



Water  
Resources  
West

# A thirst for collaboration

Water Resources West's  
first survey of non-Public  
Water Supply Abstractors

September 2023



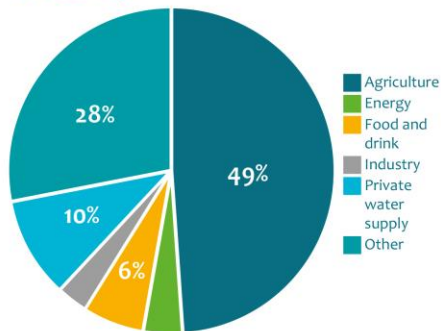


## Key messages from WRW's survey of non-public water supply (non-PWS) abstractors

Non-PWS abstraction supports UK energy and food security and underpins vital parts of our economy. This is the first survey of its kind and we had a good response rate, covering most catchments in our region.



A range of sectors were represented in the survey.



68% of abstractors are interested in working with others in their catchment but only 1% are part of an abstractor group.

Some of those willing to collaborate thought a group like WRW should support them.



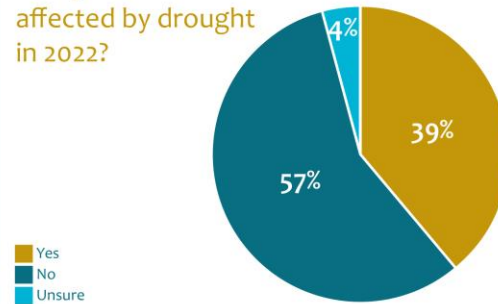
1/3

of abstractors report their business is constrained by the amount of water they can abstract. This is particularly the case for the horticulture sector and those with private water supplies.



1/3 of abstractors also said that water quality issues can affect their ability to abstract.

Was your abstraction affected by drought in 2022?



39% of abstractors were affected by the 2022 drought.



Agriculture was the most affected sector but private water supplies and golf clubs also reported issues.

1/3 of abstractors have a plan to deal with future droughts.

3/4 of abstractors would experience a major or significant impact if their licence was reduced by 25%.

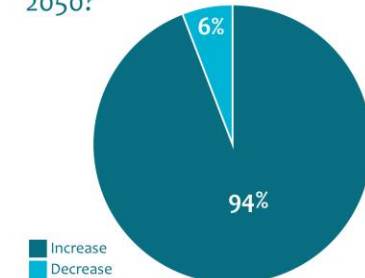


Greater awareness of potential abstraction licence changes would be beneficial as only 1/5 of abstractors have heard about plans to reduce or cap their licence in the future.

94% of abstractors think their water use will increase by 2050 yet only 1/3 have plans to reduce their water use via water efficiency initiatives.

Most abstractors said they have no plans to reduce their water use. This may be due to the nature of their business (i.e. golf clubs & fisheries) which prevents them from doing this.

How do you expect your water use to change by 2050?



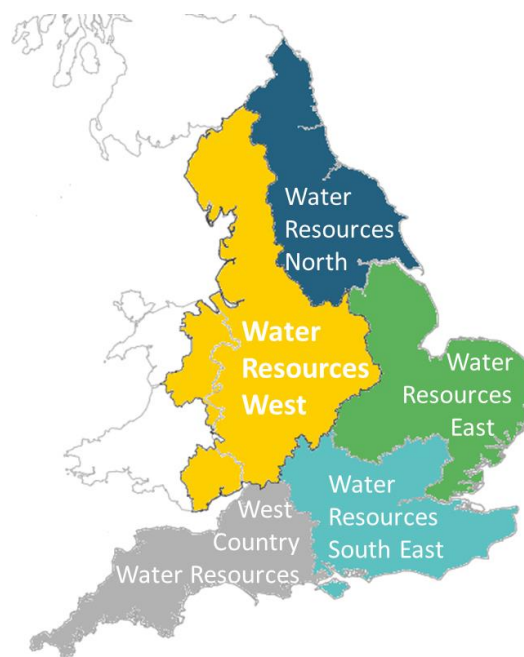
# 1. Introduction

Water Resources West (WRW) is a regional water resources group. It is one of five groups that cover England, and part of Wales.

The job of a regional water resources group is to make a plan for water resources and make sure we have a sustainable supply of water in the future.

Our region includes five water companies, United Utilities Water, Severn Trent Water, South Staffs Water, Hafren Dyfrdwy and Dŵr Cymru Welsh Water.

The region also contains over 2,500 licenced abstractors from other sectors such as agriculture, energy, recreation and industry. We collectively refer to these abstractors as ‘non-Public Water supply’ or non-PWS abstractors. Collectively they use around 20% of the water consumed within our region and represented in the group by sector representatives, typically trade associations.



Every five years, Water Companies make plans for water resources and the investment need to provide fresh clean drinking water. These plans are underpinned by extensive customer research to make sure companies are delivering what their customers want.

This report describes the first attempt to undertake similar research into the views of non-PWS abstractors across the region.

We are grateful for the support of the Environment Agency in undertaking this survey.

# 2. Methodology

The questions in the survey were designed by WRW with the support of our members representing the agriculture, energy, navigation and paper industries.

Support from the Environment Agency was essential, as WRW does not hold the contact details of abstractors in the region. Because the Agency only holds names and addresses, and not email contacts we had to write a letter to make contact with our target audience.

On our behalf, with costs paid by WRW members, the Environment Agency sent around 2,500 letters to all abstraction licence holders (apart from water companies) in the English part of our region. It asked people to visit the WRW website and complete a survey about water use that was hosted there.

We also asked our members representing the non-PWS sectors to promote the survey with their members.

