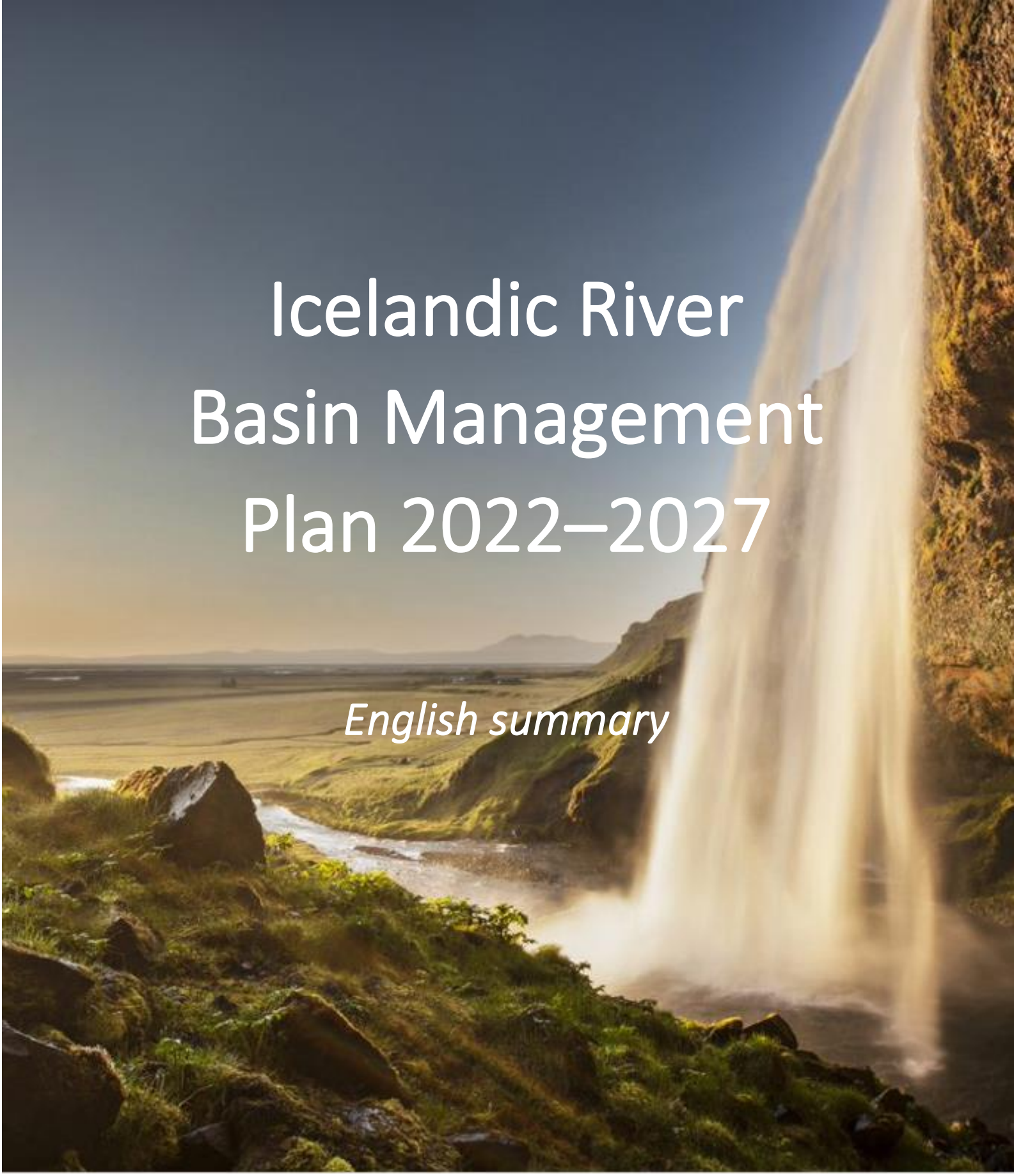

# Icelandic River Basin Management Plan 2022–2027

*English summary*

ENVIRONMENT AGENCY OF ICELAND

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## Background

Water is a vital part of life and appears to us in various forms, such as drinking water and water used in industrial processes, agriculture and aquaculture. We also enjoy rivers, lakes and coastal seas through outdoor activities and tourism. It is important to preserve biological diversity and the natural state of ecosystems in fresh water and the ocean for both current and future generations. Researching and monitoring water resources give us information on the quality of water essential for all who depend on clean water and ocean.

