



**INTERSTATE COUNCIL ON WATER POLICY (ICWP) WATER DATA
GOVERNANCE REPORT**

Rachael Stein

May 27, 2026



Cover Photo: U.S. Geological Survey (USGS)

GROUNDWATER GOVERNANCE REPORT

INTRO & PURPOSE

Groundwater is a key part of water supply in the United States and is used for domestic, agricultural, and industrial purposes. Management of groundwater is largely handled at the state and local level, which means governance structures and regulatory approaches differ across jurisdictions. As a result, there is not a single, consistent way that groundwater is regulated, monitored, or managed across the country.

This report looks at how groundwater is currently governed and how groundwater data is collected and managed across different jurisdictions. The focus is on understanding how these systems are set up in practice, including permitting requirements, reporting thresholds, enforcement approaches, and data accessibility, rather than evaluating whether any individual system is effective. The goal is to identify patterns in how groundwater governance and data practices are structured, and to document where approaches appear to differ across jurisdictions.

To support this analysis, a survey was distributed to agencies and organizations involved in groundwater management. The survey collected information on permitting, registration, and reporting requirements, oversight, enforcement, and data practices. Because the number of survey responses is limited, the results are supplemented with information from existing reports including *Groundwater Governance in EPA Region 5* and *Groundwater Governance in the United States (GWREF)*. These sources are used to provide additional context and to help identify whether similar patterns appear beyond the survey responses.

The purpose of this report is to present what the survey responses show about groundwater governance and data practices, while also incorporating relevant findings from existing reports. Survey results and external information are kept separate throughout the report, so it is clear what is based on survey responses and what comes from other sources.

SURVEY OVERVIEW

The survey was developed to better understand how groundwater governance and data practices are structured across jurisdictions. It was distributed in March 2026, and responses were collected through April 2026. The survey was sent to agencies and organizations involved in groundwater management, including state agencies, interstate entities, and regional or local groundwater management organizations.

The survey included questions on permitting, registration, and reporting requirements for groundwater withdrawals, including the thresholds that trigger those requirements and the agencies responsible for oversight. Additional questions addressed groundwater withdrawal limits, exemptions, enforcement actions, and whether groundwater data is publicly accessible or shared across jurisdictions. Open-ended questions were also included to provide more detail on challenges related to groundwater governance, data management, coordination, staffing, and enforcement. Survey responses are summarized in the following section.

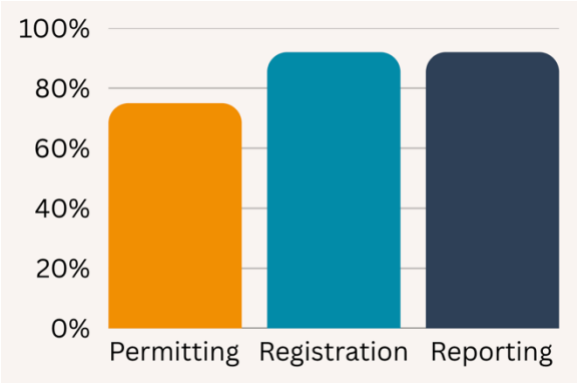


Figure 1. Overall Requirements Across Jurisdictions

SURVEY RESULTS

PERMITTING

Nine of the twelve jurisdictions (75%) indicated that permits are required, while the remaining jurisdictions rely on registration and reporting systems rather than formal permitting requirements. These responses suggest that while permitting is a common groundwater governance tool, jurisdictions differ in how permitting systems are structured and how they are integrated with other regulatory requirements.

Region 5 EPA Report: The report notes that groundwater withdrawals are often subject to multiple approval processes rather than a single permitting requirement.

Among jurisdictions that require permits, there is no consistent threshold used to determine when a permit is triggered. Some respondents use volumetric thresholds, including values around 100,000 gallons per day, while others use acre-feet per year. Several jurisdictions require permits for all non-domestic or beneficial uses regardless of volume, and in some cases permitting requirements depend on basin conditions or other regulatory factors rather than a single numeric threshold.

Oversight of permitting and groundwater regulation was reported as involving a state agency in all twelve jurisdictions (100%). Five jurisdictions (42%) also indicated that responsibility is shared across multiple agencies. Two jurisdictions (17%) included local or county government, and two (17%) included an interstate compact commission.