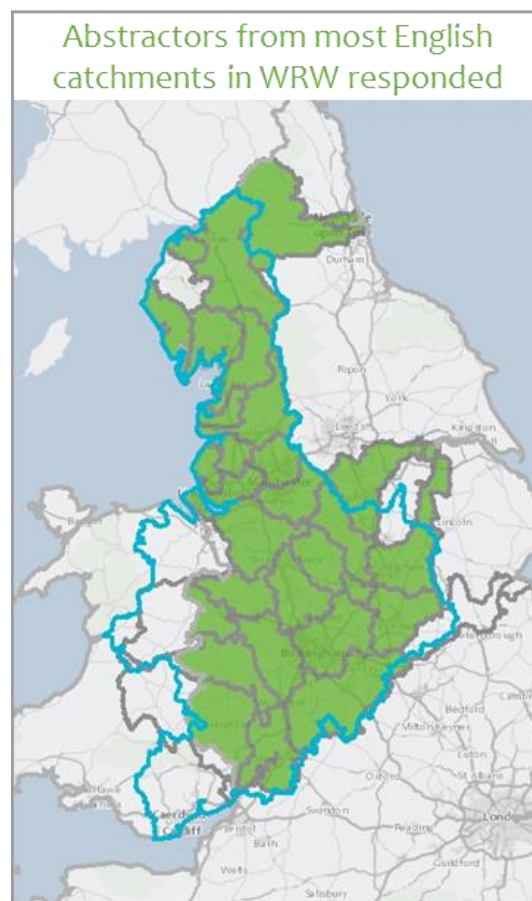
The survey was supported by a privacy notice and participation in the survey was entirely voluntary.

The survey asked about a variety of subjects. Responses were either multiple choice or free text depending upon the question asked.

We received 80 responses to the survey, a response rate of 3.2%. We consider this to be a good response given that we were seeking participation via a letter and WRW is a relatively young organisation. The responses are more than sufficient to report regional level results that are statistically significant at the 90% confidence level with  $\pm 10\%$  accuracy. Over 90% of respondents provided text responses with additional

information, demonstrating a high level of engagement with the survey.

The responses we received were well spread over our region. Responses were received from abstractors in 28 out of 31 WFD management catchments across the English part of WRW.



### 3. Hotspots

Locations of the respondents were generally proportionate to the number of licence holders in each catchment. However, in the Upper Mersey catchment, we had a higher rate of response than expected. These were from a mix of sectors and included those with groundwater and surface water licences. A majority of them predict that their water use would increase in the future and that reductions in their licences would have a major or significant impact on their business. This suggests that the Upper Mersey catchment could be an area to focus future engagement.

There were no respondents from the Idle and Torne, a catchment that WRW identified as a priority for environmental improvement. This suggests limited awareness of the issues and that WRW should target more engagement in this area.



## 4. Business Sectors

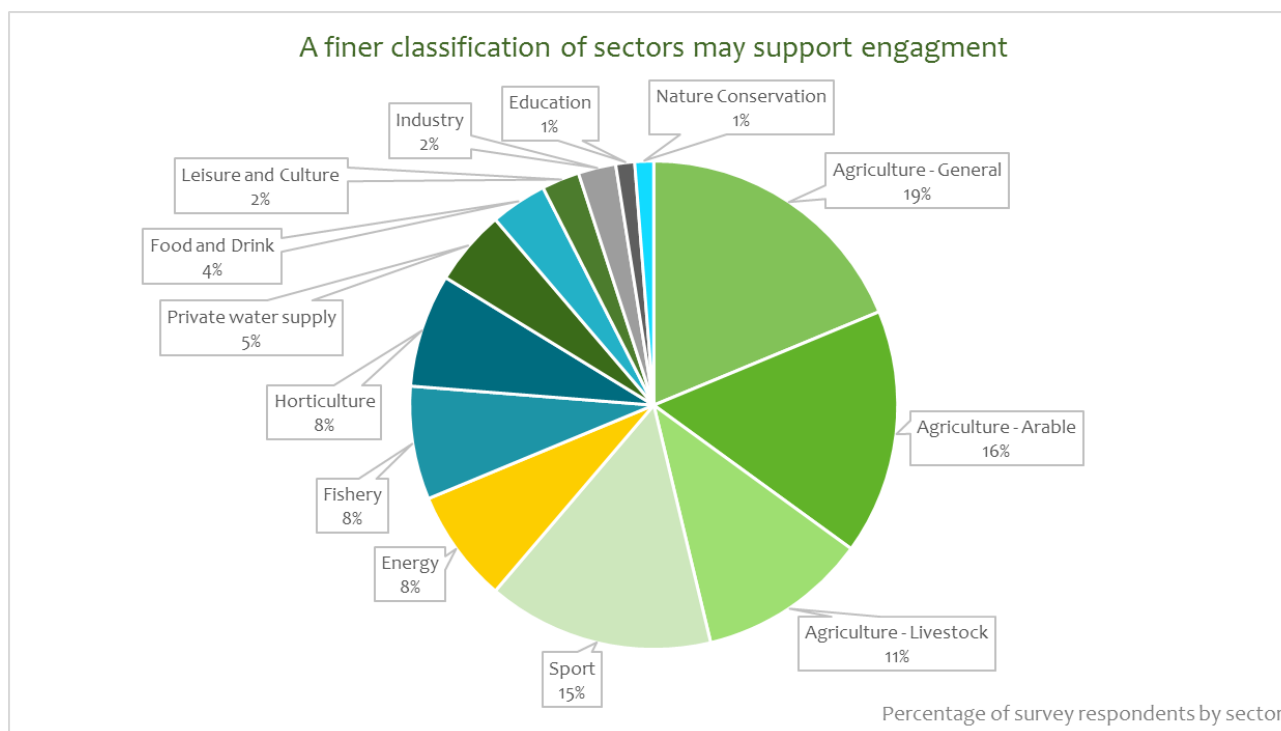
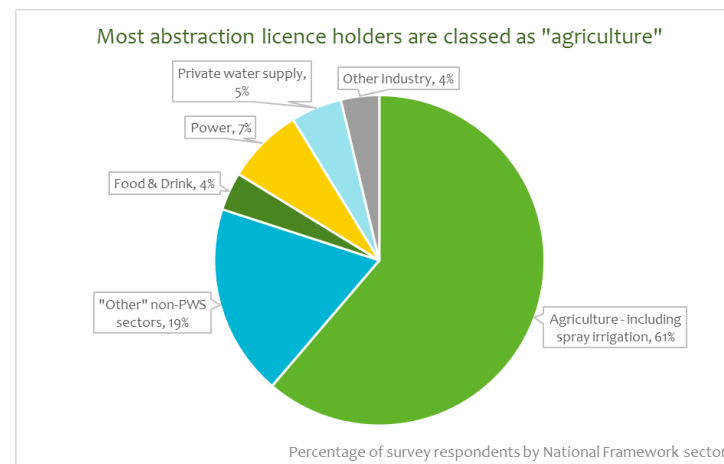
The survey asked people to assign themselves to one of the sectors we have used in our regional plan. This was the same classification as the Environment Agency used in its National Framework for Water Resources<sup>i</sup>.