In 2011, the Water Framework Directive 2000/60/EC (WFD) was transposed into Icelandic regulation (No. 36/2011) which now represents Iceland's water management. The main aim of the Water Framework Directive is to protect waters and aquatic ecology, hinder deterioration, improve water quality and enable sustainable use of water. The requirements of the WFD are clear: all water bodies should at least reach "good status". The Environment Agency of Iceland is responsible for the formal implementation of the regulation and has accordingly delivered Iceland's first River Basin Management[1] Plan (RBMP) that enter into force in April 2022 and will run until 2027.

Iceland is considered as one whole River Basin District (IS1) and is further divided into four Water Regions. The country is considered to have high volumes of surface water and groundwater. Iceland is one ecoregion, and the country's geology and bedrock type are different from what is known in Europe. Along with soil permeability, soil type and vegetation, this influences the shape of watercourses and water distribution.

## The River Basin Management Plan 2022–2027

The RBMP presents Iceland's policy in water management and includes data mapping, delineation and characterisation of water bodies; monitoring; and analysing water conditions and quality. The RBMP has a specific Programme of Measures[2] (PoM), which outlines measures and actions to ensure good water quality status, and a Monitoring Programme[3] (MP), which has the objective to co-ordinate water monitoring across the country. Together, these three policy documents are valid for 6 years (2022–2027), a time period also referred to as a water cycle. It is important that information pertaining to the RBMP's goals, related reports and other policy documents be accessible for stakeholders and the public. This information has been made available on the website of water management (vatn.is).

### *Water bodies and types*

Initial work for Iceland's water management involves recognising natural characteristics of water in Iceland and assessing pressures (pressure analysis). If pressure on water results in the water not reaching its environmental objectives, additional measures are needed to improve its condition.

The Water Framework Directive applies to surface waters (lakes, rivers, transitional waters and coastal waters) and groundwater. Water is delineated into units called water bodies, each assigned a name and serial number within the Icelandic Water Viewer. For example, one lake or a stretch of river can be delineated into one water body. Water bodies can be delineated further into smaller water bodies due

[1] The Environment Agency of Iceland. 2022. Vatnaáætlun Íslands 2022-2027 (River Basin Management Plan 2022-2023, in Icelandic)
[2] The Environment Agency of Iceland. 2022. Aðgerðaráætlun 2022-2027 (Programme of Measures, in Icelandic).
[3] The Environment Agency of Iceland. 2022. Vöktunaráætlun vatnaáætlunar 2022-2027 (Monitoring Programme, in Icelandic).

to the presence of a particular pressure. Details on specific procedures for defining water bodies are outlined in reports made from 2011–2013[4,5,6]. Water bodies are grouped into types; this characterisation into types is based on certain descriptors (e.g. type of bedrock, altitude or depth) that highlight qualities that are crucial to development of ecosystems in water bodies and follow the procedures presented in the EU's CIS Guidance documents. Each type of water bodies has a defined reference condition that is a representative of very good ecological status. Well defined reference conditions are very important in working with a large numbers of waterbodies.

A total of 2719 water bodies have been delineated in Iceland: 1871 river water bodies, 382 lake water bodies, 77 transitional water bodies, 76 coastal water bodies and 313 groundwater bodies. Additional information and detailed data can be found in the Icelandic Water Viewer.

## *Status classification and environmental objectives*

Specific quality elements are used to determine the overall status of a water body and whether it reaches its environmental objectives of at least good ecological status and good chemical status. According to the WFD, ecological and chemical status of **surface water bodies** shall be established to estimate the effects of various pressures on their ecosystems. Ecological status refers to the biological, physico-chemical and hydromorphological quality elements relevant to estimate the status of water bodies. This includes determining the composition and abundance of invertebrates, phytoplankton and aquatic vegetation. Changes in these quality elements are compared to the expected state of water under natural and unpolluted conditions (reference conditions). Chemical status is determined by the presence and levels of polluting chemicals, known as priority substances. The list of priority substances and threshold limits are found in Regulation No. 796/1999 on water pollution prevention. The ecological status of a water body is defined into five categories: high, good, moderate, poor and bad. Chemical status has two categories: good and bad. A water body can have a good ecological status yet poor chemical status. This would mean the water body does not achieve its environmental objective. Both quality elements need to reach at least good status for the water body to reach environmental objectives of overall good status. If a water body has either high or good ecological and good chemical status, the water body is said to have achieved its environmental standard of overall good status. To maintain this status, a surface water body cannot deteriorate in its ecological or chemical status.

