

Taking these four themes together, alongside assessments of invasive non-native species, SEPA classifies each part of the water environment based on the worst condition of any category. This means that whilst the classification results for each theme above range from 87% to 90% at good or better condition, and with 97% being free from invasive non-native species, the combined classification indicates that 66% of our water environment overall is in good or better condition in 2020. This is an improvement of 3 percentage points in overall condition since we published the second RBMPs.

Detailed information on the classification and evidence can be found in the Water Environment Hub. SEPA also shares these results through the Water Classification Hub. Information on the condition of protected areas can also be found here. An analysis of progress in the condition of the water environment during the second RBMP cycle (2015 to 2021) can be found in appendix 6.

Despite the progress we've made, there is still a range of pressures that continue to have an impact on the condition of the water environment. The sections that follow describe our action plan for tackling these during the third RBMP cycle and set out what we expect to achieve.

3. Actions for improvement

Scotland's Environment Strategy aims to create a net zero, circular economy that reduces the global impact of our consumption. This is further reflected in SEPA's regulatory strategy, One Planet Prosperity, which aims to deliver environmental protection and improvement in ways that help communities and businesses thrive within the resources of our planet. SEPA uses a Sector Planning approach to work towards achieving these goals and realise the economic benefits of increased resource efficiency, innovation and resilience.

The sections below describe how we will apply these principles in the third river basin management plan. Although we will continue to address the same full range of pressures, for the purposes of this plan the actions we will take are presented as four main themes: action to create healthier and more resilient communities; water supply and wastewater; sustainable and resilient rural land use; and removing barriers to fish migration. This more systemic approach to addressing pressures is required now more than ever. In taking this approach we hope to secure multiple benefits for the environment, economy and society.

Preventing deterioration in the quality of the water environment is also a key part of river basin management planning. New and existing discharges, abstractions, impoundments and engineering works in the water environment are authorised through the Water Environment (Controlled Activities) (Scotland) Regulations 2011 (CAR). These Regulations provide for 3 levels of authorisation: General Binding Rules; Registrations; and Licences. SEPA receives approximately 4000 applications each year for new activities or changes to existing activities, and through the CAR authorisation process sets conditions to protect the water environment. SEPA also monitors compliance with the conditions set in authorisations and General Binding Rules, and will continue to protect the water environment from deterioration through the application of these controls.

3.1 Action to create healthier and more resilient communities

What are we aiming to achieve?

This river basin management plan aims to protect and improve the water environment in the places we live to benefit the health and wellbeing of Scotland's people and communities.

By working with partners to restore rivers and improve how we manage surface water during storms we can create attractive and accessible blue-green river corridors and spaces within communities that can be used for active travel and recreation to help improve health and well-being. The importance of these areas to society has become particularly apparent during the COVID-19 pandemic, and the increased value people place on open spaces is likely to be maintained. These actions, particularly when targeted at deprived communities, can also support economic regeneration. The restoration of the water environment can help our communities adapt to the changes created by the climate emergency by building resilience to the increased frequency of flooding and higher temperatures.

How will we work to deliver these aims?

We will continue to invest in the Water Environment Fund and focus it to provide benefits for people and communities. We will build strong and effective partnerships between the public bodies responsible for managing the built environment and the third-party organisations that support our aims. Working with a range of partners and combining funding is essential to deliver ambitious projects that offer a wide range of benefits in an efficient and cost-effective manner. We will look at how we can use data and information to identify opportunities for action and ensure we target our actions in the areas where they will have the greatest impact.

We will ensure strong and effective links between RBMP, flood risk management and land use planning to make the most of our collective efforts.

Through sector planning and as a statutory consultee for planning applications, SEPA will help Scotland influence the development of housing and infrastructure that creates better places, ensures low environmental impact and, therefore, better and more lasting social and economic success. Developments including planning developments, housing, flood schemes and strategic infrastructure all provide opportunities to improve the environment.

In line with its housing sector plan, SEPA will work with partners to support the creation of high quality, multifunctional blue-green spaces in housing developments. SEPA will encourage adoption of standards such as the Building with Nature Benchmark to support the sector with the skills and knowledge to achieve this.

