

## **The Victorian Riparian Works Review Program**

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### **Key Points**

- The Victorian Riparian Works Review program was developed to provide a consistent, statewide approach to review the condition of riparian works and engage landholders about the riparian works.
- Each year since 2019/20, catchment management authorities (CMAs) inspect all new riparian works sites at pre- and post-works intervals and a subset of riparian work sites at three- and eight-years post-works; they record data about the site, threats to riparian land, the riparian management activity undertaken, landholder compliance, site response, and landholder satisfaction.
- Statewide results from 2021/22 of 260 sites indicated that most sites are responding as expected to the riparian management activities, landholders are meeting their obligations in riparian management agreements, and most landholders believe the riparian works improved the condition of their frontage and would recommend undertaking similar works with the CMA to another landholder.
- The Riparian Works Review program has proved beneficial in understanding the success of approaches to riparian works delivery, works maintenance and landholder engagement, as well as areas for improvement.
- Multi-year analysis of data is anticipated to further build the value of the Riparian Works Review program.

### **Abstract**

There is substantial investment of public funds in riparian protection and improvement projects on freehold and Crown land in Victoria. These projects involve CMAs working collaboratively with landholders to undertake riparian works.

The Riparian Works Review (RWR) program was developed by the Department of Energy, Environment and Climate Action (DEECA) with CMAs to provide a consistent, statewide approach to review the condition of riparian works and engage landholders about the riparian works.

Annually CMAs inspect riparian works and survey landholders at all new riparian works sites and a subset of riparian works sites post-works. CMAs report the data to DEECA for collation and reporting at a statewide level.

The RWR provides information about:

- the site and its threats,
- the types of riparian works delivered and by whom,
- the site response to the riparian works,
- whether management obligations in riparian management agreements are fulfilled by landholders, and
- landholder's satisfaction about the engagement and support by CMAs.

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The RWR enables regional and state managers to communicate riparian management successes to their communities, collaborators, and investors. The information gathered supports reporting and accountability and demonstrates whether investment of public funds has achieved its aims and is protected long-term. It also supports refinement of CMA project management processes and approaches to landholder engagement.

The RWR program commenced in 2019; the long-term dataset is growing. Here we report key findings of the statewide results for 2021/22. Although the RWR program is undertaken in Victoria, the lessons learnt are transferrable beyond jurisdictional boundaries.

## **Keywords**

Riparian, riparian works, landholder, engagement, standards, monitoring, evaluation, improvement

## **Introduction**

There is substantial investment of public funds in riparian protection and improvement projects on freehold and Crown land in Victoria as part of the Victorian Government's Waterway Management Program. These projects involve CMAs working collaboratively with landholders to undertake riparian works such as fencing, weed control, revegetation, and installing infrastructure to provide off-stream water for livestock. These works are then secured via landholder agreements appropriate to the tenure type (i.e., riparian management agreements on freehold and Crown land, with the addition of riparian management licences on Crown land).

It is important to protect the investment in riparian works in the long-term to ensure ongoing benefits to waterway values and because the riparian works are funded by public funds. To achieve this, Roberts et al., (2017) recommended that existing and future riparian work sites on Crown and private riparian land have follow-up inspection by their CMA to ensure that the site is being managed according to obligations in landholder agreements. This approach is consistent with current Victorian Government policy:

*Waterway managers will maintain long-term contact with landholders who have agreements, including site visits as appropriate. Maintaining long-term relationships with landholders will help to ensure that the sites are being managed and works are being maintained according to the obligations in riparian management agreements.*

Policy 9.7, *Victorian Waterway Management Strategy* (DEPI, 2013)

Subsequently, the RWR program was developed by DEECA with CMAs to provide a consistent, statewide approach to review the condition of riparian works and engage landholders about the riparian works. The *Riparian Works Review Standards* (DELWP, 2021a) underpin the RWR and provide obligatory standards for reviewing the condition of riparian works, surveying landholders about the riparian works, and reporting the data collected. Each year CMAs inspect riparian works and survey landholders at all new riparian works sites and an agreed subset of riparian works sites at three- and eight- years post-works. CMAs report the data to DEECA for collation and reporting at a statewide level.

The RWR enables regional and state managers to communicate riparian management successes to their communities, collaborators, and investors. The information gathered supports reporting and accountability to government and demonstrates whether investment of public funds has achieved its aims and is protected long-term. It also supports refinement of CMA project planning and implementation processes and approaches to landholder engagement.