The status of **groundwater** is estimated based on chemical and quantitative status. The chemical status refers to measuring its pH, conductivity, nitrate, ammonium and other polluting chemicals which can cause pressure. A list of polluting chemicals measured in groundwater can be found in Article 2.3 in Annex III of Regulation No. 535/2011. The quantitative status of groundwater is one part in maintaining and safeguarding the sustainability of the resource. The annual long-term average of water abstraction shall not exceed the corresponding availability of the groundwater body and water abstractions or changes in water level shall not have negative impacts relating to surface waters nor wetland ecosystems. Furthermore, man-made direction change in groundwater streams cannot cause intrusion of salt water or other deposits. For groundwater bodies to achieve overall good status and meet environmental standards, they need to have a good chemical and quantitative status. To maintain this status, a groundwater body cannot deteriorate in its chemical or quantitative status.

[4] Bogi B. Björnsson, Gerður Stefánsdóttir and Jórunn Harðardóttir. 2012. Auðkennisnúmerakerfi íslenskra vatnshlota. Icelandic Meteorological Office BBB/GSt/Jha/2012-01, p. 13 (In Icelandic).
[5] Bogi B. Björnsson, Kristinn Einarsson and Linda Georgsdóttir. 2013. Yfirborðs- og grunnvatnshlot Verklagsreglur fyrir skilgreiningu Vatnshlota. Icelandic Meteorological Office BBB/KE/LG/2013-01, p. 23 (In Icelandic).
[6] Agnes Eydal, Sólveig R. Ólafsdóttir, Karl Gunnarsson and Héðinn Valdimarsson. 2011. Flokkun strandsjávar í vatnshlot og gerðir. Marine and Freshwater Research Institute, p. 8 (In Icelandic).

Certain water bodies are considered altered to the extent that they are categorised as **heavily modified (HMWB) and artificial water bodies (AWB).** Definitions of such water bodies are not complete in Iceland; however, a report has been made on possible water bodies to be defined as heavily modified and artificial that are under hydropower pressures[7]. This has resulted in 15 water bodies proposed as AWB and 40 waterbodies proposed as HMWB. The condition of HMWBs is estimated based on ecological potential, including biological and physio-chemical elements. A classification system for HMWB/AWB has not yet been established. Like natural water bodies (surface and groundwater), the chemical status of HMWB follows the environmental standards for priority substances.

To summarise, the overall ecological status of a water body is estimated by different quality elements depending on the type of water body, since each water type has its own reference condition and a classification system for ecological status. A water body is considered to fail its environmental objective if only one quality element deteriorates to the point of changing its status classification, even though other quality elements do not ("one out – all out rule").

Certain aspects are not fully implemented for this water cycle e.g. data and information on hydrological elements and groundwater. Furthermore, data is lacking on transitional waters, and additional work is needed regarding fish as a biological element in inland water bodies. These will be addressed in more detail and implemented in the next water cycle.

### *Environmental objectives not met*

Despite clear and ambitious regulations stating all water bodies should reach their environmental objectives, they can be deviated from in specific circumstances if it is clear the water body will not reach its environmental objective. In those cases, milder environmental objectives can be defined or a certain time frame given to reach defined environmental objectives. This is only an option if either certain financial, technical or natural restrictions are in place. Generally, the deadline for all water bodies to reach their environmental objectives is the 6-year water cycle from 2022–2027, meaning they should have high or good status or be at good or maximum ecological potential (for HMWB).

## *Pressure on water bodies*

When waterbodies have been delineated, an analysis of pressures and impacts pinpoints water bodies that are at risk of not achieving their environmental goals. Different elements may influence the state of surface and groundwater bodies. Various pressures can have direct impacts on water ecosystems, e.g. if pollutants are released into a water body (such as from industries, agriculture and waste water), groundwater abstraction, dam construction, road construction, harbour construction or dredging.