Finally, SEPA will work with Scottish Water and Local Authorities, to trial new and innovative approaches to managing surface water in our towns and cities. Under the Sustainable Growth Agreement between SEPA and Scottish Water, both organisations are seeking to maximise the use of blue-green infrastructure to soak-up and manage rainwater and reduce the risk of it flooding our towns and cities.

Stane Gardens is an urban river restoration project set within the Shotts community in North Lanarkshire. The area has been blighted by historic industry. The restoration of the river and the creation of the parkland provide the local community with access to good quality greenspace bringing benefits to health & wellbeing. The work was funded by the Water Environment Fund and North Lanarkshire Council.

What we will deliver in the third RBMP cycle

We are aiming to deliver up to 51 new restoration projects that have the potential to improve the ecological condition of rivers in Scotland's towns and cities. This includes 17 already in development. Projects have been identified for the communities that could benefit most, using the following criteria and a combination of opportunity mapping and input from partner organisations:

- Scottish Index of Multiple Deprivation (SIMD).
- Regeneration and development plans.
- Opportunities for active travel.
- River and surface water flood risk.
- Vacant and derelict land.

The potential projects, shown below, are highlighted in the Water Environment Hub. We will work with local authorities to explore the feasibility of delivering these river restoration

projects. SEPA is looking for partners to lead and co-fund these or alternative projects that would benefit people and communities and deliver the aims outlined above.

Local Authority	***Projects***	***Local Authority***	***Projects***
Aberdeen City	*1*	*Glasgow City*	*9*
Aberdeenshire	*1*	*Highland*	*2*
Angus	*3*	*Midlothian*	*1*
City of Edinburgh	*6*	*North Ayrshire*	*3*
Clackmannanshire	*1*	*North Lanarkshire*	*7*
Dumfries & Galloway	*2*	*Perth & Kinross*	*2*
Dundee City	*1*	*Renfrewshire*	*2*
East Ayrshire	*1*	*Scottish Borders*	*1*
East Dunbartonshire	*7*	*South Lanarkshire*	*3*
East Lothian	*1*	*Stirling*	*2*
East Renfrewshire	*3*	*West Dunbartonshire*	*1*
Falkirk	*2*	*West Lothian*	*2*
Fife	*9*		

The distribution of projects reflects the legacy of river alteration and modification close to population centres and areas of deprivation. Projects can cross local authority boundaries so may be counted more than once in the table above.

3.2 Water supply and wastewater

What are we aiming to achieve?

The public water supply and wastewater treatment system represents one of the largest industrial processes in Scotland. The industry has dramatically reduced its environmental

footprint over the past few decades but there still exists significant potential for delivering further environmental and social benefits.

In a historically water-rich country like Scotland, it is easy to take water supply and wastewater treatment for granted. However, climate change is affecting demand on water, water availability, raw water quality and risk of sewer and surface flooding in towns. Population growth is compounding these problems in some areas. While we must address these challenges, we must also consider the sector's greenhouse gas emissions and ensure efforts and investments are future-proof, wherever possible. 2018 and 2021 saw extreme drought conditions affecting the water environment and businesses. Water scarcity was also experienced in 2019 and 2020. These patterns and the impacts on users of the water environment will be repeated if we don't take action to change the way we use water in Scotland.

Our aim is to help Scotland create a truly circular economy for its water supply and wastewater sector. Under this vision:

- Water is being used wisely and efficiently, and not wasted, helping ensure Scotland can reliably meet its water needs in a changing climate and protect its natural environment.
- Towns and cities incorporate nature-based, blue-green solutions to absorb and safely convey rainwater in new developments, and where feasible in older developments. This helps strengthen their resilience to the intense downpours they will face more frequently under climate change; keeps excess rainwater out of sewers so contributing to reducing the risk of pollution; and creates attractive places for people to live and work.
- The sector has minimised its use of energy and materials and is converting sewage and other wastes into valuable resources.

How will we work to deliver these aims?

We will take a whole systems approach to managing the environmental impact of Scotland's water supply and wastewater infrastructure. This will include: looking at sustainable land management to protect raw water quality; working with customers, communities and businesses to reduce water usage and to promote water efficiency; working with the private sector and communities to minimise the inputs of harmful

chemicals and other materials to wastewater systems; encouraging and supporting heat recovery from the sewer network; managing surface water generated by intense rainfall before it enters the sewer network; and maximising the recovery of valuable resources from the waste produced by wastewater treatment works.