The RWR program commenced statewide in 2019/20 financial year; the long-term data set is growing. While a multi-year analysis of the data has not yet been completed, here we report key findings of the statewide results for 2021/22 and discuss the program's successes and insights for potentially improving riparian works delivery, works maintenance, landholder engagement, and the RWR program itself. Although the RWR program is undertaken in Victoria, the lessons learnt are transferable and far-reaching, well-beyond jurisdictional boundaries.

## **Approach**

A broad overview of the annual RWR process is outlined in Figure 1 and aligns with the *Riparian Works Review Standards* (DELWP, 2021a). This approach was followed when implementing the RWR in 2021/22.

Broadly, CMAs firstly select sites to assess as part of the RWR program. Sites selected are where riparian works were undertaken collaboratively by CMAs and landholders/land managers (including committee of management and government agencies), are on freehold and/or Crown land, and are governed by riparian management agreements. This includes pre-RWR projects up to eight years old and new projects.

Riparian works within the scope of the RWR include:

- structural works (e.g., fencing and off-stream stock watering infrastructure)
- environmental works (e.g., revegetation, weed management, pest animal control), and
- works relating to management practices (e.g., controlled grazing).

The sites selected represent one of four assessment intervals:

- pre-works (baseline assessment),
- within one year of completion of works (preferably soon after completion),
- three years after completion of works, and
- eight years after completion of works.

All new riparian work sites are assessed pre-works and after completion of works because these are key stages to establish baseline condition for future assessments. A subset of riparian work sites (a minimum of 15 random sites or all sites if less than 15 sites) are selected by each CMA for the Year 3 and Year 8 post-works assessment intervals. All sites assessed in the Year 3 assessment interval are assessed in the Year 8 assessment interval wherever possible.

CMA staff then visit the sites to assess the condition of the riparian works and meet with or call landholders to survey them about the riparian works. They collect data about the site and landholder, threats to riparian land, the riparian management activity undertaken, compliance, site response to interventions, and landholder satisfaction.

All aspects of the proposed structure of the RWR presented at 9ASM by Gwyther et al. (2018) are included in the current *Riparian Works Review Standards* (DELWP, 2021a) except for questions about site trajectory which were changed to being optional questions when a revision of the *Riparian Works Review Standards* (DELWP 2019) occurred following its first year of implementation in 2019/20. DEECA and CMAs decided to replace site trajectory questions with site response questions because the intended purpose of the site trajectory questions significantly overlapped with the purpose of other Victorian riparian monitoring projects. However, some CMAs saw value in the site trajectory questions so, rather than removing them, they became optional.

CMAs record and manage the data collected according to the *Data Management Plan Riparian Works Review Standards* (DELWP, 2021b) and *Riparian Works Review Standards Data entry template 2021* (DELWP, 2021c). CMAs submit the data to DEECA. DEECA combines CMA data into a statewide dataset, analyses the data, and prepares an annual summary report. Findings are shared with representatives from each CMA and successes and areas for improvement are discussed. Outcomes can be communicated with landholders, communities, collaborators, and investors, and lead to refinement of riparian works delivery, works maintenance, landholder engagement, and/or the RWR program itself. The annual summary reports to date have been internal documents with the intention to aggregate and assess multiple years of data and publish the findings in the future.

