

Advice, support and funding needs of private water supply users

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1. Key Findings & Recommendations

- 1.1. The Scottish Government is currently reviewing the legislative, advice, support and funding landscape for Private Water Supplies (PWS) in Scotland, as part of a programme of work to align with the European Union's recast Drinking Water Directive¹.
- 1.2. Consumer Scotland commissioned qualitative research with users of PWS, to ascertain their views and needs around advice, support and funding provisions. This research builds on previous consumer research² that explored the challenges and experiences of PWS users in Scotland.
- 1.3. The following are our key findings and recommendations identified from our recent consumer research:

Key findings and recommendations

1. **There is no single, comprehensive source of information and support for PWS users**

Recommendation – The Scottish Government should examine how to bring together all aspects of support and advice to provide a so-called 'jumping off point'. A single website could provide PWS users with information and links to other methods of support. These would include tailored advice, links to regulatory registration, online training tools, water management tools such as risk assessments and water sampling options, routes for connection to the public water network and access to funding support.

In the context of designing an advice service for PWS users, there is value in enabling PWS users to connect with each other, to share their experience and knowledge. The Scottish Government and local authorities should consider how best to facilitate this within a single service offering, perhaps through creating and hosting online communities of PWS users.

2. **Water supply management tools are not being fully utilised by PWS users, in part because the benefits are not evident to users**

Recommendation – Local authorities (and any future single-service offering) need to promote water management tools, such as Risk Assessments and water sampling as beneficial for PWS management. This can be done through ensuring they are accessible, affordable and enable PWS users to engage with the results. This should include translating complex data into plain English with tangible examples of actions to take. Additionally, Scottish Government and local authorities need to ensure PWS users have access to follow-on tailored advice where required.

3. **PWS can be negatively impacted by issues out with their control, such as climate change and land use change. These can lead to PWS running out of water or having to tackle water quality problems**

Recommendation – The addition of the substantive right to safe and sufficient water in the Human Rights (Scotland) Bill, Part 5, a Right to a Healthy Environment, is welcome. However, this will need to be accompanied with accessible and effective methods to protect PWS. Local authorities need to ensure PWS users can access affordable and timely remedies where land use change disrupts a PWS.

If the Scottish Government establish a national advisory service, it should include access to advice, support and suitable technical solutions that enable PWS to adapt to land use change and climate change impacts.

4. The current grant does not adequately reflect either the costs of ensuring a PWS can provide safe and sufficient drinking water, or the ability of users to meet the costs

Recommendation – The Scottish Government should consider reviewing the funding options for PWS, with the view to delivering a more flexible approach. This should take into account PWS users’ ability to pay, as well as the impacts of climate change affecting the sustainability of many PWS.

The Scottish Government should develop a more strategic and longer term programme of mains water connections for PWS, that aims to reduce the number of PWS and enhance the resilience of many PWS homes and businesses.

5. The current registration of PWS can be inconsistent and lacking in accurate location and water-source data, which can put them at increased risk from land use change and climate change impacts

Recommendation – The Scottish Government should ensure there is a single register of PWS to improve understanding of those at risk and to better target support where necessary. This should be accompanied with a programme that incentivises PWS users to update the register with necessary information.

6. There has not been a long term strategy to connect PWS to the public water network and the costs can make it unfeasible for many. Climate change impacts are now exacerbating issues of water quality and water availability for many PWS.

Recommendation: The Scottish Government should consider how it can deliver a longer term programme of extending the public water network in rural Scotland. This would enable many homes and businesses with a PWS, to secure access to safe and reliable drinking water.

2. Policy Context

Overview of Private Water Supplies

2.1. It is estimated there are 22,500 private water supplies in Scotland serving over 180,000 people, three per cent of the population³. These drinking water supplies are not connected to the mains water network and can serve single households, tenanted properties, holiday lets, businesses or even small communities. However, PWS are more common in rural areas and some regions will have 20-30% of their populations on a PWS. The number of people accessing a private water supply is also estimated to increase during holiday periods, when visitor numbers can rise significantly, particularly in popular rural tourist locations.