REGISTRATION

Registration requirements are more consistent than permitting, with eleven of the twelve jurisdictions (92%) requiring some form of well registration. In many cases, this involves submitting a well log or completion report when a well is drilled, which documents the location, depth, and construction of the well. This type of requirement is often applied broadly and is not always tied to how much water is withdrawn.

In some jurisdictions, registration applies to all wells regardless of withdrawal volume, while in others it is tied to specific thresholds or categories of use. Several respondents described systems where registration is required independently of permitting, while others link registration more closely to reporting or permit requirements. As a result, some jurisdictions require wells to be registered even when they are not subject to permitting requirements.

Registration is primarily used to track the existence of groundwater wells and provide basic information about how they are constructed. However, the conditions under which registration is required, and how it is integrated with permitting and reporting systems, differ across jurisdictions.

REPORTING

Eleven of the twelve jurisdictions (92%) indicated that groundwater withdrawal reporting is required. This suggests that reporting is one of the more consistent elements of groundwater governance across jurisdictions. However,

GWREF: 55% (27 of 49) of states reported sharing groundwater data with other agencies or user groups.

the conditions that trigger reporting still vary substantially depending on the jurisdiction and type of groundwater use.

Some respondents use fixed volumetric thresholds, including values around 100,000 gallons per day, while others require reporting for all permitted or non-domestic uses. In several cases, reporting is tied directly to permit conditions,

meaning that reporting requirements depend on the type of use or the terms of the permit. Other jurisdictions base reporting on the capacity of a well or system, requiring reporting if a well is capable of producing a certain amount of water, regardless of how much is actually withdrawn.

These differences mean that similar groundwater uses may be reported differently depending on the jurisdiction. While most respondents collect groundwater use data in some form, the variation in thresholds and reporting triggers affects how consistent that data is across jurisdictions.

ENFORCEMENT AND WITHDRAWAL LIMITS AND EXEMPTIONS

Responses indicate that enforcement varies across jurisdictions. Eight of the twelve jurisdictions (67%) reported having formal enforcement mechanisms, including warning notices, monetary penalties, permit suspension or revocation, and restrictions on future withdrawals. The remaining respondents indicated that enforcement is limited or not consistently applied, and several noted that there are minimal or no consequences for failing to report groundwater use.

Groundwater withdrawal limits are also not applied consistently. Five of the twelve jurisdictions (42%) reported that no formal limits are in place. Among those that do have limits, approaches include fixed pumping rates, permit-based restrictions, or case-by-case review depending on local conditions.

Exemptions are also common, particularly for domestic or private wells. Eight of the twelve jurisdictions (67%) reported that domestic wells are exempt from permitting or reporting requirements. Other respondents reported no exemptions or described exemptions based on use type or scale.

DATA ACCESS AND SHARING

Groundwater data is available in eleven of the twelve jurisdictions, but access varies. Seven of the twelve jurisdictions (58%) provide data through online databases, while four (33%) provide data upon request, and one (8%) do not make data publicly available. These responses show that while groundwater data is often collected, the level of public access is not consistent across jurisdictions.

Data sharing across jurisdictions also differs. Six jurisdictions (50%) reported sharing data regularly, while five (42%) indicated that data is shared on a case-by-case basis. One jurisdiction reported no formal data sharing. Respondents also described variation in how data is shared, including agency-specific systems, informal coordination, and partnerships with other agencies or organizations.

Several respondents described differences in database structure, reporting formats, and data organization, which may affect how easily groundwater data can be accessed, compared, or shared across jurisdictions.

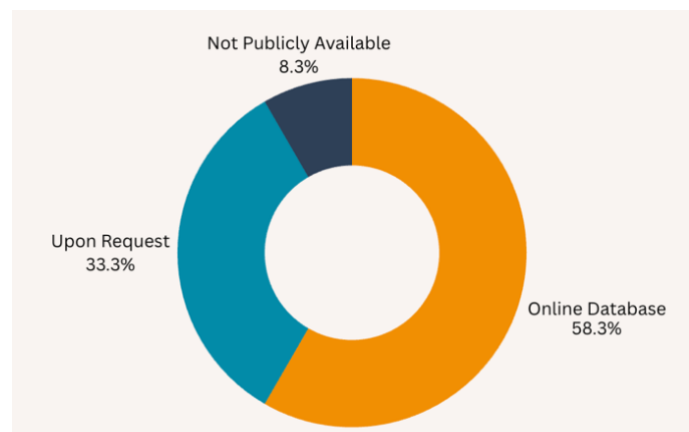


Figure 2. Public Access to Groundwater Data

REPORTED CHALLENGES

Respondents identified several challenges related to groundwater governance and data management. The most consistent theme across responses is issues with data systems, including differences in data formats, labeling, and organization. Several respondents also noted that incomplete or self-reported data can limit reliability, particularly where metering is not required.