To do this we are developing strong and effective partnerships between SEPA, Scottish Water, local authorities, land managers, local communities and others (including private sector operators). It will also require new and innovative approaches to the design and operation of water supply and wastewater infrastructure.

Scottish Water will publish a route map setting out the steps that it will take with other partners to reduce sewage litter and spills from combined sewer overflows. Spills have become of increasing concern in recent years, and particularly during the pandemic with people appreciating their local water environment and taking part in outdoor swimming. Such spills can be caused by blockages or by hydraulic overloading due to increased flows since the sewer was originally designed (caused by business/domestic growth and/or the paving over of gardens and driveways). Climate change and consumer disposal of inappropriately flushed items such as wet wipes will continue to put increased pressure on the sewer network. As well as tackling water quality impacts to deliver this Plan's objectives, the route map will also include actions to increase monitoring, provide more public information, reduce sewage litter and reduce spill frequency.

In line with SEPA's housing sector plan, SEPA will aim to help the sector reduce, recycle and reuse water throughout the supply chain and lifecycle of homes. SEPA will help those operating in the housing sector to reduce the use of water and design homes to make use of non-potable water where appropriate rather than rely solely on potable water that has been treated to make it fit for drinking.

We will work across Scottish Government; the Drinking Water Quality Regulator; local authorities; SEPA; and other partners to ensure communities, small businesses and the environment are benefiting from well performing and reliable private water supply and wastewater systems.

What will we deliver in the third RBMP cycle?

Public water supply and wastewater	SEPA will work with Scottish Water and private sector operators to: • Deliver improvement as required at 40 wastewater treatment works to address impacts on water quality. • Delivery improvement as required at 24 unsatisfactory intermittent sewage discharges to address impacts on water quality. • Publish a route-map setting out steps to reduce sewage litter and spills from unsatisfactory combined sewer overflows. • Deliver improvement as required at 7 locations to improve fish migration. • Deliver improvement as required at 15 locations to address impacts on flows and levels.
Private water supply and wastewater	SEPA will develop guidance for developers and households to help them install and transition to more sustainable water supplies and wastewater treatment systems while protecting the water environment.

3.3 Sustainable and resilient rural land use and management

What are we aiming to achieve?

The way we use and manage our land provides a significant positive contribution to Scotland; putting food on our tables, producing timber and offering opportunities for recreation. The way land is managed to provide all these benefits affects water, air, soils and climate because of the interdependent nature of these systems. We want Scotland's land to be used and managed in a way that secures sustainable and long-term

improvements to our water environment and supports our response to the climate emergency and biodiversity crisis.

Climate change could mean a reduction in the number of days land is suitable for working; more pressure on irrigation to maintain crop yields; and an increase in the frequency and severity of floods. We need to prepare for this now to ensure that the production of food is resilient to these changes. The way we use and manage our rural land determines whether it becomes a net sink or source of carbon. Some land uses can be a source of carbon, however, planting trees, grassland management and restoring peatlands can all increase the amount of carbon stored in soils and vegetation. Targeting the right actions in the right places can reduce the climate impact of land use.

Moving towards a circular economy in the rural environment requires storing and using water more efficiently, protecting soil and reusing and recycling nutrients where possible. Applying only the amount and type of nutrients that plants need, in the right place at the right time, improves nutrient use efficiency, avoids waste and reduces costs.

Land management that uses resources more efficiently; adapts and is more resilient to climate change; reduces its carbon footprint; and restores natural capital will contribute to protecting and improving the water environment. The impacts of droughts and floods will be reduced; wildlife dependent on rivers and wetlands will be protected; and the loss of nutrients, soils and other material from land to water, where it can cause harm, will be minimised.

How will we work to achieve these aims?

River basin management planning does not operate in isolation. The Environment Strategy creates an overarching framework for all of Scotland's environmental strategies and plans[2]. Many of these include outcomes that will affect and be affected by river basin management planning, and they all need to work together to achieve their goals. For example, work likely to be carried out under the Climate Change Plan to create new Regional Land Use Partnerships, will identify where actions can be taken to help achieve climate change

[2] including River Basin Management Planning, the Climate Change Plan, the Biodiversity Strategy, the Flood Risk Management Strategy, Scotland's Forestry Strategy, the Salmon strategy, the Cleaner Air for Scotland Strategy and the Scottish Soils Framework.

targets. River basin management planning needs to complement this and work to target actions in areas of mutual benefit.