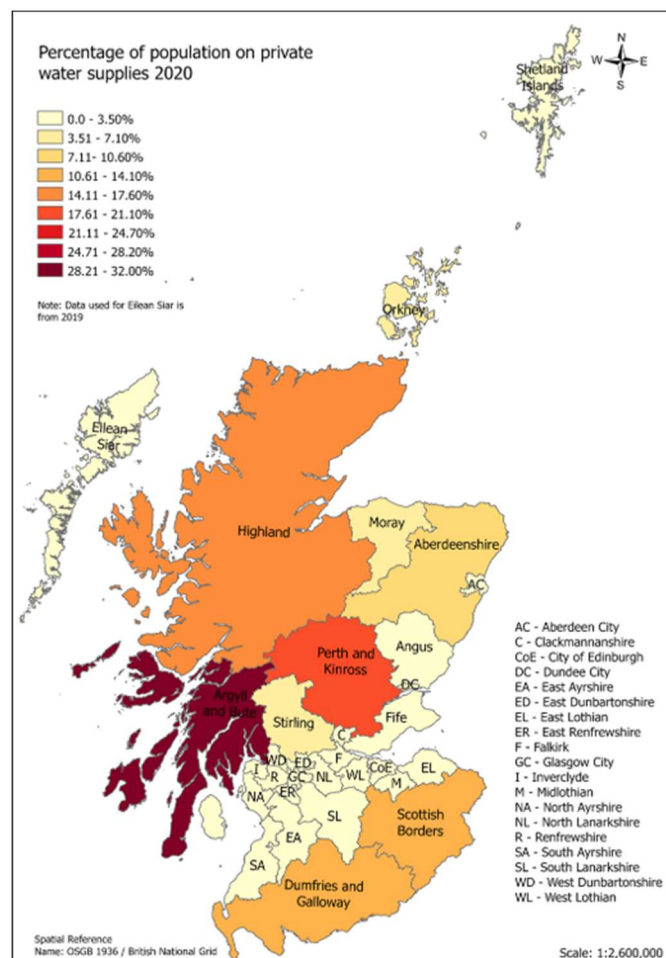


Photo from Elizabeth Lawson, Newcastle University

2.2. The map of Scotland in the image above, shows the percentages of the population reliant on a private water supply by region. It highlights the rural prevalence of PWS and the substantial geographical coverage of them across Scotland.

2.3. PWS are often small scale and regularly rely on surface water sources rather than ground water supplies. As such, they can be more vulnerable to changing weather patterns (longer dry periods or more intense rainfall) which can quickly see water supplies run dry or struggle to tackle pollutants being washed in. Connecting to the

mains water network can often be cost prohibitive, due to distance from the mains infrastructure, or the topography of the area

- 2.4. Climate change is increasingly having a negative impact on private water supplies and a growing number of properties are more regularly running out of water during prolonged dry periods, often leaving users with no alternative water supply⁴. Various types of land use in rural areas can also impact the quality of the water and the amount of water available for private water supplies, with forestry, wind turbines, agriculture and developments capable of impacting drinking water sources⁵.
- 2.5. PWS are currently divided into Regulated supplies and Exempt (Type B) supplies, with Regulated supplies usually businesses and accounting for around 20% of all PWS in Scotland. Only Regulated supplies are required to undergo water quality compliance tests, whilst the remaining 80% of PWS, typically domestic homes, usually only request a sample to access grants or when selling the property.
- 2.6. The water quality tests for domestic PWS, are on average worse than public water supplies. Over the last decade there has been little change, and the 2021 reported figures show 86% of water tests met the required drinking water standards across a range of health based criteria⁶. This compares with 99.92% for public water supplies⁷. Of further concern are the figures for specific key parameters, such as the prevalence of faecal contamination in the water. Faecal contamination was found in 33% of PWS samples, with 16% containing harmful E.Coli⁸. This compares with a 0.008% rate of E.coli in the public water supply. The health risks of drinking from a PWS are substantially greater than those from the mains water supply.
- 2.7. The Drinking Water Quality Regulator's (DWQR) annual report for PWS⁹ highlights the stagnation of water compliance results over the last decade. It is also notable the information, advice and funding support landscape for PWS users has had almost no impact in improving the water quality of PWS over this time period.
- 2.8. In recent years there has not been a strategic plan for either managing new PWS as part of the planning process, or to connect existing PWS to the public water network. For many PWS, the costs of extending or building the necessary infrastructure can make mains connection unattainable. A strategic and structured approach to mains water connection, would better enable large parts of rural Scotland to adapt to climate change and secure safe and reliable access to drinking water.