Pressure analysis was conducted in 2012–2013[8] by the Environment Agency of Iceland with stakeholders such as Water Region Committees and local health inspectorates. The analysis focused on pressures from industry or wastewater contamination. The findings were then updated in 2019 by adding more information, including data from possible contaminations originating from aquaculture, urban waste water and industry. The pressure analysis will be re-evaluated for the next water cycle.

Water body pressure is determined based on a rating system for pressure types. This rating system used existing knowledge and input from experts to rate each pressure type. The main types of pressures observed in Icelandic water bodies are wastewater, runoff in urban areas, fish farming (aquaculture), hydromorphological elements, various industries, agriculture and groundwater

[7] The Environment Agency of Iceland. 2020. Fyrstu skref við mat á manngerðum og mikið breyttum vatnshlotum, p. 45 (In Icelandic).
[8] The Environment of Iceland. 2013. Stöðuskýrsla fyrir vatnasvæði Íslands. UST 2013-11 (In Icelandic).

abstractions. In the pressure analysis, the water bodies were divided into three risk categories according to the results of the rating system. These three categories were: *not at risk*, *in uncertainty* or *at risk*. If a water body is considered either *at risk* or *in uncertainty*, procedures have to be carried out to determine the cause, either through specific measures or monitoring.

The process of documenting relevant pressures on water bodies in the Icelandic Water Viewer is not complete. Thus far, the data gathered focuses on pressure from large hydropower plants, urban areas, point source pollution (e.g., from waste and landfill), fish farming (aquaculture) and wastewater. More information on this can be found in the Icelandic Water Viewer. Water bodies can be under various pressures yet meet their environmental objectives and have an overall good status. It is important to have an overview of different types of pressure to make informed decisions for water management. As the RBMP implementation progresses, documentation of pressures in water bodies will improve in the Icelandic Water Viewer, which will result in a better overview of existing pressures.

## *Water status*

As stated before, Iceland has 2719 water bodies. Based on the report of Iceland's Water District from 2013, 34 waterbodies were categorised as *in uncertainty,* two *at risk* for failing to reaching their environmental objectives. Since this report, data has been collected which illustrates the pressure present in some of these water bodies, and consequently, the status of 12 water bodies changed from *in uncertainty* to *not at risk*. Thus, 22 water bodies are currently *in uncertainty* and one water body is *at risk* for not reaching its environmental objectives and one has been confirmed in bad chemical status.

### *Water bodies at risk*

The 2 water bodies considered *at risk* are *Tjörnin in Reykjavik* (a lake water body) and the groundwater body *Rosmhvalanes 2*. Tjörnin is a water body located in an urban area. A priority substance analysis to screen for priority substances revealed the presence of the chemicals perfluorooctane sulfonic acid and its derivatives (PFOS) (e.g., found in firefighting foam and de-icing liquid), fluoranthene (released from the combustion of fuel, found in tar) and Polycyclic aromatic hydrocarbons, PAH´s (released from fuel combustion). These exceeded the limits of annual average concentration. Therefore, Tjörnin does not reach its environmental objective for good chemical status. Measures have been outlined to map the origin of these substances and further define more measures to reduce this contamination. Ecological and physico-chemical elements and priority substances will be monitored. Since Tjörnin has been confirmed in bad chemical status the water body should be in good chemical status in the end of this water cycle, or in 2027. If this deadline is not met, reasons should be made explicit and a decision made as to whether an alternative timeframe is to be granted.

Rosmhvalanes 2 is a groundwater body located in an area close to Keflavík Airport, urban areas, landfills and polluting industries. The pressure analysis from 2013[9] and reports from the Icelandic Meteorological Office[10] and ÍSOR[11] show various types of contamination. The contamination in Rosmhvalanes 2 is multifaceted, but pressures analysis revealed the presence of various heavy metals, priority substances and other polluting chemicals from old landfills. The concentration of heavy metals and lead is high in boreholes close to old landfills. A reduction in the concentration of organic substances is observed in the airport area of the historic Icelandic defence force. This may indicate that the substances are being washed away with the groundwater currents or that they accumulate in the

[9] The Environment Agency of Iceland. 2013. Stöðuskýrsla fyrir vatnasvæði Íslands. UST-2013:11, p. 67 (In Icelandic).
[10] Gerður Stefánsdóttir, Davíð Egilsson and Svava Björg Þorláksdóttir 2019. Eiginleiki grunnvatnshlota undir efnaálagi. Icelandic Meteorological Office 2020-002, p. 62 (In Icelandic).
[11] Daði Þorbjörnsson and Sigurður Ýmir Richter. 2021. Rosmhvalanes 2 – Áætlun um skipulag yfirlitsvöktunar. Unnið fyrir Umhverfisstofnun. Greinargerð ÍSOR-2021/009 (In Icelandic).