SEPA's rural sector plans are key to delivering the actions required to protect and improve the water environment. The sector plans already include aspirations and actions to make better use of resources; reduce waste and emissions (including GHG emissions); protect water, air and soil quality; and ensure resilience to the impacts of climate change. These plans will be used to promote a partnership approach to achieve sustainable land management. This will involve supporting initiatives such as the Farm Advisory Service; Farming for a Better Climate; Farming and Water Scotland; Forestry and Water Scotland; as well as industry and business led initiatives such as the Landscape Enterprise Networks and the Voluntary Initiative. Supporting innovation and seeking opportunities to engage with and support landscape scale initiatives (e.g. The £1 Billion Challenge, Borderlands Initiative) will be vital to achieving our objectives in the third RBMP, as will supporting and working with catchment initiatives at the local and regional level.

Working with land managers to ensure compliance with legislation

SEPA will continue with a focused approach in diffuse pollution priority catchments to drive compliance with environmental legislation to help achieve water quality objectives and improve bathing water quality. This work also promotes a circular economy by minimising nutrient and soil loss and saving farmers money.

The current approach to tackling diffuse pollution, involving catchment-based farm visits, has been successful in building a strong working relationship between the agricultural sectors and SEPA. These sectors have made substantial progress in improving their practices, and compliance has increased significantly since the initiative started in 2010. This partnership work is backed up by strong regulatory support and will continue to play an important part in delivering improvements for the third RBMP. During the third RBMP cycle, SEPA will complete the work in the 57 identified priority catchments.

Where required, SEPA will take enforcement action to ensure compliance with the environmental legislation. This may include the use of new enforcement tools, which have become available to SEPA to drive compliance and achieve environmental improvements.

Compliance in the forestry sector will also be assessed through a planned programme of SEPA inspections. This will start under the Argyll Initiative, which will involve detailed audit

inspections of forestry production and the water environment to ensure compliance with good forestry practices. Results will be shared with all organisations working in Argyll to drive improved compliance across the sector. This approach will be rolled out in a phased manner across Scotland during the third RBMP and will be supported by a programme of campaign work. Wider work with the forestry sector will be focussed on delivering the aims, objectives and targets set within the Scotland Forestry Strategy 2019-2029 and associated Implementation Plan 2020-2022.

Take a spatial approach to prioritising action

Actions to tackle diffuse pollution can also benefit other areas of environmental concern and are more likely to be achieved when considered in this wider context. We propose to approach the objectives for the third RBMP to maximise these opportunities. We are using spatial mapping to identify areas where actions can achieve the best range of outcomes. This will focus action in specific places and help tailor the type of action that is required.

SEPA will use this spatial approach by overlaying information on water quality; areas at risk of soil degradation; areas at risk of flooding; land use information; and status of designated sites (e.g. bathing waters, or biodiversity priorities) to develop opportunity maps. The results will be made available to land managers, advisors, and other organisations to help identify relevant locations for actions, inform decision making and promote sustainable land management. SEPA will also use information on flows and sediment in rivers to identify areas where light touch intervention would allow natural processes to self-restore the physical condition of rivers. Identifying opportunities for riparian tree planting and natural regeneration will be a particularly important part of this work and could realise many multiple benefits for biodiversity and fisheries, while mitigating flooding and erosion.

Actions to promote the sustainable use of water

We expect to see a greater demand for water to irrigate crops as our climate changes and rainfall decreases at certain times of the year. The amount of water abstracted for agriculture already has a significant impact on Scotland's water environment and we do not think that our current approach towards managing abstractions will be suitable for the future. We are therefore proposing new measures in this river basin management plan that are intended to prevent the deterioration of and drive improvements in the condition of our rivers in agricultural areas.