A majority of abstraction licence holders in our region are from the “agricultural” sector, and as expected, we received the most responses from them. “Other” non-PWS sectors were the second largest group of respondents, despite being a relatively small proportion of abstraction licence holders. Power, industry, food and drink and private water supply sectors were also represented in the survey results. Disappointingly, we received no responses from the chemicals or paper sectors.

Based on the level of interest from “other” sectors, to analyse the survey response we re-categorised

the survey responses into a broader range of categories.

This categorisation highlights other sectors with a high degree of interest in water resources. Sport, including golf courses and equestrian sports, was highly represented in the survey, as was horticulture and fisheries. Such a categorisation may be useful for further engagement and analysis.



## 5. Sources of water

We asked whether respondents held more than one abstraction licence and whether they took surface water (lake, river, reservoir) or groundwater (borehole, well or spring).

We received an even split of responses between them, even though there are more ground water licences held in the region. This indicates that surface water abstractors are more engaged with water resources issues.

A third of respondents hold more than one licence, and a small number of abstractors have both groundwater and surface water licences. In these regards, the responses reflect the proportions of licences held in the region.

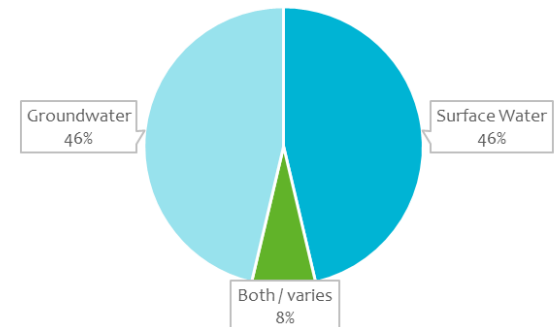
We also asked “how much water are you allowed to abstract?” Respondents covered the full range of licenced volumes from less than a thousand cubic metres per year to

large energy-sector abstractors over 10 million cubic metres per year.

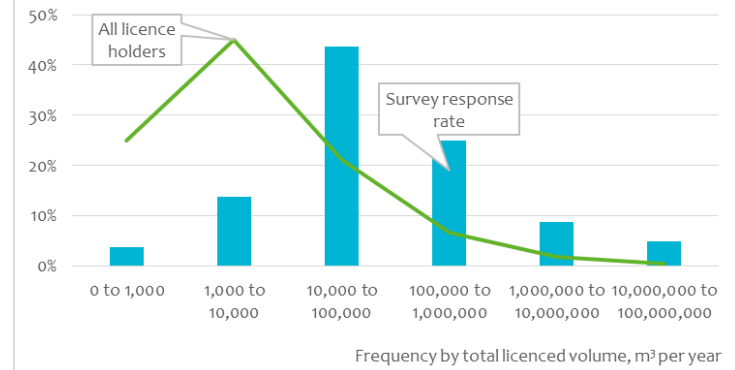
Our respondents tended to be larger abstraction licence holders, suggesting that those taking more water are more engaged with water resources issues.

Some abstractors can store the water they abstract. i.e. water abstracted in the winter for use in the summer. This could be in a reservoir, lake or pond. Around one quarter of respondents said they could do this. Storage is more common in the Severn basin, particularly Warwickshire and Shropshire. It is predominantly for the sectors that use water for irrigation, i.e. arable and mixed agriculture, horticulture and sport. Storage is also more common amongst holders of more than one licence, and especially those that hold both surface water and groundwater licences.

Respondents were equally split between surface water and ground water abstractors



Larger abstractors are more engaged



## 6. Water Sufficiency

We were keen to understand in the broadest terms whether people feel they have enough water when they need it. To uncover this, we asked the question “**How would you describe use of your abstraction licence?**” and offered a multi-choice answer.

Around one third of abstractors think they usually have enough water, but sometimes need more. A similar proportion said their licence was sufficient but did not have much room to take more. A further third reported they had sufficient water.

We used another question to cross-check this response and asked “**Is your business constrained by the quantity of water you can abstract?**”

The responses match quite well with nearly half of respondents saying that their business is not constrained by water availability. There was a good degree of

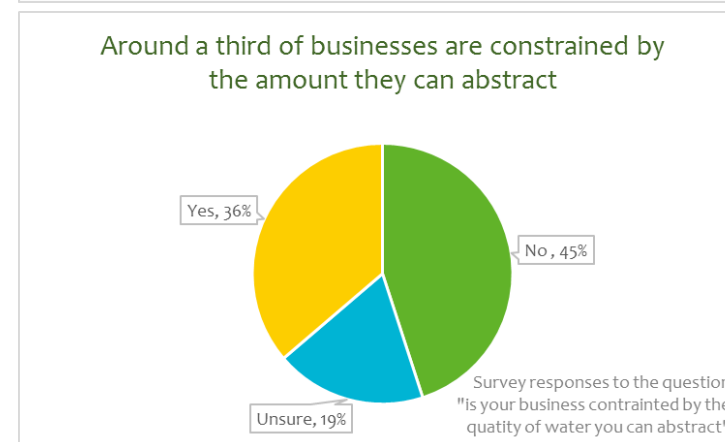
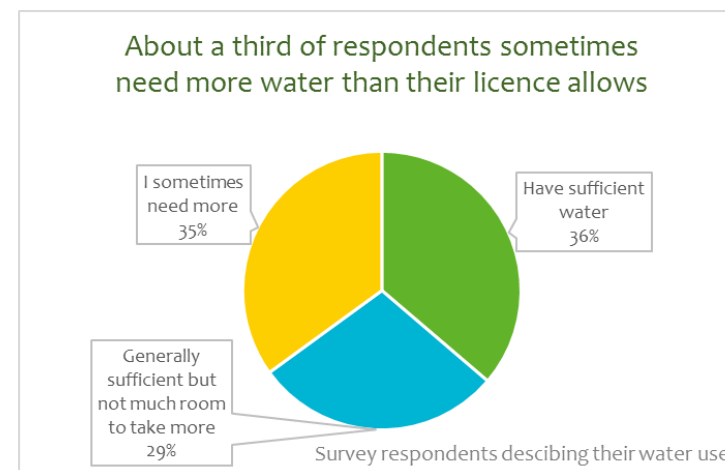
correlation between the responses to the two questions.