Coordination across jurisdictions was another challenge raised by multiple respondents. These responses point to difficulties sharing data between agencies, including incompatible systems, lack of standardization, and uncertainty about what data is

available. In some cases, confidentiality or infrastructure concerns were also mentioned as barriers to data sharing.

Some respondents also mentioned staffing and funding constraints, which appear to affect both data management and enforcement, including the ability to

maintain reporting systems or follow up on noncompliance. A few respondents also pointed to broader issues related to groundwater use, including overuse and the need to better define sustainable withdrawal levels.

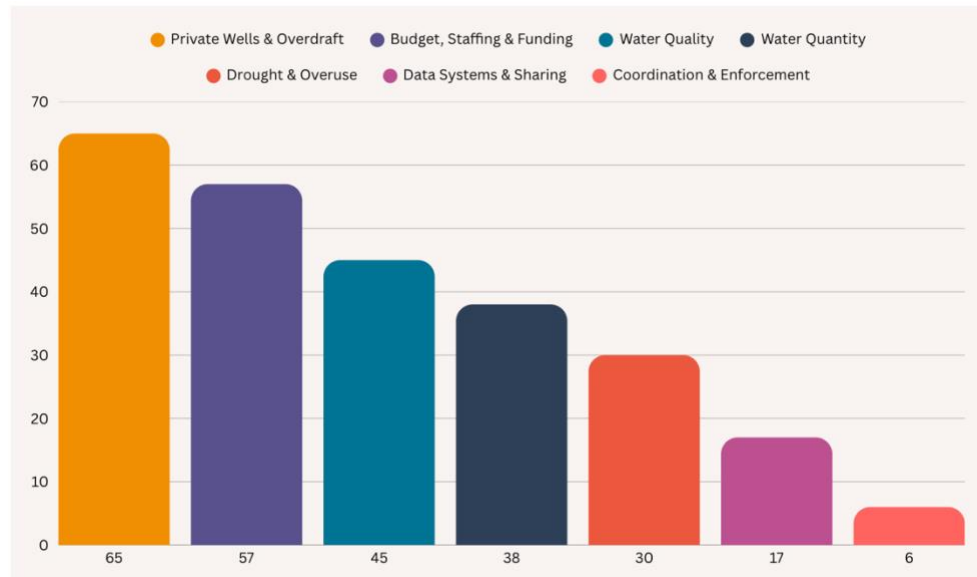


Figure 3. Reported Groundwater Governance and Data Challenges

FINDINGS FROM EXISTING REPORTS

Findings from Groundwater Governance in EPA Region 5 provide additional context for the survey results. The report describes groundwater governance as involving multiple agencies and levels of government, including state agencies, local entities, and interstate or regional organizations. It refers to this as “a complex network of actors and institutions,” rather than a single centralized system, and describes variation in governance structures across jurisdictions within the region.

Data availability and management are also a major focus of the Region 5 report. It describes differences in data systems across jurisdictions, including variation in format, organization, and accessibility, and identifies gaps in monitoring and hydrogeologic data in some areas. The report also discusses coordination across jurisdictions and describes differences in regulatory structures, data systems, and institutional responsibilities across agencies.

Findings from Groundwater Governance in the United States (GWREF) describe groundwater governance as decentralized and note variation in permitting systems, reporting requirements, and institutional responsibilities across states. The report also describes differences in how groundwater data is collected and managed across agencies, and notes challenges related to staffing, resources, and how programs are carried out. These findings align with patterns observed in the survey, particularly in areas related to variation in governance structures and differences in data systems across jurisdictions.

KEY FINDINGS

The survey responses and supporting reports identify several recurring patterns related to groundwater governance and data practices across jurisdictions.