Scottish Government Policy Development

- 2.9. The Scottish Government is currently undertaking work to align with an EU recast Drinking Water Directive (rDWD), a key principle of which is to ensure everyone has access to safe drinking water. During the alignment work, the Scottish Government worked with key stakeholders including Consumer Scotland and a gap was identified in policymakers' understanding of how PWS users want and need to access information, support and advice about their water supply.

Previous PWS Research

- 2.10. Previous consumer based research¹⁰ highlighted many of the challenges faced by PWS users in trying to manage their water supply and ensure it is resilient to climate change impacts. A key finding that has been consistently identified in the research, is that PWS users have low awareness of the existence of information, support and advice and often what is available does not meet their needs.
- 2.11. As a result of these findings, Consumer Scotland decided to explore with PWS users how information, advice and financial support could be better delivered to meet their needs. Consumer Scotland worked in collaboration with the Scottish Government and other key PWS stakeholders (local authorities and Scottish Water). The purpose of the research was to identify PWS user's support needs, how to deliver support and how to most appropriately provide financial support for PWS users. In undertaking this research Consumer Scotland took account of PWS policy development aspirations as well as PWS user needs.

3. Methodology

- 3.1. Consumer Scotland commissioned the Progressive Partnership research agency to undertake qualitative research with a total of 49 PWS users, who participated in the research from 9, predominantly rural, Local Authorities¹¹. The research comprised of online focus groups and telephone interviews to explore the views of PWS users and owners in Scotland on their needs in relation to advice and support about their water supply. We recognised the need to engage with both users and owners, where these are not the same. For example private rental or holiday rental properties with a PWS, will likely need to offer different types of support to a tenant, a holiday visitor or a landlord.
- 3.2. The participants were primarily homeowners and renters representing a mix of age, gender and socio-economic status. Research also included small businesses and holiday let owners. The research was carried out during January and February 2023, in the form of 7 focus groups and 16 depth interviews.

4. Research findings and areas for actions

- 4.1. In this section we set out the key findings from the research in detail. Alongside the findings we identify a number of recommendations that should be considered by the Scottish Government, local authorities and other water stakeholders, to address the information, support and funding needs of PWS users.

There is no single, comprehensive source of information and support for PWS users

- 4.2. Previous research¹² highlighted that effective management of a PWS is needed to help PWS users ensure they have access to safe and reliable drinking water and to respond to climate change impacts.
- 4.3. Consumer Scotland's research found that PWS users were strongly supportive of there being a more coordinated source of advice and information about how to manage their water supply. Currently generic information is available from a range of online sources, including Local Authorities, the Drinking Water Quality Regulator (DWQR), the Scottish Government and Citizens Advice Scotland. Yet the research found that participants often don't find these resources adequate to meet their needs, or they aren't aware of these resources.

"There isn't a central resource. The answer is out there, but you have to find it... information isn't organised at the moment." (from a participant in a depth interview)

"I didn't realise there was any information to be had, we just fend for ourselves" (from a participant in a focus group)

- 4.4. However, the research identified clear support amongst participants for a so-called 'jumping-off point' where for example, a single website provides links to information, including:

- General PWS management information
- Regulatory requirements and rights and responsibilities of PWS users
- Training resources
- Access to tailored support
- Registration details for a PWS
- Local authority or government funding support
- PWS sampling and risk assessments
- Link to the process for mains water connections
- Details of PWS manufacturers and installers

- 4.5. Research participants indicated that it would be important that any 'jumping-off point' could provide advice that caters to the range of experience of PWS users. For instance new users felt a PWS user-manual would be invaluable and provide a helpful reference point. In contrast, more experienced users indicated they might benefit more from tailored advice on more complex issues which they may not have dealt with before such as upgrades to their PWS system.

- 4.6. The existence of local networks of PWS users were identified by participants as useful forums for knowledge transfer and skill sharing. However, very remote PWS users and second home owners can feel excluded from these valuable networks of support. In this context, there may be value in considering whether any future 'jumping-off point' may enable and host an online community platform, thereby tapping into sources of knowledge and expertise and making it universally available to a wider PWS community. However, it is important to note the inherent risk that mis-information is shared in an unmonitored forum. This may be offset where a community platform has expert input and where it sits alongside more formal sources of information.
- 4.7. The value and success of a 'jumping-off point' approach may be determined by how well it is trusted and promoted by the PWS community. It would therefore be important that any future design and development process for such a platform engages fully with PWS users, on a co-design model, to ensure the platform meets the needs of PWS users.