groundwater layers (freshwater or saline), depending on mass. Nitrate contamination due to urea used for de-icing airstrips is also observed in the groundwater body. The concentration has, however, reduced from 100 mg/L since 1990 down to the current level of 5 mg/kg, or 1/10 of the allowed drinking water limit. This contamination is quite localised in 4–5 places. BTEX (Benzene, Toluene, Ethylbenzene and Xylene), which are used as additives in petrol and oil, were found in several boreholes. Pressures from oil usage were considerable until 1995 but have reduced as the US defence force evacuated the area. The presence of other substances has been observed, such as chlorohydrocarbons, trichloroethylene and tetrachloroethylene. The latter two have been found in water reserves close to Njarðvík (Bolafótur) and Keflavík (Eyjabyggð). The reserves by Bolafótur were of concern, as the concentration of trichloroethylene was considerably high. The use of these water reserves has consequently been stopped. The water reserve in Eyjabyggð showed low contamination concentrations.

Furthermore, possible contamination may originate from the increased traffic from Keflavik Airport. This means monitoring the use of de-icing liquid for airstrips and aircrafts. As the contamination at Rosmhvalanes 2 is still to be researched further, it is still defined as *at risk* for not meeting its environmental objectives. Measures have been outlined to estimate the origin of the contamination and execute monitoring and possible follow-up actions.

### *Water bodies in uncertainty*

The 18 water bodies categorised as *in uncertainty* of reaching their environmental objectives include coastal water, rivers, lakes and groundwaters around the country. The pressure types vary depending on the water body, but the major trend is pressure from wastewater, with a few water bodies under pressure from old landfills, fish farming (aquaculture) and agriculture.

Water bodies categorised as *in uncertainty* will undergo monitoring and be subjected to further research to determine their status regarding their environmental objectives. Some of these water bodies are already being monitored, such as Þingvallavatn and Mývatn. Others are scheduled to be monitored according to the MP. Several water bodies will also be monitored under operating licenses. A complete list of water bodies still *in uncertainty* can be found in the complete RBMP on vatn.is.

## Programme of Measures

The aims of the RBMP is to prevent deterioration of water quality and improve the condition of aquatic ecosystems which do not reach at least "good status". To enable water bodies to reach their environmental objectives, pressures on water bodies need to be managed and reduced where needed. To achieve these aims, a Programme of Measures (PoM) is produced to ensure the Icelandic water is protected and the objectives of the Water Framework Directive are met. Furthermore, the measures shall have the least negative environmental impact possible and the impact of climate change on water needs to be explored. A detailed analysis was made regarding improved wastewater treatment and its effect on reduced greenhouse gas emissions.

The Icelandic Environment Agency proposes measures in collaboration with the Water Council, Water Region Committees, Advisory Committees, municipalities and others. The PoM presents financial obligations of the state and municipalities. These entities had opportunities to influence the specific measures, as long as they conformed with the aims of the WFD and the water management regulation. The measures approved by the Minister for the Environment and Natural Resources are then binding for involved authorities. The responsibility of executing the measures will be spread across different

sectors, both among those within the administration and those who utilise the water resource. For each measure, there will be a responsible party who ensures the measures are carried out. The PoM will officially enter into force in 2022; however, several measures have been initiated due to their urgency.

The measures focus on enforcing the provisions of water protection regulations, work components to ensure correct implementation of the WFD in Iceland, monitoring and researching water bodies and various actions to reduce pressure on water bodies. There are around 65 measures, which are divided into 6 categories: wastewater, water bodies at risk due to substandard chemical status, implementation of RBMP water governance and project management, monitoring of water bodies and implementation of regulations, operating licenses and surveillance (p. 45). Based on the Icelandic water management regulation, the measures outlined for this water cycle shall be completed within the water cycle itself. The Environment Agency can resort to enforcements in the form of reminders or daily fines (Article 28 in the water management regulation) to force the implementation of measures.

