People, Passion and Policy: Voluntary landholder participation in a successful catchment wide environmental flow program.

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Key Points

- The Flows for the Future Program is driven by water allocation planning and policy for the Eastern Mount Lofty Ranges and Marne Saunders catchments.
- Program staff engage with landholders to deliver environmental water, which supports consumptive use limits.
- Landholder participation is voluntary, presenting challenges for engagement and the achievement of program outcomes.
- Landholders present strong views and passion around land and water use, which program staff draw upon to build common interest in sustainable water use solutions.
- A multitude of stakeholders support the program in a range of capacities.

Abstract

The Flows for the Future Program is driven by policy detailed in the Eastern Mount Lofty Ranges (EMLR) and Marne Saunders Water Allocation Plans (Natural Resources SAMDB 2010, 2013). Collaboration with landholders is the key activity that enables the program to work towards meeting the environmental water requirements of the surface water resource whilst supporting consumptive use limits. Working together, environmental flows are reinstated resulting in improved catchment health.

Landholders are key stakeholders among the many who play a role in supporting the program to deliver environmental water. While low flow policy is the primary mechanism for delivery of environmental flows, landholder participation remains voluntary. This presents challenges for engagement and the delivery of outcomes. Program staff have so far worked with over 1070 landholders and stakeholder bodies, often visiting sites multiple times. Staff and landholders consider the state of the catchment, barriers to passing flows, and implementing solutions with the goal of ultimately sharing, learning, and improving catchment health.

Landholders present strong, passionate views around land and water use, which program staff draw upon to build common interest in sustainable water use solutions. Program staff and landholders have worked together to reinstate low flows at more than 420 sites.

Keywords

Catchment Health, Sustainable Water Use, People, Policy and Passion

Introduction

The presence of over 8,000 dams and watercourse diversions in the EMLR is negatively impacting ecological cycles and long term catchment health by intercepting surface water, especially environmentally critical early season flows.

The Flows for the Future Program (F4F), delivered by the Department for Environment and Water (DEW), works with landholders to restore environmentally important flows around farm dams and through watercourses across the EMLR Water Resource Area (Figure 1.). Driven by the EMLR and Marne Saunders Water Allocation Plans, policy plays a key role in guiding this work. Funding is provided by the Australian Government through the Murray Darling Basin Plan (MDBP) to deliver flow outcomes to the lower Murray River.

The EMLR is the furthest downstream sub catchment in the Murray Darling Basin that feeds into the Murray River. The program is driven by policy and Sustainable Diversion Limit Adjustment Mechanism targets for flow outcomes into the Murray River, while at the same time providing outcomes for local catchments, in the form of stream connectivity, improved ecological health and opportunity for restoration of riparian habitat.

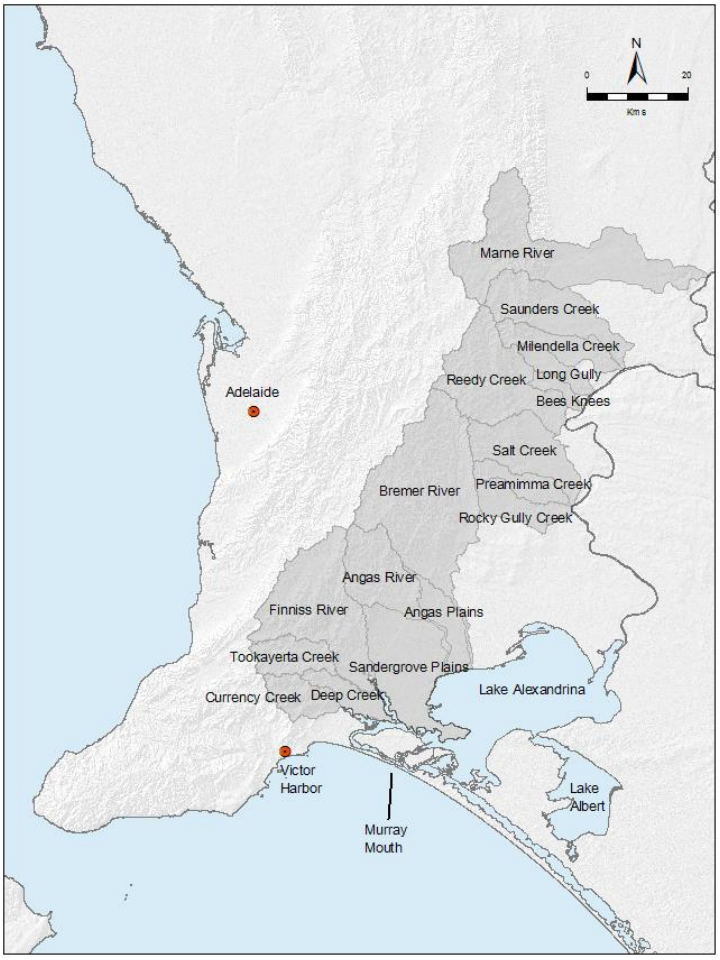

Figure 1. The Eastern Mount Lofty Ranges catchment area

Achieving sustainable water use

While policy sets the framework for the implementation of low flows, supported by strategic catchment scale modelling to determine the most efficient way to meet flow targets, it is the landholders embracing the opportunity to contribute to ecosystem health who lead the way. Notably, this is one of the only programs in Australia (and likely the world) which is working with landholders in an entirely voluntary capacity to restore low flows to achieve connectivity in catchments.