Rivers affected by agricultural irrigation typically have multiple abstractions within a river catchment. Under these circumstances, it is important that irrigators work together to manage the available water resources in an equitable manner. This means staggering abstractions to reduce peaks and constructing lagoons to store water so there is more available during dry weather. Each abstractor must use water as efficiently as possible and the obligation not to waste any water underpins the effective management of the water that is available to farmers. Informal management agreements are in place in many catchments and we will promote this approach elsewhere. We will also work to influence agricultural support schemes available for the construction of irrigation lagoons. This work will help the sector comply with the proposed new drought condition which will be added to licences during reviews carried out early in the third RBMP cycle.

The changing climate means that drought conditions are expected to become more frequent and severe. The likelihood of restrictions on abstractions will depend on how well farmers manage their water resources and adapt now to become more resilient.

A range of innovative sensors are now available to provide detailed information on water levels and flow in rivers, soil moisture and rainfall. SEPA is exploring how these can be best used to provide practical tools to make more information available to farmers and other water users in the catchment. We believe the combination of technology, responsibility and cooperation will allow operators to maximise the value of their water resources and avoid the necessity of regulatory action by SEPA. SEPA consulted on a Water Resources Management Plan at the start of 2021 and will take forward a series of actions to support a switch to a more resilient water resources management system during the third RBMP cycle.

We want to work with farmers to develop this approach, help those currently using informal management plans, and encourage others to take a similar approach to managing our water resources. We see this as one of our contributions to the development of a sustainable Scottish food industry.

During the third RBMP cycle, SEPA will work with farmers to review licences for irrigation where the water demand currently exceeds the available water resources.

We understand that good relationships and communication between all those involved in rural land management are key to achieving the aims set out above. We will continue to

invest time and effort into building those relationships and finding new and innovative ways of raising awareness of regulatory requirements and sharing good practice.

3.4 Removing man-made barriers to fish migration

What are we aiming to achieve?

Migratory fish species, in particular Atlantic salmon and sea trout, are iconic species for Scotland. They provide a valuable cultural and recreational amenity and the fisheries they support are an important part of Scotland's rural economy. Migratory fish are facing significant challenges from a number of pressures, including the effects of climate change, with droughts and higher temperatures threatening their survival. There is an urgent need to support these populations and build resilience where possible to counter these effects. Addressing man-made barriers to migration is a cost-effective, reliable and relatively fast way to achieve this. In many urban areas of central Scotland, where water quality has greatly improved in recent decades, barriers to fish migration are now the main factor preventing recovery of migratory fish populations.

Barrier removal or easement can be achieved by the full or partial removal of the structure, or by installation of a fish pass or other means of easement. Our understanding of delivering this work has significantly improved over the last two cycles of river basin management planning.

Impassable weir on the Gotter Water, Renfrewshire, part of the River Clyde catchment. Using the Water Environment Fund, SEPA removed the barrier to fish migration in 2019 opening up to 9km of habitat to salmon and sea trout.

How are we going to build on what we have achieved?

Most fish barrier projects involve significant engineering challenges. It takes about three to four years to scope the options, design, and complete a project. Each step requires specialist technical expertise, so capacity needs to be considered. The process can also be expensive so we must be mindful of cost. For some industries even a small number of actions could impose severe financial burden. Some organisations may be responsible for a large number of fish barriers, and the removal of these will need to be phased throughout the third RBMP cycle.

A catchment approach is needed on river systems with multiple barriers and different delivery mechanisms, and this will require planning and engagement with stakeholders and owners. Taking all these factors into consideration, during the third river basin management plan (2021 – 2027) we are aiming to remove or ease 244 impassable man-made barriers.

Type	Description	Number
Historic	Redundant weirs and impoundments often associated with historic industrial activities. SEPA will generally work with owners through the Water Environment Fund to remove the structure or otherwise allow fish passage.	94
Active	Weirs and impoundments used to support a range of sectors such as hydropower generation, public water supply and distilleries. SEPA will work with operators through the review of CAR licences to ensure these structures allow fish passage.	84
Assets	Structures not covered by an impoundment licence under CAR, such as bridges and culverts owned by local authorities, Transport Scotland, Network Rail and others. SEPA will work with the owners and operators to ensure these structures allow fish passage. Where appropriate, SEPA will use the Water Environment (Remedial Measures) (Scotland) Regulations 2016 to ensure action is taken.	66

During the third RBMP SEPA will finalise its review of licences for 34 hydropower schemes to deliver improvements as required in flows and levels and fish passage at up to 26 structures. These cover a range of sizes from large storage operations to smaller run-of-river schemes.