**Horticulture** and **private water supply** sectors were more likely to report these constraints than other sectors. There were no particular “hotspot” catchments for these issues. Surface water and groundwater abstractors were equally affected.

Over half of abstractors reported that the amount they abstracted varied significantly from year to year. These were predominantly irrigators, 70% of whom reported significant variability. They also tended to be surface water abstractors. With such a large proportion of abstractors seeing significant year on year variability, planners should use caution when extrapolating from short periods of recent abstraction data to long term trends. Those with significant variability were 60% more likely to report that their business is constrained by the quantity they can abstract.

The vast majority (94%) of abstractors expect their water use

to increase in the future. However most of these (84%) were unable to provide a quantified estimate.



## 7. Water Quality

Through collaborative discussion with our members WRW has been considering how we add more value in the future<sup>ii</sup>. We want to support all abstracting sectors. Abstracted water quality is one area identified that could benefit from greater coordination. The water we abstract comes from the environment, so it also links to our vision for an enhanced water environment.

We therefore thought it would be interesting to ask the question **“Does water quality ever affect whether you are able to use your abstraction licence?”**

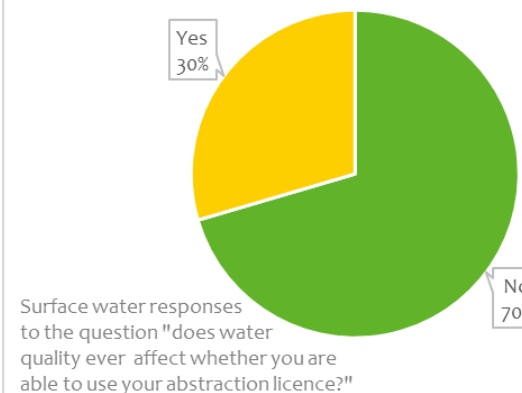
This result shows that 21% of our respondents say that their ability to use the water they abstract is, or has been, affected by water quality. This is a significant proportion and it indicates that there are potential benefits that could be delivered by improvements in water quality.

Digging into the data a little more, this was particularly an issue for

fisheries and for private water supplies. It was more of an issue for those with surface water abstractions, of which 30% reported this issue. This was particularly the case for those who have no storage to rely on, 38% of whom reported water quality issues. A smaller proportion (11%) of groundwater abstractors said they were affected.

The balance of answers to this question suggests that water quality may be a greater concern for some non-PWS abstractors than previously thought and raises questions about how best to deal with upstream pollution. It highlights the need for more links between water resources planning and water quality considerations, and a potential coordinating role for WRW.

A third of surface water abstractors are affected by water quality



**“Activity upstream can and has affected the quality”**

Surface water abstractor, Eden and Esk catchment

**“Nitrates, Iron, Turbidity, Pesticides (etc) can all have an effect”**

Private water supply, multiple locations



## 8. Drought experience and planning

In 2022, parts of the UK experienced a long period of dry weather. A severe summer heatwave with record-breaking temperatures, dry soils and low river flows, resulted in challenges for water resources. We were keen to learn about the experience of abstractors last year, and whether they have made plans for future droughts.

The responses show that 39% of abstractors were affected by the 2022 drought. This was mostly surface water abstractors, of whom 57% were affected compared with 17% of ground water abstractors. Agriculture and private water supplies were the most affected sectors. Those with variable demands were also more affected than others.

Abstractors across all parts of the WRW region were affected to some extent.

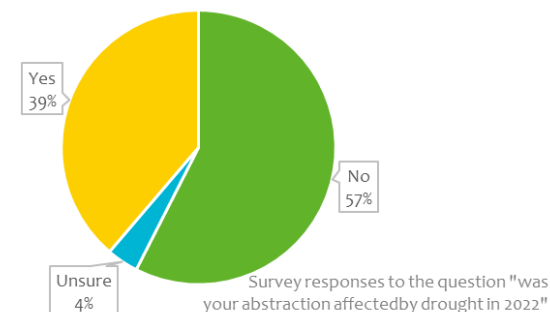
A small proportion (6%) of those affected by drought asked their local water company for help and only one abstractor reported that they traded licenced volume with their neighbours. Only 9% of abstractors have ever resorted to a water company supply.

We followed up on this with the question **“Do you have a plan for future droughts?”** with 34% responding “Yes”. Among those affected by drought in 2022, half have a plan for drought and the other half do not.

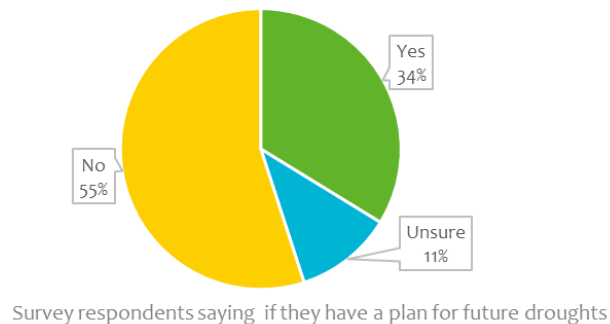
Drought plans are more prevalent for private water supplies, horticulture, sport and livestock farmers.

To complete this section, we asked people to tell us more about their drought experience. We discovered that many businesses were affected by drought, with some experiencing crop damage and financial loss.