The program has a range of stakeholders who play a critical role in monitoring and evaluating program outcomes. Program staff collaborate with regional Landscape Board staff and community members to actively monitor the catchment for change as a result of the delivery of environmental flows. This includes vegetation surveys in riparian zones, fish surveys, macroinvertebrate surveys and water quality sampling. Many participating

landholders allow property access for staff to conduct surveys, monitoring the effect of restoring low flows on downstream vegetation. This purpose of these surveys is to demonstrate that:

- the devices pass the intended flow rate;
- that flow regimes are improved with an increase in low flows;
- that restored flow regimes induce positive change to ecosystems; and
- that this collaborative effort between the program and landholders helps to improve community-wide awareness of the importance of low flows and a willingness for flows to be passed in perpetuity.

Other important stakeholders include government bodies such as SA Water, Local Government, non- government organisations such as Second Nature Conservancy, industry based groups like Livestock SA and construction contractors.

Despite the investment of many stakeholders, due to the voluntary nature of the program, achieving improved catchment health lies with the many landholders we work with. Once a landholder opts to participate, they are required to sign a Management Agreement, committing the landholder to the maintenance of the low flow device and the passing of low flows in perpetuity. The device is noted on the Certificate of Title ensuring the commitment continues regardless of any change in land ownership.

Anecdotal evidence suggests landholder's are concerned about declining catchment health, further demonstrated by the number of landholders who take up the offer of a fully funded and installed gravity low flow bypass device. At the direction of program staff, hydrological contractors carry out the construction works involving access to the property with heavy machinery and equipment to install the device.

Voluntary participation brings a range of challenges for staff but despite this, over 420 low flow solutions have so far been implemented in the EMLR (Figure 2.). To achieve this outcome, staff have engaged with over 1070 landholders, striving to form respectful relationships, share knowledge and find common passion in the land.

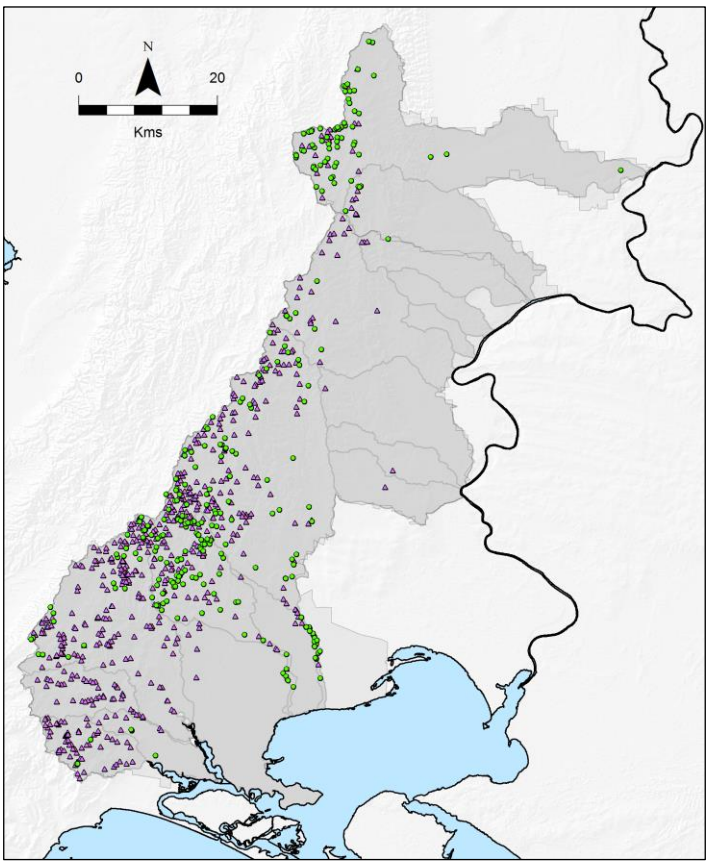

Figure 2. Dams with maximum flow outcome potential (purple), and of those, dams that are now passing low flows (green).

Landholder engagement is complex and can take anywhere from two weeks to six years to reach an outcome. In a typical scenario, staff will cold-call a landholder, embarking on a process which involves property visits, listening, education and collaboration. During this time, staff will familiarise themselves with the property and develop a plan, proposing the most suitable option for passing low-flows, based on the characteristics of the site. This involves negotiation with the landholder, sharing of information, catchment mapping, site surveys and construction planning.

No two engagement scenarios are the same. Every landholder has a different story, land and water use, history and experience. The engagement approach and messaging is adapted and catered to the characteristics of the catchment and commonalities amongst different landholder demographics (Figure 3.).