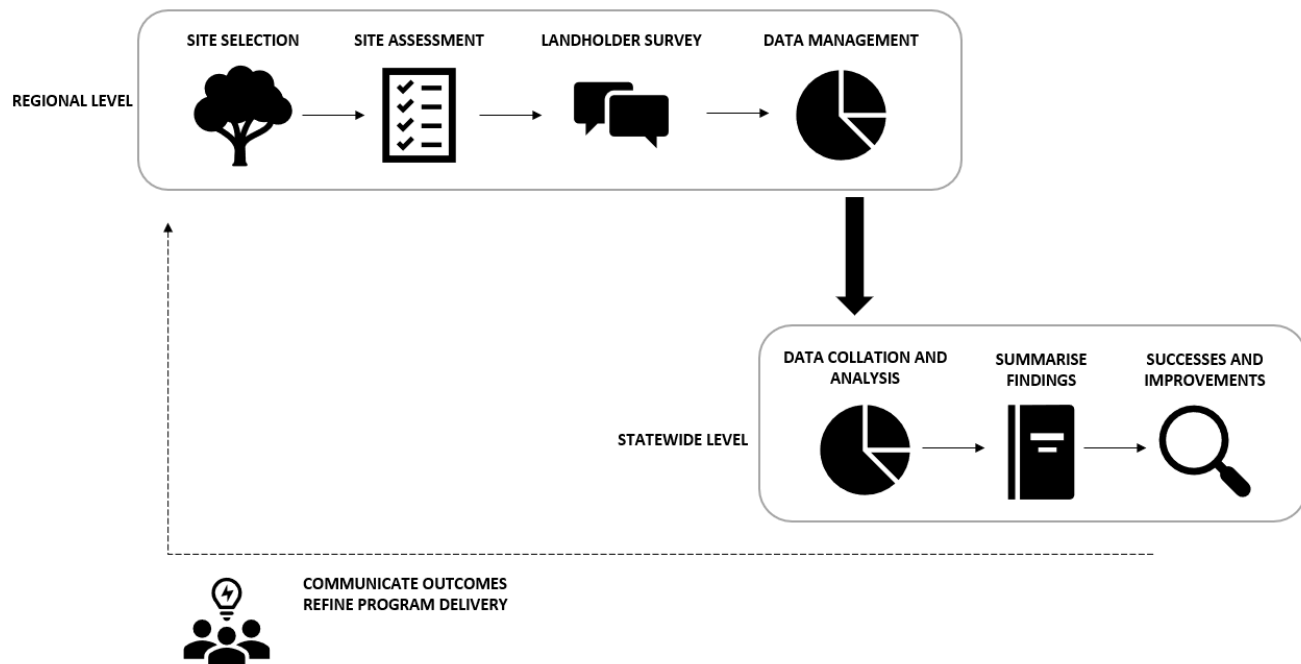


Figure 1 - Overview of the annual Riparian Works Review process.

### Summary of findings of the riparian works review in 2021/22

The key findings of the RWR in 2021/22 (DEECA Waterway Health, 2024) were:

- A total of 260 sites were assessed across Victoria.
- Fifty-nine percent of sites were freehold and the majority of landholders were full-time farmers (67%) or part-time farmers (22%).
- Main motivations by landholders for undertaking riparian management works were to improve or protect the environment, improve stock management and to address erosion.
- The most common riparian management activity undertaken at sites was vegetation establishment (70%), closely followed by fence construction (67%).
- Water storage installation, fence construction, non-woody weed control and woody weed control (other than willows) were most often delivered by landholders. CMAs more often delivered willow control and vegetation establishment.
- Fencing continued to remain in place and functioning at 89% and 79% of sites three- and eight-years post works respectively. Off-stream watering infrastructure was in place and functioning at 100% of sites in Year 3 and at 83% of sites in Year 8.
- The average level of threat to site values from livestock grazing, pest animals and high threat weeds reduced upon works completion. The average level of threat from pest animals and high threat weeds then increases at the Year 3 assessment interval, whereas average threat from livestock grazing remains consistent. At the Year 8 assessment interval, the threat level from high threat weeds remains consistent whilst the threat level from pest animals and livestock grazing slightly declines.
- Revegetation survival rate and native vegetation recruitment were as expected or better at 67% and 78% of sites post-works (Years 3 and 8) respectively. Expectations were based on expert opinion by the CMA staff member reviewing the site considering on site and regional contexts, e.g. revegetation survival and

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native vegetation recruitment would be expected to be higher in high rainfall sites compared to drier regions of the state.

- Overall, 67% of sites post-works (Years 3 and 8) were responding to management interventions as expected or better.
- Ninety-three percent of landholders believe the riparian works have improved the condition of their frontage.
- There were high levels of compliance with riparian management agreements at all sites for stock access management (83% of sites fully compliant), pest animal control (98% fully compliant) and revegetation management and survival (78% of sites fully compliant). Fifty-six percent of sites were fully compliant with riparian management agreements for weed control.
- Seventy-one percent of landholders thought they were able to keep up with their management obligations outlined in riparian management agreements. Time was the main obstacle reported by landholders in trying to meet their management obligations.
- Eighty-three percent of sites that included Crown land were fully compliant with riparian management licence conditions regarding Crown land being free of inappropriate materials. Sixty-eight percent of all sites were fully compliant with riparian management licence conditions regarding providing public access to Crown water frontage. Compliance with riparian management licence conditions regarding Crown land being free of inappropriate materials and providing public access to Crown water frontage improved from Pre-works to Year 3 assessment intervals, but then declined at Year 8.
- Most landholders were very satisfied or satisfied with:
  - Project outcomes (to date) (83%).
  - Technical advice / support from CMAs (88%).
  - Project administration (96%), funding (100%), CMA works coordination (87%), and CMA communication (100%) at sites at the works completed assessment interval.
  - Overall project delivery (86%).
  - Follow-up contact from the CMA after the completion of works (81%).
- Ninety-five percent of landholders would recommend undertaking similar works with the CMA to another landholder.