Furthermore, water costs need to be considered according to water management regulations. The government should account for cost recovery in water provision, including environmental and natural resource-related costs stemming from damage to water resources. The WFD requires states to implement a policy regarding water prices that encourages users to use the water resource in an economical way that supports the environmental objectives of the WFD. This is not necessary if the price of water services undermines the purpose and aim of the WFD. According to a 2011 report from the Economics Department of the University of Iceland[12], the price of cold water in Iceland does not encourage economical use of water. The PoM specifies a need to review this analysis and the resulting actions needed.

## Monitoring plan

To achieve the aims of the WFD, a monitoring plan (MP) has been made for the whole country. The purpose of the MP is to co-ordinate monitoring based on water management regulation, enable the comparing and processing of monitoring results and present proceedings on how to survey water bodies. Monitoring should be precise enough to estimate the condition and long-term changes in the natural state of water bodies and impacts of pressure from various activities. Monitoring of water bodies is to keep track of PoM impacts made to improve the quality status of water and prevent water body deterioration.

The Icelandic Environment Agency steers the MP and ensures it follows the methodology outlined by the WFD, which guarantees scientific quality and comparable results. The Marine and Freshwater Research Institute, Icelandic Meteorological Office and Icelandic Institutes of Natural History were involved in formulating this MP and will cover consultancy for the monitoring of specific quality elements when appropriate.

This is the first holistic MP presented for water in Iceland in terms of co-ordinated research, monitoring and protection of water. The MP shall be re-evaluated every six years along with the RBMP. Despite entering into force in 2022, specific MPs have been made for two lake water bodies, *Mývatn*[13] and

[12] Economics Department of the University of Iceland. 2011. Hagfræðileg greining á nýtingu vatns. C11:04, p. 56 (In Icelandic).
[13] The Environment Agency of Iceland. 2018. Vöktunaráætlun fyrir Mývatn 2018-2023 (In Icelandic).

*Þingvallavatn*[14], due to their uniqueness and their uncertainty in reaching their environmental objectives of at least good ecological status.

Monitoring will occur on two types of water bodies: those seen as in a natural state and thus monitored as type-specific reference conditions and those water bodies considered under pressure or which have already been categorised as *in uncertainty* or *at risk* of not meeting their environmental objectives. For this water cycle, 23 water bodies will be monitored, excluding water bodies monitored according to operating licenses. Various stakeholders will work on monitoring under the water management regulations, and a specific methodology and plan is assigned to each water body.

Monitoring is slightly different depending on the water body. Aspects monitored are the quality elements and priority substances introduced above. For surface water bodies, the monitoring is separated into three categories: surveillance, operational and investigative monitoring. The first will be conducted on water bodies considered in a natural state and to provide an assessment of the overall surface water status, the second on water bodies *at risk* and to assess changes in the status of such water bodies resulting from measures taken. The third is to find causes as to why a water body or water bodies *at risk* are failing to meet their environmental objective and focuses on isolated quality elements. For groundwater, monitoring categories are surveillance and operational monitoring for chemical elements and monitoring for quantitative elements. If a groundwater body is not under pressure, monitoring is not required.

## Protected and vulnerable areas

According to the Water Framework Directive, for each river basin district, the register or registers of protected areas shall be kept under review and up to date. The Environment Agency has the role to document such areas specifically. The list includes e.g. protected areas where drinking water abstraction takes place, areas protected due to economically important aquatic organisms, water bodies designated or characterised as recreational waters, areas vulnerable to nutrients and areas designated for the conservation of habitats or species, where water is an important part of the conservation.

The register for protected and vulnerable areas lists water bodies that have abstraction of more than 10m$^3$ of water each day. Most of Icelandic drinking water comes from abstracting groundwater so the majority of water bodies on the register are groundwater bodies. No Icelandic regulation acts specifically for the designation of economically important species, at least no regulation that corresponds to the biological quality elements of the WFD. The only Icelandic regulation that covers this on the is an Icelandic regulation on salmon and trout fishing. In that regulation, areas can be designated for protection. Today no such areas have been defined. Water bodies for recreational use is supposed to be registered also. Thus far, two bathing areas (Nauthólsvík and Urriðavatn in Egillstaðir) are listed as such. Furthermore, areas vulnerable to nitrates are supposed to be on the register, but no such areas have yet been defined. Areas designated for the conservation of habitats or species refer to Natura 2000 and The Habitats Directive and The Birds Directive, which have not been implemented in Iceland. However, Iceland has a nature conservation law which somewhat corresponds to those directives. Around 100 areas in Iceland are protected under this law, and 23 are protected based on their uniqueness relating to water or aquatic organisms. All protected areas should have a protection and management plan, and according to the water management regulation, their ecological status

[14] The Environment Agency of Iceland. 2020. Vöktunaráætlun fyrir Þingvallavatn 2019-2024 (In Icelandic).

should be high or good. If protected areas that have water bodies *at risk*, monitoring shall be conducted and measures made to reverse that risk assessment.