Information for tenants

- 4.8. An issue that was identified during our research related to concerns from tenants who were using a PWS. Some of these participants reported that they had little awareness of their rights and what to do if they had problems or concerns in relation to their PWS. Some suggested they had no access to water test results or risk assessments, nor an ability to request a water test.
- 4.9. Tenants of a PWS are unlikely to be the responsible person in the eyes of the local authority, and it is the local authority that regulate PWS. As such tenants are less likely to be able to instruct regulatory water testing or risk assessing in order to identify risks or to satisfy themselves of the safety of the water.
- 4.10. There is a need for the Scottish Government to consider the extent to which the current regulations ensure tenants can access all relevant information for a PWS. Tenants should be enabled and supported to raise any concerns with a regulatory body, and for this to be accompanied with a requirement that these are dealt with by the PWS owner, in a timeous manner, that takes cognisance of the fact the issue relates to access to drinking water.
- 4.11. Whilst none of the research participants were holiday visitors, they also may not always be made aware a holiday property has a PWS, nor be directed to the test results or risk assessments associated with it. This may put people with health vulnerabilities at increased risk and reduces their ability to make an informed choice.

Water supply management tools are not being fully utilised by PWS users, in part because the benefits are not evident

- 4.12. Water sampling and risk assessments are valuable tools that can help PWS users proactively manage their supply. In the current regulatory and support landscape PWS users only access these tools because there is a regulatory requirement to do

so, or usually for other one off reasons that require a test; such as a house sale, grant funding application or planning applications. Despite water sampling and risk assessments being key to effective public water supply management, the PWS users in the research reported they don't necessarily get accessible, useable information from results. This can leave them feeling unable or ill-equipped to resolve any issues identified.

"I believe someone from the council comes over and does the risk assessment and sampling. It always comes back the water isn't drinkable... there are issues with the private water supply, and we are going round in circles unable to get solutions and getting nowhere."
(participant from a focus group)

"Had to pass the tests in order to get the grants... to ensure the work did not impair the water supply. Don't see any need to keep testing..." (participant from a depth interview)

Risk assessments

4.13. Risk assessments are only required for PWS that are a business or serve the public (known as Regulated supplies) and as such awareness of what a risk assessment is amongst the wider domestic PWS community, is low. Research participants often didn't know what benefits a risk assessment might offer. However, for those participants who had experience of a risk assessment, they often found the results useful and informative, and they suggested more guidance would help PWS users take a more structured approach to risk, particularly where it links to further support.

4.14. The use of risk assessments creates an opportunity for PWS users to get ahead of emerging problems, something the research participants noted as a specific concern. Activities such as wind turbines, forestry, agriculture and even hillwalkers, were all raised as having the potential to disrupt or damage a PWS. However, as most participants had not heard of PWS risk assessments, the benefits around identifying risks and taking a structured approach to managing these risks, is lost.

4.15 There is a need to improve awareness and actively promote risk assessments amongst domestic PWS users. This should include a focus on encouraging their use as a water management tool and not merely a regulatory requirement. Where risk assessments are also linked up to tailored advice, support and grant funding options or training opportunities, they are likely to better enable PWS users to address any identified risks.

Water sampling/testing

4.16. Water sampling can give PWS users an understanding of the quality of their supply. However, a number of participants expressed reluctance to have a water sample taken, in part because they believed follow up support would be minimal or wouldn't be tailored to their PWS. There was also a sense of frustration from some participants in relation to accessing follow-on advice when they had their water sampled. In some instances PWS users had not been given access to the full test

results, which also raises questions around consumer and legal rights in accessing a service the PWS has paid for.

- 4.17. Regulatory water sampling is usually arranged by a local authority and their testing meets the Drinking Water Quality Regulators requirements. However, whilst the local authority was sometimes considered a trusted source of local information and advice, some PWS users found their local authority was unwilling or unable to assist in resolving issues resulting from a failed test.
- 4.18. Some PWS users expressed an interest in alternative testing bodies, such as Scottish Water or private companies. Participants suggested it might be easier to arrange tests, particularly to very rural locations and may be cheaper, as well potentially being able to offer expert follow-up advice.
- 4.19. Some participants were also interested in self-administered water sampling, which could offer a quick way to check their PWS. They accepted that if issues were identified, it would be preferable to then seek more formal sampling and support.
- 4.20. There is a need to provide clear information and guidance to help PWS users better understand the benefits of water testing, when and how often to test, what the results mean and what they can do when a test identifies a problem.
- 4.21. We recommend consideration is given as to who else, besides local authorities, can carry out water sampling. For example, Scottish Water are regularly sampling public water supplies across rural parts of Scotland and will have access to testing equipment. Regardless of the body carrying out tests, results should be combined with access to the full results, delivered in plain English, with follow-on tailored advice where necessary.