For a further 35 barriers, we are proposing to set less stringent objectives based on an assessment of disproportionate costs. Some of the 244 barriers currently planned for removal during the third RBMP cycle may qualify for a similar approach as we work with owners, operators and stakeholders to understand more about the costs and benefits of removing barriers.

Details of plans for the removal or easement of impassable manmade barriers to fish migration are available on the Water Environment Hub.

3.5 Summary of other actions to protect and improve the water environment

The following table provides a list of other significant actions designed to protect and improve the water environment in Scotland. The list is not exhaustive and further details are available in the Water Environment Hub.

Area/Sector	Summary of Action
Hydropower	As mentioned above, during the third RBMP SEPA will finalise its review of licences for 34 hydropower schemes to deliver improvements in flows and levels and fish passage. These cover a range of sizes from large storage operations to smaller run-of-river schemes. This builds on the work during the second RBMP cycle where SEPA worked with hydropower operators to understand better the extent of the impacts associated with their schemes and gathered data to improve confidence in SEPA's assessment. In a limited number of cases, objectives may change as our understanding of the feasibility, costs and benefits of action improves, in accordance with the procedures set out in Regulation 6

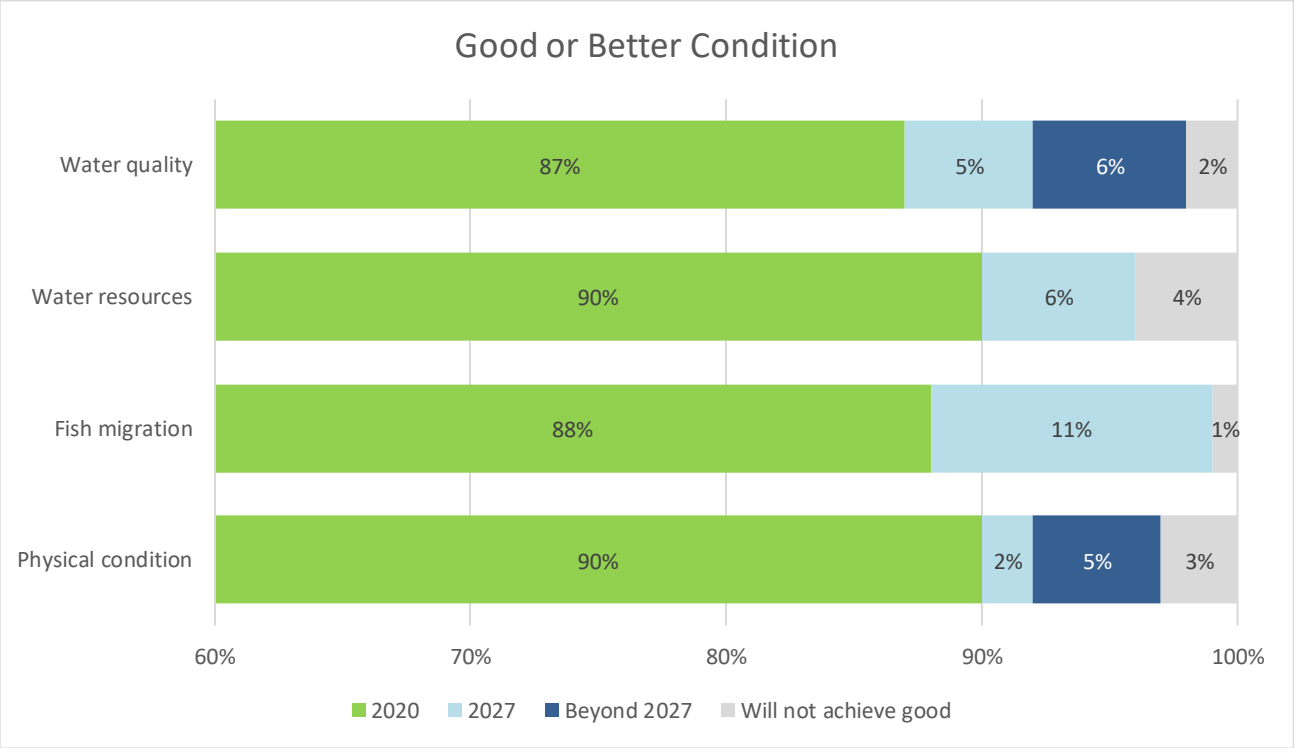
	of the Water Environment (River Basin Management Planning: Further Provision) (Scotland) Regulations 2013.
Distilling	SEPA will work with a number of distilleries to reduce the impact of their operations on the water environment, including; abstractions; waste water discharges; and barriers to fish migration. The Scotch Whisky Sector is committed to achieving the RBMP measures assigned to it and working with SEPA to understand the best means to achieve these works.
Aquaculture	Through the sector approach, SEPA is implementing a new strengthened regulatory approach for finfish aquaculture to protect the marine environment. The aim is to work with the sector to drive sustainable production. We have simplified the regulatory landscape by moving responsibility for wellboat discharges from Marine Scotland to SEPA through CAR. SEPA is finalising the development of a new spatial framework for managing sea lice interactions between farmed and wild fish.
Bathing Waters	Following significant investment and improvements in the first two cycles of river basin management planning, 94% of Scotland's designated bathing waters now meet 'sufficient' or better environmental water quality standards, and more bathing waters are now rated as 'excellent'. During the third cycle we plan to continue to apply measures to protect bathing waters aiming to achieve further good or excellent classifications, avoiding deterioration and implementing plans to ensure that the health of bathers at designated sites is protected.
Shellfish Waters	SEPA has worked with Food Standards Scotland (FSS), to improve the use of data in Shellfish Water Protection Area (SWPA) classification, and with the Scottish Government to develop a water quality improvement framework for shellfish growers. The aim is to

