

The Great Artesian Basin: Sustainability or Profits

The Great Artesian Basin (GAB) is Australia's largest source of groundwater and is estimated to contain nearly 65 billion mega litres of water – enough water to fill Sydney harbour 130,000 times over (National Water Commission 2012). The GAB is a confined aquifer containing water deposited over millions of years and underlies more than 22% of the Australian mainland (National Water Commission 2012). The supply of water in the basin has been and is currently under threat from the agricultural and petroleum industries (Powell, Silcock & Fensham 2015; Great Artesian Basin Coordinating Committee (GABCC) 2015). The granting of gas exploration and production licences over areas of the basin has been carried out without due regard to the sustainability of the GAB (SoilFutures Consulting Pty Ltd 2014). These licences now cover 80% of the entire basin (SoilFutures Consulting Pty Ltd 2014). The GAB suffers from very low recharge rates and high recharge zones are few and far between – only 2.3% of the GAB has effective recharge of greater than 5 mm/year and only 0.2% has effective recharge of 30 - 79 mm/year (SoilFutures Consulting Pty Ltd 2014). Currently, 79% of the high recharge zones are covered by gas and petroleum exploration and production licences (SoilFutures Consulting Pty Ltd 2014). As a result of projects like these, head pressure in the basin has decreased significantly (Powell, Silcock & Fensham 2015). In order to address contemporary concerns, a sustainability program was created in 1999 (GABCC 2015). This program, named the Great Artesian Basin Sustainability Initiative (GABSI), is a partnership between the Australian and State governments as well as landholders (GABCC 2015). GABSI aims to repair uncontrolled artesian bores and replace open bore drains with piped systems (GABCC 2015). Despite state government cooperation with GABSI, petroleum exploration and production licences persist over much of the basin and over the majority of high recharge areas (SoilFutures Consulting Pty Ltd 2014; Chief Scientist and Engineer 2014). Something needs to change. Either the GABSI must extend its influence to the granting of petroleum licences, or there needs to be joint legislation by the states. The federal government currently has no power to legislate on groundwater usage or sustainability (Kildea and Williams 2010; Commonwealth of Australia Constitution Act 1900 s 51). If enough public pressure can be created, state governments may refer their power to a federal government initiative or, less likely, a referendum may allow federal jurisdiction over national water resources. The GAB, as a resource, is currently being used in an unsustainable manner with an estimated two-thirds of all water extracted being wasted (Powell, Silcock & Fensham 2015; GABCC 2015). It is important to remember that even seemingly limitless resources are indeed finite: a groundwater basin, present under Australia for millions of years and containing fresh water reserves 130,000 times the volume of Sydney harbour, has been significantly affected by a nation with irresponsible governments and a small population – all in the space of 200 years.

References

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Thomas Kavanagh, Brisbane, Queensland, Australia