Protecting groundwater resources of Western Australia to ensure safe drinking water supplies

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Austalian Drinking Water Guidelines

Western Australia's (WA) level of drinking water source protection is strongly influenced by its commitment to implement the Australian Drinking Water Guidelines (ADWG), most specifically the 'attachement to consumer' risk-based multiple barrier approach to protecting Public Drinking Water Source Areas (PDWSA). Barriers include catchment protection, water storage and treatment. The importance of maintaining multiple barriers can be seen here. The guidelines outline 12 elements as part of a framework for protecting PDWSA. Elements 2 and 3 are implemented by the Water Source Protection Branch at the Department of Water.

Element 2: Assessment of the drinking water supply system is implemented through the preparation of Drinking Water Source Protection Assessment (DWSPA) documents while Element 3: Preventative measures for drinking water quality management is directly addressed via the preparation of Drinking Water Source Protection Plans (DWSPF).

Groundwater in Western Australia

- Accounts for about three quarters of all water used.
- Make up 60% of Perth's drinking water supply.
- WA's largest bodies of groundwater are sedimentary basins covering 40% of the state.
- Perth's shallow land and lacustrine terrigenous sediments allow an easy path for contaminants to enter groundwater.
- As Perth's groundwater demand increases, so does the potential for groundwater contamination, which may present economic growth in WA.

Legislation

The two most important acts addressing groundwater PDWSA are the Metropolitan Water Supply Sewerage and Drainage Act 1960 (MWSD Act) and the Country Areas Water Supply Act 1979 (CAWS Act). Both acts of Water PDWSA are proclaimed under these acts, making the problems by land-use applicable to both public. Drinking water areas are proclaimed as underground pollution control areas (MWSD Act), or water reserves (CAWS Act).

Land-use Planning

Good land use planning is essential for the protection of groundwater and relies on a solid decision-making framework for future developments. State-wide planning policies ensure that planning schemes and strategies identify PDWSA as special control areas, thus ensuring their protection by shaping land-use decisions.

The Department’s water quality protection note – Land use compatibility in Public Drinking Water Source Areas guides land use planning decision makers on activities that are considered “acceptable”, “compatible with conditions” or “incompatible” within each of the priority areas (P1, P2 or P3) according to their level of water quality risk.

Protecting Public Drinking Water Source Areas

The Department of Water implements the ADWG with a state-wide program for protecting PDWSA.

Drinking Water Source Protection Assessments and Plans

Assessments provide an overview of a water source, its land uses and risks to water quality. They hold upon the assessment documents. They propose recommendations and strategies to address water quality risks, and are produced in consultation with the public.

Challenges

Climate Change

WA is expected to increase its population from about 2 million people by 2027 to approximately 2.8 million people by 2050. The Indian Ocean Climate Initiative predicts more hot days and less winter rainfall in the southern part of WA, where over 90% of the population resides. These trends point to further decreases in groundwater recharge and significant increases in water use for WA.

Water Law Reform

Due to the importance of water, a greater recognition is required for its economic, social and environmental value as well as finding ways to use it more efficiently and effectively. The WA Government is helping to achieve this through the proposed water law reforms. The reforms have recently been given greater urgency and direction with the signing of the National Water Initiative in April 2006. The water law reforms will provide stronger statutory powers for the protection of PDWSA, enabling between to carry out more sensitive, greater powers of enforcement against offenders and statutory plans, priority areas and protection zones.

A detailed explanation of all elements of drinking water source protection can be obtained on our website.