	target efforts within SWPAs, in consultation with the sector, to focus on prioritised Shellfish Production Areas that require improvements to help secure a consistent FSS 'A' class.
Wildlife Conservation Areas	Many of the actions set out in section 3 will benefit protected areas for wildlife conservation. The Water Environment Hub provides details on objectives and actions for protected areas.
Invasive Non-Native Species	Scotland has relatively few downgrades for invasive non-native species in the water environment. However, the water environment is at risk from the spread of invasive species. It is not technically feasible to eradicate aquatic invasive species where they are established, therefore our efforts in the third cycle will be to prevent their introduction and spread to other parts of the water environment.
Acidification	The existing controls on emissions of acid gases and pollutants across the UK will be maintained. Scottish Forestry will continue to promote UK Forestry Standard Guidelines on felling, new planting and stocking in catchments at risk of acidification.

4. Summary of our objectives for Scotland

What we expect to achieve overall

In section 2 we described the current condition of the water environment in Scotland. We expect the actions planned and set out in section 3, to result in 81% of the water environment being in a good or better condition by 2027 and 90% in the long-term once natural conditions have recovered. In figure 2 we have illustrated what we expect to achieve by 2027 and beyond under the four themes of water quality; water resources; fish migration; and physical condition.[3]



SUMMARY OF OBJECTIVES FOR SCOTLAND (FIGURE 3)

The actions to address rural diffuse pollution and improve wastewater infrastructure will aim to contribute to an overall improvement in water quality from 87% in 2020 to 98% in the long-term. Work to manage irrigation; water use for hydropower generation; and investment in public water supply will mean a six-percentage point uplift in the condition of Scotland's

[3] The reasons why parts of the water environment will not achieve good (referred to as less stringent objectives) are set out in the Water Environment Hub. In addition, parts of the water environment are designated as heavily modified or artificial. The reasons for these designations are also set out in the Water Environment Hub.

water resources to 96% in 2027. Action to tackle man-made barriers to fish migration and modifications to physical condition aim to see improvements to 99% at good or better condition for fish migration by 2027 and 97% at good or better condition for physical condition in the long-term.

Next steps

This third river basin plan sets out an ambitious programme of work for protecting and improving the water environment in Scotland. The actions described and the systematic approach planned will help Scotland tackle the climate emergency and biodiversity crisis, creating healthier and more resilient communities and a more sustainable and resilient rural economy. We will only be able to deliver on the objectives set out in this plan by working together to deliver its aims.