- Groundwater withdrawal reporting is widely required, but the conditions that trigger reporting differ across jurisdictions, including differences in thresholds, capacity-based reporting, and whether reporting is tied to permitting.
- Groundwater data is collected across most jurisdictions, but data systems are not consistent. Differences in how data is collected, stored, and accessed make it difficult to compare or use data across jurisdictions.
- Data sharing and coordination across jurisdictions are uneven. Both survey responses and existing reports describe differences in data systems and challenges in sharing information between jurisdictions.
- Enforcement mechanisms are not applied consistently. While some jurisdictions have formal enforcement tools, others reported limited or inconsistent enforcement, particularly for reporting requirements.
- Exemptions, particularly for domestic wells, are common across jurisdictions. In the survey responses, these exemptions most often applied to permitting requirements, reporting requirements, or both, depending on the jurisdiction.

CONCLUSION

This report examined how groundwater governance and data practices are structured across jurisdictions using survey responses and supporting groundwater governance reports. The findings show that while many jurisdictions use similar governance tools, including permitting, registration, reporting, and enforcement mechanisms, these systems are implemented differently across jurisdictions. Differences in thresholds, exemptions, oversight structures, and reporting requirements indicate that groundwater governance in the United States is decentralized and not organized through a single consistent framework.

The survey responses and supporting reports also identified recurring differences in groundwater data management and accessibility. Although most jurisdictions collect groundwater data in some form, respondents described variation in reporting practices, data systems, public accessibility, and data-sharing approaches. Challenges related to coordination, standardization, staffing, and enforcement were also identified across multiple jurisdictions. Findings from existing groundwater governance reports reflect many of these same patterns, particularly regarding decentralized governance structures and uneven groundwater data systems.

Overall, the findings suggest that groundwater governance across jurisdictions is characterized less by uniform regulation and more by variation in how similar governance systems are structured and implemented. The following implications and next steps identify several areas where additional analysis and coordination may help improve understanding of groundwater governance and groundwater data practices across jurisdictions.

IMPLICATIONS

The survey responses and supporting reports suggest that differences in groundwater governance structures and groundwater data practices influence how groundwater information is managed, shared, and compared across jurisdictions. Variation in permitting requirements, reporting thresholds, data accessibility, and oversight structures creates differences in how groundwater data is collected and used, particularly where groundwater systems extend across political boundaries. The findings also indicate that differences in

coordination practices, staffing capacity, and regulatory structures influence how groundwater governance systems function in practice.

- Differences in reporting thresholds, reporting structures, and data organization limit groundwater data comparability and constrain collaboration across jurisdictions, particularly where groundwater systems are shared.
- Variation in data accessibility, database organization, and awareness of available datasets affects how groundwater information is identified, shared, and used across jurisdictions.
- Differences in governance structures and oversight responsibilities influence how groundwater management decisions are coordinated across jurisdictions.
- Exemptions and inconsistent reporting requirements affect the completeness of groundwater-use data.
- Staffing, funding, and coordination challenges influence implementation of groundwater governance and data management programs.

NEXT STEPS

Groundwater data is already collected by most jurisdictions, but differences in reporting thresholds, reporting units, reporting frequency, and database structure can make groundwater information difficult to compare across agencies and states. One potential next step would be for the Interstate Committee to incorporate a workshop at a future ICWP conference focused on developing recommendations for more consistent groundwater reporting practices across jurisdictions, involving the United States Geological Survey, state groundwater agencies, and regional groundwater organizations. These discussions could include recommended reporting schedules and standardized reporting fields such as withdrawal volume, well location, use category, reporting units, and metadata descriptions. Jurisdictions could continue operating under their existing groundwater governance systems while considering more consistent reporting structures that may improve groundwater data comparability across jurisdictions.

Future coordination efforts could also focus on improving accessibility of groundwater information that is already collected across jurisdictions. Several respondents noted uncertainty regarding what groundwater data is available, how it can be accessed, and which agencies maintain different datasets. Potential areas for discussion could include clarifying groundwater data-access pathways, improve awareness of publicly accessible groundwater information, and exploring whether coordination with the USGS or another leading groundwater-data entity could support more centralized access to existing groundwater information across agencies and jurisdictions. These efforts could help make groundwater information easier to identify, access, and compare across different reporting systems and database structures.