Nearly 40% of abstractors were affected by the 2022 drought



One third of abstractors have a plan for future droughts



***“The river flow went below optimal flow so we were advised by the EA to stop abstracting. This meant that our crops didn't grow as well as we'd hoped. We are trying to irrigate at night to prevent evaporation”***

Arable farmer, Staffordshire

***“Difficult. Steep hillside location, drought in 2022 meant we had to buy in water from supermarkets and stop people using showers. Consequently, properties remained unlet (costing £1,800/day).”***

Private water supply, Cumbria

***“We couldn't abstract water for 10 weeks last summer, meaning that we lost significant grass coverage on the greens. This has cost us upwards of £1,000 to repair”***

Golf club,  
Derbyshire

***“We have experienced increasing demand on our water resources with more extreme summer weather patterns with heavy storms and periods of drought, making planning difficult. We have winter storage and use sprinklers but we are finding it difficult to know how to plan for the future.”***

Agricultural abstractor, Shropshire

***“Our demand for water increased in a drought by up to 70%. This is monitored via our irrigation controller. Also concerned about the impending ban on the use of peat which will increase our requirements by another 30%+”***

Horticultural sector, Cheshire

## 9. Licence changes

As a country, we are still far from achieving the Government’s ambition of restoring 75% of water bodies to their ‘near natural’ status in England. Abstraction can affect the flow in water bodies, which in turn can affect their ability to support native species and functioning habitats. Abstraction reductions are likely to be needed by the non-PWS sectors, but they could have implications for businesses, the economy, energy security and food security. We understand that the Environment Agency will undertake catchment reviews, and that licence holders will be notified of possible reductions ahead of any changes from 2028 onwards. The extent that this affects each abstractor will greatly depend on local circumstances in each catchment.

We therefore wanted to learn more about the current level of knowledge about potential licence changes. This could be licence

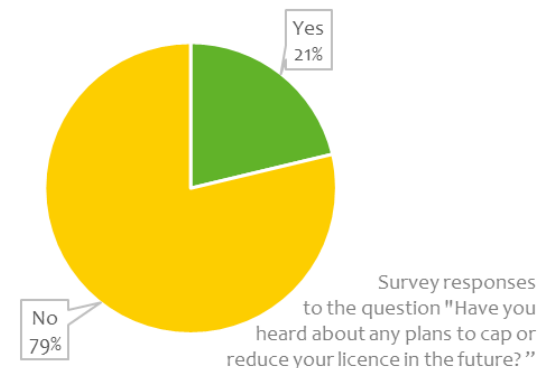
capping to ensure no-deterioration from the current ecological status, or reductions to improve the environment<sup>iii</sup>.

Around one fifth of respondents had heard about any such plans. Although catchment reviews have not yet started, and it is impossible to say at this stage which licences will need to change, WRW’s view based on our analysis of EA data is that nearly a third of licence holders have the potential to be affected by changes. In this context, greater awareness would be beneficial.

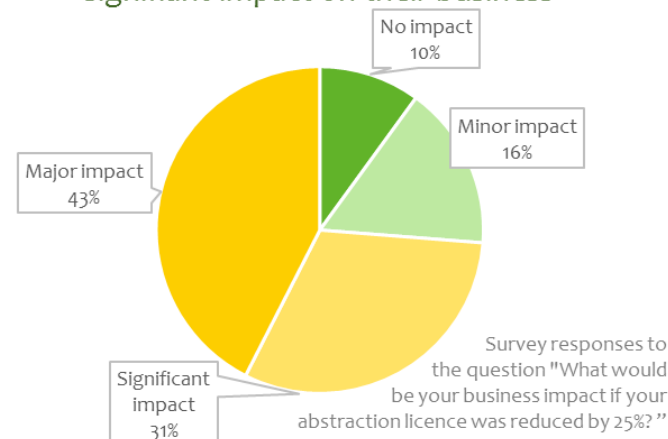
Awareness of change was higher amongst arable farmers (46%) and relatively low amongst those with only groundwater abstractions (8%).

We also asked **“What would be your business impact if your abstraction licence was reduced by 25%?”** Around three-quarters of those responding would face a significant or major impact upon their business if they were to lose 25% of their licence capacity.

A fifth of abstractors have heard about plans to cap or reduce their licence in the future



¾ of abstractors would face a major or significant impact on their business



**“Needs to be a proper water management strategy which takes into account impact on flows within a catchment due to development demands and balancing that with need to produce food. Everyone in a catchment is responsible for water use.”** Agriculture



Irrigators would be particularly affected by such changes (85% of them), as would those whose businesses are already constrained by their licences (90%). The Shropshire Middle Severn and Upper Mersey catchments had a significant proportion of abstractors reporting such impacts.

Although larger abstractors were slightly more likely to be aware of potential licence changes, large and small abstractors are equally likely to see business impacts.

We then explored the willingness of abstractors to surrender licence capacity with the question “Would you voluntarily give up some of your licence to benefit the environment?”

The majority answer (66%) was a clear ‘no’, and only 5% said ‘yes’. However a sizeable minority, said ‘maybe’. Those abstracting for nature conservation and public amenity were more likely to be open to this, while irrigators were less likely to be open to it. Larger abstractors were slightly more likely to be open to voluntary changes.

Unsurprisingly those who reported no or minor business impacts were much more likely to be open to voluntary changes, which explains the reluctance among irrigators.

And then to test the financial interest involved in surrendering licences we asked “Would you give up some of your licence if you were compensated for the loss?” With compensation, there was still a majority that said ‘no’. The proportion open to change did increase compared to voluntary change, nearly reaching half of respondents. Again those, who would experience business impacts, e.g. irrigators, were less likely to be open to such changes.