Figure 3. The demographic of landholders is diverse, including primary producers (vegetables, beef, dairy, wine), intergenerational farmers, hobby farmers and those simply seeking the rural lifestyle.

There are often key influencing factors leading to a positive/negative landholder response. Awareness of these factors enables staff to work with landholders to discuss issues and find solutions. For example, in the drier Marne Saunders catchment water security is a concern due to the timing and duration of flows. In some years, the majority of flows will be low flows over a longer period of time. In such situations program staff will ground truth the flow modelling and discuss water requirements and usage with landholders.

Other key influencing factors in participation include;

- understanding of water allocation planning, policy and links with the program;
- opportunity for the fully funded installation of a low flow device;
- noting of the low flow device on the Certificate of Title;
- perceived impacts (positive or negative) on property value;
- businesses who are in pursuit of sustainability branding;
- dam safety (the ability to pass more water if required);
- previous experience with government initiatives;
- opposition to being told what to do by the government;
- water security issues;
- dairy farmers, among other commercial enterprises, who rely heavily on water use for operations;
- accepting program changes, for example treatment options; and;
- opportunity for a dam removal with increased flow outcomes.

Influences of a more personal nature also play into engagement. For example, multigenerational farmers who have grown up in an area and remember swimming in the creeks as children often have a desire to see restored catchment health resulting in a positive response. Conversely, landholders with an environmental focus who have invested in land management for conservation outcomes or landholders who want to preserve the aesthetics of their dam can question perceived or real impacts of passing environmental flows on the vision for their property.

There are also logistical considerations when determining the most suitable option for passing flows at a site. For example, the degree of slope, proximity to other dams or properties, remnant vegetation, Aboriginal artefacts, presence of erosion or weeds, the location of adjacent vines, homestead gardens, and existing infrastructure.

The preferred option for restoring flows is a gravity low flow device largely due to its in-flow driven ability to mimic nature, the passive nature of the device, the minimal visual impact on the landscape and its low maintenance requirements (Figure 4). However, specific sites are unsuitable for gravity device installation and tailored solutions are needed to ensure as many barriers to flow are treated as possible.

Figure 4. The preferred delivery option is a gravity low flow device (top), used in a typical a catchment setting (below).

Manual siphon release systems are being increasingly used when the preferred gravity option is unachievable. This system relies on the landholder turning the siphon on and off according to actual on ground conditions. A schedule indicative of 30 years of data is provided as a guide. While this option doesn't offer the same assurity in terms of mimicking the timing and volume of flows it still provides critical environmental flow returns.

Dam removal is another option and in cases where landholders are in a position to remove a dam, the program has been able to achieve the most environmentally preferable outcome, returning all flows and re-defining of the natural watercourse. Many landholders however rely on water use for commercial or stock and domestic purposes and are unable to give up their entire water source.

The engagement process takes landholders on a journey where they may have never heard of the program to an end point of agreeing to participate in the delivery of environmental flows. Staff often draw upon landholder passion to highlight the connection between a healthy catchment and its role in sustaining a healthy landscape and, in many cases, a business.

Sharing passion for the land and rural enterprise helps to bridge gaps in understanding, build rapport and achieve environmental outcomes. While this is obvious to those of us who work in the environment sector, making these

connections is still vitally important in community engagement (Figure 5.). We build trust and embrace the interests and concerns of landholders to ultimately strive for sustainable water use for both the landholder and the environment.

Figure 5. Landholders from Dairy Creek, Tungkillo, have a passion for sustainability and restoring catchment health "We are caretakers of the land, it is imperative that we minimise our footprint and create opportunities for the next generation by leaving the land in better condition".

It is common for personal connections to come into play when working in a small community such as the EMLR. Many staff are well-connected and invested in the community in a personal capacity. These connections have been invaluable in building trust and a willingness in the community to be open-minded to the program. Discussions are often had on the sidelines at footy, on the tennis court or in the local store.

The level of landholder commitment to restoring catchment health is testament to a growing awareness and concern in the community around environmental issues in general. While working with landholders to restore catchment health, staff often provide advice on a range of other land management issues including weed management, erosion control, revegetation, feral animal control and more. Information is shared and landholders are often referred to expert bodies for specific advice. The educational value of the program is enormous and while for a range of reasons not all landholders can participate in passing flows, the outcomes and awareness building opportunities in program engagement are invaluable.

Conclusions

Due to its innovative nature, there are constant learnings from which the program continues to evolve. While the program is ultimately working to improve catchment health, the relationship-building and educational benefits for staff and landholders are immeasurable. The program endeavors to integrate years of landholder learnings with policy and research to implement solutions to the worldwide issue of increasing water resource demand and declining catchment health.

Acknowledgments

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Landholders in the Eastern Mount Lofty Ranges

Hills and Fleurieu Landscape Board

Northern and Yorke Landscape Board

Murraylands and Riverland Landscape Board

Second Nature Conservancy

Numerous contractors who are employed to construct the devices

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