PWS can be negatively impacted by issues out with their control, such as climate change and land use change. These can lead to PWS running out of water or having to tackle water quality problems

- 4.22. Consumer Scotland welcomes the inclusion of access to “safe and sufficient water” in the Human Rights (Scotland) Bill, Part 5, which recognises the principle of access to water for all contained in the European Union’s recast Drinking Water Directive, alongside the United Nation’s Sustainable Development Goal 6. However, this principle will need to translate into tangible protection, support and remedies for PWS.
- 4.22. Land use changes such as renewable energy (wind farms, hydrogen, hydropower) alongside forestry and agriculture amongst others, whilst welcomed as part of net zero ambitions, can pose threats to access to water for PWS. This is partially because PWS in Scotland’s rural communities are often small, surface water sources that are fragile and vulnerable to even small changes. If a PWS is a simple run-off from a burn it can be disrupted by even a new access road. Damage to, or the loss of water from a PWS, risks making these rural homes and businesses either uninhabitable or unviable. Research participants expressed concern around

developments such as wind farms, not taking into account the potential impact on PWS of development.

- 4.24. PWS are required to register with their local authority, however, this can create regional variations in the type of information held in registers and how up-to-date the registers are. Inconsistencies can include the location of the PWS - with some PWS users choosing to register the home whilst others the water source e.g the spring that serves the home and which could be some distance away. This type of inconsistency may lead to a PWS being missed in any impact assessment as part of a planning application.
- 4.25. Furthermore, recent dry summers have led to many PWS completely running out of water and seeking emergency support, in the form of bottled water from the Scottish Government and delivered with the support of Scottish Water and local authorities. The current PWS registers are likely to make planning for and supporting PWS users more challenging, because the registers don't often record the type of water source (burn, borehole, well etc)¹³.
- 4.26. Surface water sources are likely to be at more risk from water scarcity caused by low rainfall¹⁴, and the current registration system is more likely to limit the ability of local authorities or Scottish Government, to identify homes at most risk of running out of water. This can create immediate short term vulnerabilities for PWS users, but it can also inhibit longer term targeted planning and support for those PWS vulnerable to running out of water.
- 4.27. In order to better protect PWS from any negative impacts associated with land use change and climate change, there is a need to improve the information held about PWS. Creating a single PWS register and incentivising PWS users to ensure it holds up to date accurate information, will support better decision making.

The current grant for PWS, does not adequately reflect either the costs of ensuring a PWS can provide safe and sufficient drinking water, or the ability of PWS users to meet the costs

- 4.23. The risks facing PWS from climate change and land use changes may mean PWS users have to consider major upgrades (such as a borehole) or connecting to the public mains, in order to maintain a safe and reliable drinking water supply. However, the costs can be significant and research participants often requested that grant funding provision should reflect the ability of PWS users to meet the actual costs of work required.
- 4.24. The current grant funding is fixed at £800 and does not reflect PWS vulnerabilities or income levels. In any potential changes to grant funding, the Scottish Government may want to also consider how to encourage innovative approaches to resilience, including; enabling communities to pool resources to create a more resilient community supply and to enable funds to be used for mains connections.
- 4.25. The Scottish Government also need to consider and provide clarity on a strategic and longer term programme of mains water connections for PWS. The Scottish

Government in partnership with Scottish Water, Consumer Scotland and local authorities is piloting a programme of mains extensions to better enable PWS community connections into the mains network. It is important the learnings from the pilot, inform and shape a long-term, structured approach to mains water connections as part of resilience planning for rural PWS communities in Scotland.