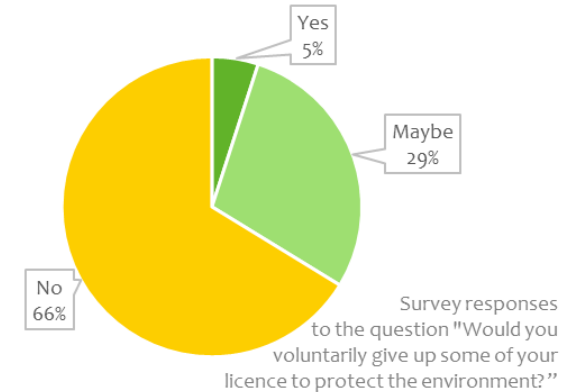
We then asked a free text question of “**Would you like to share any thoughts on protecting environmental flows?**”

*“I am in favour of ensuring that there is always at least a minimum necessary flow in the beck to protect the flora and fauna in the location”*

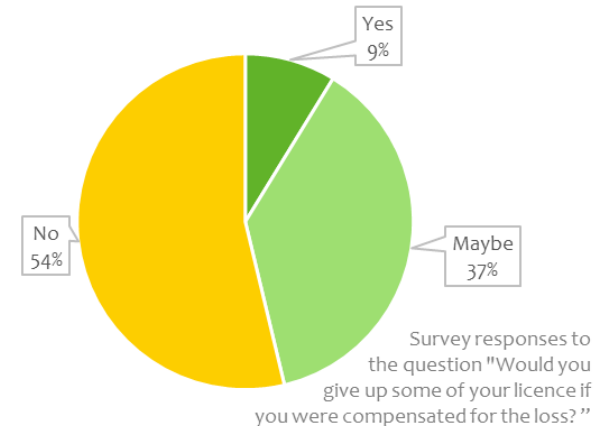
Public amenity / tourism sector

*“If I can build a sufficiently large reservoir, I would be willing to relinquish some of my summer licence”* Agricultural abstractor

A third of abstractors may be open to voluntary licence changes to protect the environment



Nearly half may give up some licence if compensated for the loss



## 10. Abstraction Reform

We thought it would be interesting to take thoughts on abstraction reform as part of this survey. At the moment abstractors pay a fixed fee regardless of how much of their licence they use.

We asked a question on charging for water by volume **“Do you think it would be fairer to pay for the volume you use until you reach the full licenced volumes?”**

Abstractors had mixed views on this, with a broadly even split between “yes”, “no” and “maybe” answers.

Arable, horticultural and industrial abstractors seemed more in favour of this. It was also favoured more by those who would have no or minor impacts of abstraction licence changes.

We then asked a question on price elasticity **“if the price of water increased, would you be motivated to use less?”** A high proportion

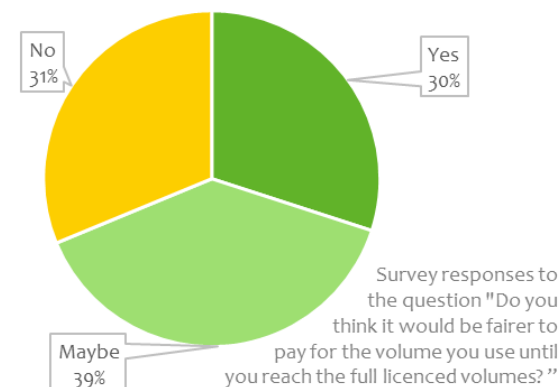
(65%) said that it wouldn't. Those whose businesses were constrained by their licence were less likely to be price sensitive. Those who would have no or minor impacts of abstraction licence changes were more likely to be price sensitive.

There were strong correlations between these two questions. 94% of those who may be motivated to use less, think volumetric charging may be fair. Conversely, 72% of those who think volumetric charging would not be fair, would not be motivated to use less.

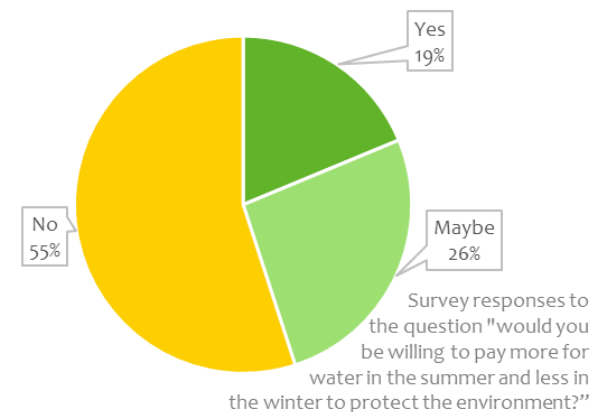
We also asked about seasonal charging and found similar responses.

We asked a free text question “Would you like to share any thoughts on paying for water resources?” The responses give light to the apparent split of opinions in the graph above.

Abstractors have mixed views about metered charging



Most abstractors do not favour seasonal charging



Typical quotes from those in favour of such a move are:

- “Right to pay more for using more water” – Agriculture
- “surely makes sense to encourage lower quantities” – Energy

Those against these ideas quoted cost concerns or an inability to cut back on use:

- “Food inflation is already a political issue, charging more for abstraction would only make it worse” – Agriculture
- We only use what we require. We don't want more & we won't accept less! Our environment is currently well protected in the uplands in any case. As a private water supply, we take water from a spring that arises on the property & that supplies the units on the property. the system is less than 20 years old & thus has no leaks or wastage.” – Private Water Supply
- “Price has been increased 400% this year. We as a

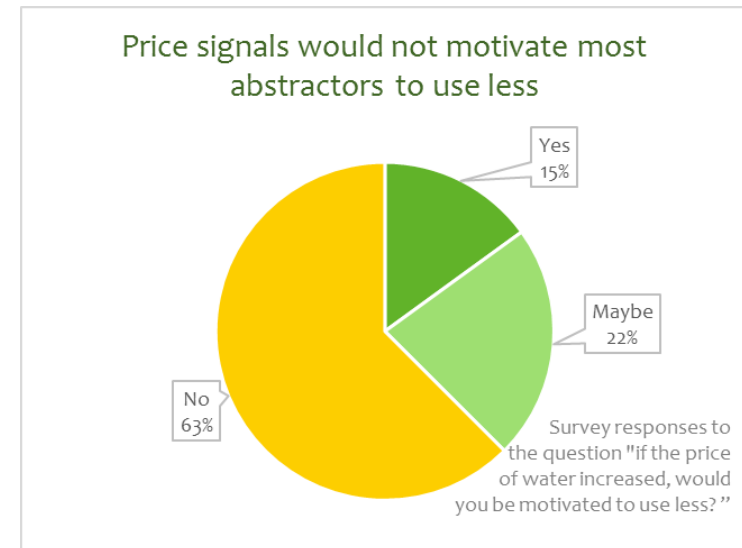
*disabled fishing club think this is grossly unfair, we do NOT abstract any water for any use. What water enters our pond the exact amount is returned into a spring fed stream 200 yards downstream.” – Fishing Club*