## Environmental estimate of the RBMP

Extensive plans such as the RBMP can have significant impacts, and it is important that they are as positive as can be for the environment and society. A part of the RBMP is to carry out an environmental assessment for the plan in accordance with the Act on Environmental Assessments of Plans (No. 105/2006). The results will then be used to reduce negative environmental impacts. This assessment was conducted simultaneously to the formulation of the RBMP. The main result from the assessment is that the aims of the RBMP and its policies have a positive impact on environment and society. Furthermore, since one of the measures is on increased purification of wastewater, there is a potential of reducing greenhouse gas emissions and increasing the circularity of waste by using the sludge nutrients for land reclamation. This is presented in a report[15]. Most effective climate actions for this RBMP are thus to ensure acceptable purification of wastewater and reuse to nutrients captured.

## Measures for the first and second water cycle

This first RBMP runs from 2022–2027, and in this time period, its objectives will be re-evaluated and a new RBMP made for the next water cycle. Implementing the WFD is a long-term project with a different emphasis each time but always focused on having all water bodies reach at least "good status". Up until now, efforts have focused on setting up many of the basic elements of the water management system. Due to prioritisation, several components still need work, e.g. re-evaluating the pressure analysis and strengthening knowledge on type-specific reference conditions. Additionally, more work is needed to finalise the classification methodology to estimate ecological status of water bodies, and various ecological data are still missing.

The PoM and MP are important for continued data collection on water and to execute the measures to ensure the aims of the water management regulation are achieved. The data collected for this water cycle will then be used to continue the work for the next RBMP in 2028–2033.

As stated previously, further work is still required, and significant prioritisation was carried out for this first water cycle. Many aspects could not be completed in this first RBMP but will be expanded on in the next. The aspects to consider for the next water cycle include, but are not limited to:

- Groundwater needs to be researched further in terms of Iceland's hot groundwater. Only cold groundwater is addressed in this water cycle. More research is needed regarding actions and mapping for the groundwater resource. Delineation of water bodies is still needed, specifically in relation to further dividing up groundwater bodies based on pressures.
- Heavily modified and artificial water bodies and work related to them has started in this water cycle. However, more research is needed to finalise their definitions. This includes pressure analyses and estimating hydrological changes and ecological status to determine if they really are HMWB.
- Pressure analysis for this first water cycle is from 2013, and a new one needs to be conducted to include up-to-date data and information which may have changed since the first analysis.

[15] Efla. 2020. Losun gróðurhúsalofttegunda við bætta fráveituhreinsun, p. 12 (In Icelandic).

Additional knowledge gathered since the first analysis can also better inform researchers on various pressures. Simultaneously, more information is needed on hydrological pressure elements relating to smaller infrastructure such as bridges, bocks, sewers and others which may impact ecological statuses of water bodies.

- Hydrological quality elements as a part of the ecological status of water bodies are not included in this water cycle but need to be researched further to be included in the status classification in the next water cycle.
- Exotic and invasive species need to be researched and mapped in Icelandic waters if their presence is detected. This includes determining if they are negatively impacting biodiversity and if they are spreading.
- Monitoring priority substances in sediments and organisms is important to make long-term estimates on the strength of substances. This will be done in the next water cycle.
- Climate change and RBMP. European states should consider climate change in their RBMPs and ensure that the plans do not exacerbate emissions. It is also important to consider how climate change will influence water environments for the future and how it will in turn influence measures and monitoring. Certain quality elements may need to be reconsidered to account for changes related to climate change. Ocean level rise can influence sewer systems, and research is needed on whether rising temperatures can change surface water ecosystems. This will be done in more detail in the next water cycle.

More detailed information on the sections in this summary can be found in the complete documents for the RBMP, PoM and MP on vatn.is (only in Icelandic).