5. Conclusion

- 5.1. The current information, advice and funding provision has been recognised in previous consumer research as being insufficient in supporting PWS users in Scotland to effectively manage their water supply and adapt to climate change impacts. The Scottish Government, in seeking to align with the recast Drinking Water Directive has been developing policy, which includes a focus on PWS. Consumer Scotland has undertaken this research to inform the development of policy and practice in relation to information, advice and support for PWS users.
- 5.2. Our research highlighted that further action is required to address the needs of PWS users, in order to provide more than just generic information, and to avoid or reduce the potential for detriment.
- 5.3. In particular, by offering a single website 'jumping-off point', that is able to connect PWS users to information, advice, funding and regulatory requirements. A more joined up service has the potential to link PWS users with where knowledge and expertise exists, even if it is out-with their geographical area.
- 5.4. Furthermore, to offer tailored advice that is available at key points of PWS maintenance e.g. when making an asset upgrade or knowing how to address a failed water test. Any new information, advice and funding provision for PWS users should also consider how it can incorporate water management tools to enable and equip users to proactively manage their supply.
- 5.5. The value of water testing and risk assessments can be limited if PWS users do not fully understand their purpose or how to use the results to improve their supply. As such there is a need to build knowledge and trust in water testing and risk assessments, so they are understood and valued by PWS users.
- 5.6. There is a need to embed protections for PWS from land use change, this can be achieved in part, by improving the registration data available for PWS. Improvements in data will also support resilience planning for PWS more generally, by identifying those most at risk, support can be targeted.
- 5.7. Due to climate change, the most resilient solution for many PWS, may be connecting to the public water network. However, there has not been a strategy to connect PWS for many years. The current Scottish Government funded, mains extension pilot is seeking to reduce the number of PWS at risk of running out of water. A longer term commitment to a programme of extending the mains network in rural Scotland would enable many homes and businesses with a PWS, to secure access to safe drinking water all year round.

6. Who we are

Consumer Scotland is the statutory body for consumers in Scotland. Established by the Consumer Scotland Act 2020, we are accountable to the Scottish Parliament.

Consumer Scotland's purpose is to improve outcomes for current and future consumers and our strategic objectives are:

- to enhance understanding and awareness of consumer issues by strengthening the evidence base
- to serve the needs and aspirations of current and future consumers by inspiring and influencing the public, private and third sectors
- to enable the active participation of consumers in a fairer economy by improving access to information and support

7. Endnotes

¹ [EUR-Lex - 32020L2184 - EN - EUR-Lex \(europa.eu\)](#) Whilst the UK's departure from the EU means there is no longer a requirement to continue to comply with EU law, Scottish Ministers have indicated that, where appropriate, they would like to see Scots Law continue to align with EU law - [UK Withdrawal from the European Union \(Continuity\) \(Scotland\) Act 2021 \(legislation.gov.uk\)](#) .

² [Private Water Supplies: A framework to deliver universal access to safe and affordable drinking water for all | Citizens Advice Scotland \(cas.org.uk\)](#), ['Finding the right solution | Citizens Advice Scotland \(cas.org.uk\)](#), [Sustainable Support: Measures that support private water supplies to meet minimum water quality requirements | Citizens Advice Scotland \(cas.org.uk\)](#), [Testing the waters: Assessing information on private water supplies and sewerage facilities | Citizens Advice Scotland \(cas.org.uk\)](#)

³ [pws-annual-report-2022.pdf \(dwqr.scot\)](#)

⁴ [Water shortages support - gov.scot \(www.gov.scot\)](#); [Adapting to climate change and water scarcity - gov.scot \(www.gov.scot\)](#); [Private water supplies and the potential implications of climate change | CREW | Scotland's Centre of Expertise for Waters](#)

⁵ [CREW, Private Water Supplies and local economic impacts in Scotland; guidance-on-forestry-activities-near-pws-sept-2018.pdf \(confor.org.uk\)](#)

⁶ This is based on average test results across a range of health based standards [pws-annual-report-2021.pdf \(dwqr.scot\)](#)

⁷ [annual-report-public-supplies-2021.pdf \(dwqr.scot\)](#)

⁸ 12.1% for regulated PWS

⁹ [pws-annual-report-2022.pdf \(dwqr.scot\)](#)

¹⁰ See 2 above

¹¹ Argyll and Bute, East Ayrshire, East Dunbartonshire, Fife, Midlothian, Highland, Perth and Kinross, South Ayrshire and West Dunbartonshire

¹² See 2 above

¹³ [pws-annual-report-2022.pdf \(dwqr.scot\)](#) 53% of Type B PWS water type are unknown.

¹⁴ [CRW2018_05_Policy_Brief_FINAL+link.pdf \(crew.ac.uk\)](#)