Some respondents highlighted both positive and negative aspects:

- “As my Abstraction Licence cost has just doubled, admittedly after being the same, more or less, for 30 years I feel that it should be based on the quantity abstracted, particularly as my licence is connected to a Water Mill and all water abstracted is returned to the beck in a more aerated condition that when it was abstracted to the benefit of the downstream wildlife. However, this would militate against any future owner who wished to generate electricity using water up to the limit of the licence, hence the

*“Maybe” response” – Mill owner*

- *There should be more financial incentive for business like golf course to become self-sufficient in water. I appreciate that putting up the price of water could be that incentive but the capital investment for such a project is significant and beyond most golf clubs without support.” – Golf Club*





## 11. Working with others

We wanted to know the experience and appetite for collective effort that we might be able to tap into.

Most abstractors (68%) show interest in collaborating with others in their catchment. Around half of respondents were able to share ideas about how water resources could be improved or shared in their area. However, there is limited experience of doing so already. Less than 10% of respondents said that they are already working with others locally, and only 1% said they currently belong to a local abstractors group.

Those with more than one licence were more likely to be interested in such collaboration, as were those with surface water licences. Those with both surface water and groundwater licences were much more likely to be interested (91%). The sectors most interested in collaboration were private water

supply, public amenity/tourism, arable farmers and horticulture.

Those whose businesses are currently constrained by their licence are more likely to favour collaboration, and are more likely to be already doing it.

Those aware of potential licence changes are much more likely to favour this (94% yes/maybe). 100% of those already collaborating in catchments foresee major or significant impacts from abstraction licence changes. This indicates that EA communications about potential licence changes could be an important pre-cursor to catchment collaborations.

Those who said they would have no or minor impacts of abstraction licence changes were slightly less likely to favour collaboration, but even amongst this group over half (52%) said they may be interested.

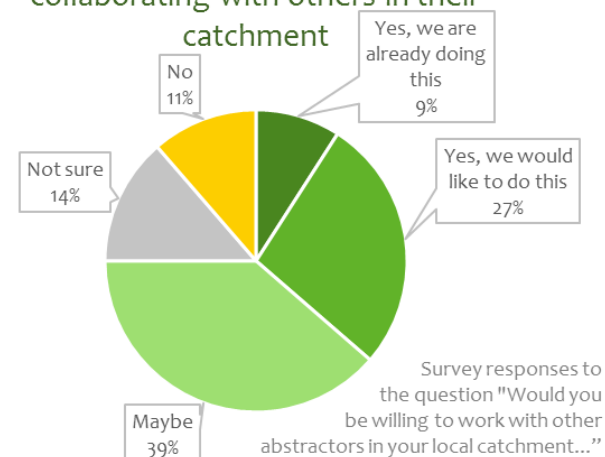
Those who think volumetric charging is unfair are less likely to favour collaboration. 100% of those who are already collaborating think volumetric charging is fair. Those

who are price sensitive are more likely to favour collaboration.

There is little practical experience of licence trading or developing shared resources. Only 3% of respondents said that they had ever traded an abstraction licence. Those who had were in the energy and agricultural sectors. No respondents said they had ever developed a shared resource.

**Only 1%**  
currently belong to a  
local abstractors group

Most abstractors show interest in collaborating with others in their catchment



We then asked two free text questions. The first was **“Do you have any ideas on how water resources could be improved or shared in your area?”** Some responses were however more positive and are listed below:

- *“Store more winter rain for summer use” – Agriculture*
- *“Better maintenance of water courses to reduce weed burden. Hold water companies to account for regular pollution of water courses” – Agriculture*
- *“Obtaining visibility of other license holders across all the regions in the country. To enable open dialogue as abstraction limits are reached to help support business and maintain supplies to customers.” – Private Water Supply*
- *“1) More active water management by way of Internal Drainage Board type organisation which manages the drainage network to remove surplus water in winter and maintain water availability in summer. 2) Reform of planning to encourage more reservoir construction. Farmers*

*are willing to invest in new infrastructure but lose faith in the face of significant restrictions” – Agriculture*

- *“More flexibility to share and pool usage and abstraction between users” - Agriculture*

The second free text question was **“Would you like to share any thoughts on developing water supplies?”** A little over half of the respondents offered an answer to this question and a number of answers revealed a poor opinion of water companies and the Environment Agency:

- *“The EA are unable to tell us why the level 70 metres lower than the spring failed. There is suspicion that other farm and quarry users may have taken more further up the underground stream or a new borehole is tapping it but these are guesses. “ – Private Water Supply*
- *“This is the LAKE district. There should be enough but it’s unfit to drink and rivers dry up. Better management needed and less bonuses issued.” - Agriculture*

- *“The Environment agency and Water Board should invest their monies in water storage they have closed reservoirs to save money. Farming industry doesn’t make the money to invest thousands in storing water. Government should get them to sort the new farming grants aren’t cost effective to medium to small farmers. fields are wide spread over vast area - can’t transport water from one area to another” – Agriculture*

We also asked **“Should a group like WRW help support you to work with other local abstractors on these issues?”** 94% of those who would like to collaborate in catchments either thought WRW should support, or were unsure about it. Irrigators, industry and public amenity / tourism are more likely to welcome WRW support.

Larger abstractors favour WRW support, as do those with awareness of potential abstraction licence changes. Those who support volumetric charging are more likely to welcome WRW support.

Many are unsure (41%), and those who were unsure about catchment collaboration were also unsure about WRW support (90%). This indicates that WRW could do more to increase awareness of the group and the kind of support that it could provide.