The key findings highlight many successes relating to the approaches to riparian works delivery, works maintenance and landholder engagement. Many types of riparian works undertaken are being maintained and are still functioning eight years post works. Most sites are responding as expected to the riparian interventions. Landholders are happy with the delivery of riparian works, believe their frontage has subsequently improved in condition, and would recommend undertaking similar riparian works with the CMA to another landholder.

One area for improvement is landholder's compliance with weed management obligations. Fifty-six percent of sites in Years 3 and 8 were fully compliant with weed management obligations in the riparian management agreement. CMA suggestions for why weed compliance was lower are:

- Differences in CMA and landholder understanding and expectation for weed control.
- Poor landholder knowledge of weeds: a landholder may not be aware of what plant is a weed.

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- Differences in what weeds are listed for control in the riparian management agreement. If a new and emerging weed is not listed in the riparian management agreement, the landholder is not obliged to manage it.
- Variation in how CMA officers approach weed management. For example, variation in what weeds the CMA officer thinks are priority and what weeds are listed for control in riparian management agreements.
- Differences in how CMA officers assess weed management compliance. For example, if a small patch of blackberry is found, one CMA officer may interpret that as 'Somewhat compliant' whereas another CMA officer may score as 'Yes: full compliance.'

Ideas for improving compliance with weed management obligations could potentially include education and awareness activities to improve landholder knowledge and identification of weeds, clearer communication about weed management expectations and delivery standards, training of CMA staff about assessing compliance with weed management obligations to ensure consistency in approach, and consideration about which weeds are listed in riparian management agreements.

Another area for improvement is providing public access to Crown water frontage. Sixty-eight percent of sites met the riparian management licence condition that requires landholders provide access to Crown land via gates (present, unlocked and openable) or stiles (present and functional). Public access to Crown land being obstructed is often reported by recreational users (particularly anglers) to the Government. The percentage of sites with Crown land being adequately accessible (stile, gate or no fence) is likely lower than reported due to CMA interpretation of accessibility in site assessments. Engagement initiatives to remind landholders of their obligations to maintain public access to Crown water frontages and a targeted enforcement program could be implemented with penalties for non-compliant landholders.

A few recommendations to improve the RWR program were also identified from the 2021/22 results, including providing more detailed instructions for some questions and their scoring in the *Riparian Works Review Standards* (DELWP, 2021a), and improving the ease of use of the *Riparian Works Review Standards Data entry template 2021* (DELWP, 2021c). Such changes would clarify aspects of the data being collected.

## **Conclusions**

2021/22 represented the third year of implementing the RWR program. Statewide results from 2021/22 indicated that most sites are responding as expected to the riparian management activities (expectations based on expert opinion by the CMA staff member reviewing the site considering site and regional contexts), landholders are meeting their obligations in riparian management agreements, and most landholders believe the riparian works improved the condition of their frontage and would recommend undertaking similar works with the CMA to another landholder. Minor changes to the *Riparian Works Review Standards* (DELWP, 2021a) and *Riparian Works Review Standards Data entry template 2021* (DELWP, 2021c) were suggested to improve the RWR program itself.

The RWR program has proved beneficial in understanding the success of approaches to riparian works delivery, works maintenance and landholder engagement, as well as areas for improvement. The results demonstrate that investment of public funds into riparian works is achieving intended aims and is being protected long-term. In the future, more extensive, multi-year data analysis is expected to identify longer-term trends and further build the RWR program's value.

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underpin its success. Their contributions are worthy of co-authorship to this paper. The Riparian Works Review program is funded through the Victorian Government's Environmental Contribution Levy.

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