Research related to groundwater-withdrawal impacts may also help support future groundwater governance discussions across jurisdictions. Survey responses reflect substantial variation in groundwater reporting thresholds, including thresholds near 100,000 gallons per day (0.1 MGD), but it is not well defined at what scale groundwater withdrawals begin to produce measurable impacts beyond a localized area. Impacts such as interference between neighboring wells, changes in groundwater levels, or effects on connected surface waters may occur under certain conditions, but the scale at which these impacts become significant likely varies depending on aquifer characteristics, recharge conditions, well spacing, and groundwater use patterns. One potential next step would be for ICWP, USGS, state groundwater agencies, and groundwater researchers to evaluate existing studies and monitoring data to better understand how withdrawal magnitude relates to broader groundwater-system impacts under different hydrogeologic conditions. This could help identify whether commonly used reporting thresholds

correspond to meaningful differences in groundwater impacts and could support future discussions regarding reporting requirements, monitoring priorities, and interstate groundwater coordination.

Appendix A: Survey Responses

Appendix A provides a summary of survey responses used in this report. Responses were collected from state agencies, interstate commissions, and other groundwater management entities. The table below summarizes key information related to permitting, registration, reporting, and data practices.

Jurisdiction	Entity	Permit Required	Registration Required	Reporting Required	Key Thresholds	Data Access	Data Sharing
IL	State / Local	No (registration-based)	Yes	Yes	~100k gpd	Request	Case-by-case
WY	State Engineer's Office	Yes (all use)	Yes	Yes	Any beneficial use	Online	Case-by-case
OK	OK Water Resources Board	Yes (threshold)	Yes	Yes	~5 AF/year	Request	None
ND	State	Yes (threshold)	Yes	Yes	varies by use	Online	Regular
AL	State	Limited (public supply)	Yes	Yes	~100k gpd	Not public	Case-by-case
CO	State	Yes (all use w/ exceptions)	Yes	Yes	>15 gpm (some cases)	Online	Regular
MO	Geological Survey	No permit	Yes	Yes	~100k gpd capacity	Request	Case-by-case
SRBC (Susquehanna River Basin Commission)	Interstate Commission	Yes (threshold)	No	Yes	~100k gpd	Request	Regular
AR	Regional District	No permit	Yes	Yes	~50k gpd capacity	Online	Regular
NY	State	Yes (threshold)	Yes	Yes	~100k gpd	Online	Regular
KS	State	Yes (except domestic)	Yes	Yes	all non-domestic	Online	Regular
GA	State	Yes (threshold)	No	No	~100k gpd	Request	Case-by-case

Appendix B: Survey Questions

1. What state, tribal nation, interstate commission or local government do you represent? Does your jurisdiction require a permit for groundwater withdrawals?
2. If permits are required, what withdrawal amount triggers the permit requirement? Please include units (e.g., gallons/day, gallons/year, acre-feet/year). If not applicable, write N/A.
3. Does your jurisdiction require registration of groundwater wells or withdrawals?
4. If registration is required, what withdrawal amount triggers registration? If not applicable, write N/A.
5. Are groundwater users required to report groundwater withdrawals?
6. If reporting is required, what withdrawal amount triggers reporting requirements, if any? If not applicable, write N/A.
7. Which agency or entity oversees groundwater regulation in your jurisdiction?
8. Are groundwater withdrawals subject to defined limits or sustainability standards in your jurisdiction?
9. Are any sectors exempt from groundwater reporting requirements?
10. (10A)- What actions may occur if groundwater withdrawal reporting requirements are not met? (Select all that apply)
11. Is groundwater withdrawal data publicly accessible?
12. Does your jurisdiction share groundwater data with other states, tribal governments, interstate commissions, or federal agencies (e.g., USGS)?
13. What is the biggest challenge your jurisdiction faces in groundwater governance?
14. What do you see as the biggest challenges to data sharing across jurisdictions?
15. Is there anything else you would like to share about groundwater governance or data management in your jurisdiction?

Works Cited:

Freshwater Society, Water365, University of Minnesota, and Great Lakes Indian Fish and Wildlife Commission. (2024). *Groundwater governance in EPA Region 5*. U.S. Environmental Protection Agency Region 5.

Megdall, S. B., Vimont, E., Gerlak, A. K., & Petersen-Perlman, J. D. (2017). *State-level groundwater governance and management in the U.S.: Summary of survey results of groundwater quality strategies and practices*. Water Resources Research Center, University of Arizona.