

VICTORIA

Victorian
Auditor-General

Audit summary of Management of Victoria's Groundwater Resources

Tabled in Parliament
5 October 2010

Audit summary

Background

Groundwater is water that seeps from the surface into porous sands, silts and fractured rocks. Like the surface water in rivers, lakes and dams, it is a finite resource. When rain or snow falls on land some of it evaporates, gets absorbed by plants, flows into streams and rivers, and seeps into the soil. Surface water that seeps into underground spaces 'recharges' groundwater.

Groundwater is used as drinking water in more than 80 cities and towns, for crop irrigation, stock, dairy cleaning, and for domestic gardening and cleaning. Irrigators, domestic and stock users, and urban dwellers rely more on groundwater during drought.

Audit objective

This audit examined whether the use of groundwater resources is sustainable. Specifically, it examined whether water planners and managers use relevant and reliable information to manage the access to, and license the use of, groundwater. It also assessed the effectiveness of licence monitoring and enforcement activities.

Conclusions

The Department of Sustainability and Environment (DSE) and water corporations do not know whether groundwater use is sustainable. While a robust planning framework and planning tools have been developed, their effectiveness is undermined by inadequate groundwater data and monitoring, and delayed development and implementation of management tools.

Licensing, metering and compliance monitoring activities are not rigorous enough to assure DSE or water corporations about who extracts groundwater and how much they extract. There is also insufficient data about groundwater reserves and sustainable extraction rates.

Findings

Groundwater planning

The State Observation Bore Network (SOBN) is the main source of groundwater information, comprising around 2 500 groundwater bores. However, it cannot, by design, provide DSE or water corporations adequate information about groundwater stocks, extraction and recharge rates, or the interconnection between ground and surface water. Data gaps and the uncertainty about groundwater quality mean that DSE and water corporations cannot effectively monitor, plan and manage Victoria's groundwater resources.

DSE has recognised limitations with the SOBN. It has commenced a refurbishment program, replacing bores at, or near, the end of their useful life. The program also aims to improve bore network coverage in areas not currently or adequately monitored.

DSE's strategic planning is underpinned by a range of planning tools, including resource appraisals, management plans and rules and sustainable water strategies. Resource appraisals are providing DSE and water corporations with detailed information about groundwater to assist with sustainable management. However, management plans have not been developed and implemented for all extensively used aquifers as intended. This is in part due to what water corporations consider an unnecessarily slow and expensive process.

While other tools are in place to manage extractions, the absence of management plans increases the prospect of unsustainable use. Local management rules are in place for six groundwater management areas and one irrigation area. These rules are easier to implement than management plans, and there is greater opportunity for water corporations to use these more often and as an alternative to management plans.

Groundwater management

The sustainable use of groundwater depends on sound management practices. Given the increasing demand for this resource, management practices limiting access to, and extraction of, groundwater are vital. Effective monitoring is also needed, to assure that access and extraction conditions are met.

The licensing and metering regime for groundwater continues to evolve and improve, but there are several limitations around unlicensed users and bores. Uncertainty about the number of the unlicensed users and bores, and the inconsistency of metering practices, reduce the regime's effectiveness.

Metering groundwater extractions is crucial in managing sustainable groundwater use. It tells planners and managers how much water users are extracting and whether they are complying with the extraction limits of their licences. Despite progress in metering groundwater users, many remain unmetered, limiting the usefulness of metering as an important data source.

Meter readings are the main source of compliance activity. Without more robust compliance monitoring and enforcement activities, it is unlikely that non-compliance will be detected or deterred.

Recommendations

Number	Recommendation	Page
1.	The Department of Sustainability and Environment should: - reconcile its State Observation Bore Network program priorities with available resources to clarify whether refurbishment can occur in a reasonable time frame - update its sustainable water strategies to reflect the longer-term significance of groundwater and its sustainable management, incorporating climate change effects and the connections between ground and surface waters.	16
2.	Water corporations should develop and implement groundwater management plans, or apply local management rules, where appropriate, for all extensively used aquifers.	16
3.	The Department of Sustainability and Environment and water corporations should: - obtain up-to-date and reliable information on the number of groundwater bores, particularly for domestic and stock users - develop strategies to better understand domestic and stock groundwater use and manage its impact on groundwater systems.	22
4.	Water corporations should develop sound risk-based compliance monitoring to detect and deter non-compliance.	22
5.	Goulburn-Murray Water and Grampians Wimmera Mallee Water should develop sound enforcement frameworks to manage non-compliance.	22

Submissions and comments received

In addition to progressive engagement during the course of the audit, in accordance with section 16(3) of the *Audit Act 1994*, a copy of this report was provided to the Department of Sustainability and Environment, Goulburn-Murray Water, Southern Rural Water and Grampians Wimmera Mallee Water, with a request for submissions or comments.

Agency views have been considered in reaching our audit conclusions and are represented to the extent relevant and warranted in preparing this report. Their full section 16(3) submissions and comments, however, are included in Appendix A.