We asked whether people would be willing to be contacted by WRW again for clarification, further research or other consultations. More than 70% of those responding were willing to be contacted by us again for at least one purpose. Larger abstractors are

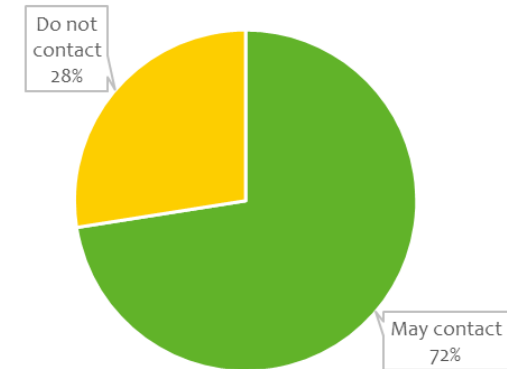
more open to contact from WRW, as do those with more than one licence. Arable farmers are less likely to want contact and those with groundwater licences less likely to welcome contact from WRW.

Finally, we asked, as a free text response, whether there was anything else respondents would like to tell us. There were not many substantial responses to this question, but we received one notably eloquent reply which is reproduced below in full:

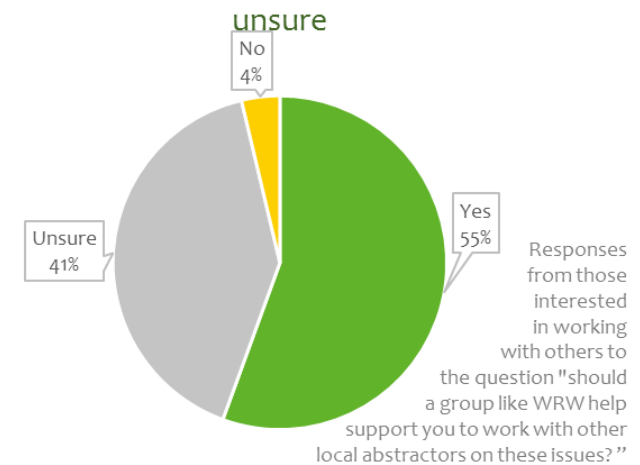
*“Don't know who WRW are. We would love to know how we could save water but the sheer costs probably put us off as we are so small a producer at up to 99kW. We'd love to Water utilities companies to plug the leaks and stop big wigs from taking bonuses that should be used for plugging water wastage. We'd love companies and farms that throw sewage and contaminated water into the rivers to be held accountable. We'd love to see sewage not being allowed into the water supplies and frankly we would love all water polluting businesses to be held accountable including the water companies who don't make enough effort to stop water leakage and who don't prosecute companies who leak contamination into the rivers and the sea. The income gained from that would enable water companies to create more dams, underwater storage tanks etc. to enable water supplies to be more readily available. We would love every new house or building to have water storage that can be plumbed into the main water system whether it be just for their consumption. More money should be spent on cleaning and recycling including sewage so it's drinkable like other countries. We need to recycle all we can very much indeed. I'd love it if we could re pump water back upstream to reuse and create more electricity as that would be fantastic but sadly our company is too small to afford to indulge in such a scheme.”*

Energy Sector Company

Most respondents were happy to have further contact from WRW



There's a good level of interest in support from WRW, but many are





## 12. Analysis

We are grateful to those who responded to the survey. It provides a much richer understanding of abstractors and the

water resources issues they face. Below is a summary of views, with those seeing similar issues grouped together<sup>iv</sup>.

There is a clear appetite for, and need for collaborative working to meet our water resources challenges. The results show

there is much work to do in raising awareness of who we are and what we do to support. These survey findings will be extremely helpful in targeting that engagement and the support we can provide.



### Surface water irrigators

- Includes arable farmers, horticulture and sports, e.g. golf and equestrian
- Aware of water resources issues and keen to engage with them
- Interested in working with others in their local catchment
- Abstraction varies from year to year
- More likely to be affected by recent drought
- Likely to see significant business impacts if their licence changes
- Unlikely to support voluntary or compensated licence changes



### Livestock farmers

- Includes cattle and poultry farms, etc
- Water used for animal drinking and hygiene
- Likely to have groundwater abstractions
- Abstraction doesn't generally vary from year to year
- Unlikely to be affected by recent drought
- Likely to see significant business impacts if their licence changes
- Average levels of awareness and interest in working with others in their local catchment
- Unlikely to support voluntary or compensated licence changes



### Private water supplies

- Water for domestic use; may be provided by a small company (not a statutory water undertaker)
- Predominantly groundwater supplies
- Abstraction doesn't generally vary from year to year
- Unlikely to be affected by recent drought
- Likely to see significant business impacts if their licence changes
- May have a water efficiency plan
- Average levels of awareness and interest in working with others in their local catchment



### Low consumptive

- Includes energy, e.g. hydropower, fisheries, historic mills etc
- Likely to be surface water abstractors with larger licences
- Abstraction less likely to vary from year to year
- Very unlikely to have water efficiency plan
- Mix of impacts if licences were changed
- Less interested in working with others in the local catchment
- Likely to be open to licence changes if compensated
- Fisheries particularly affected by water quality issues, others in this group less likely to be affected



### Large groundwater

- Includes food and drink manufacturing, other irrigators, etc
- Groundwater abstractions
- Abstraction doesn't generally vary from year to year
- Water quality can sometimes be an issue
- More likely to be affected by recent drought
- Likely to see significant business impacts if their licence changes
- Likely to have a water efficiency plan
- Interested in working with others in their local catchment

## Notes

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<sup>i</sup> [A National Framework for Water Resources](#), Environment Agency, March 2020

<sup>ii</sup> [Regional planning for the future](#), Water Resources West, April 2023

<sup>iii</sup> [Appendix 4: Long term environmental water needs, Water Resources National Framework, Environment Agency, March 2020](#)

<sup>iv</sup> Large in this analysis refers to those abstracting more than 10,000 m<sup>3</sup> per year. 30% of licence holders in our region have licences greater than this. Smaller abstractors were under-represented in our survey, illustrating that they may be less engaged in water resources issues. Photos in this diagram: [Holger Schué](#), [JackieLou DL](#), [Henryk Niestrój](#) and [vivi14216](#) from [Pixabay](#), and [Marczoutendijk](#) / [CC BY-SA 4.0](#).