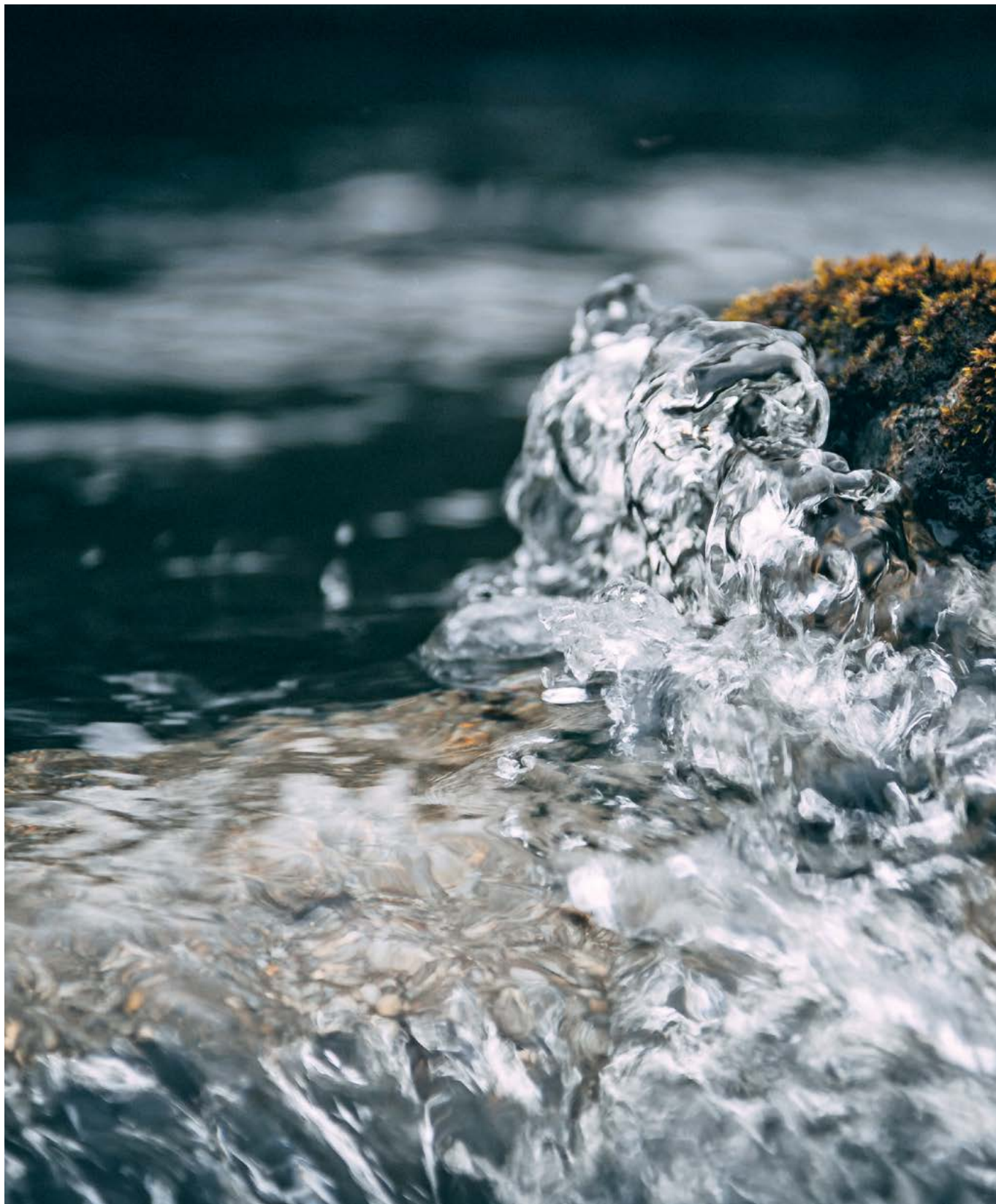


King and Yolande

Sustainability Review

**Outcomes and Commitments Report -
June 2021**



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1. Introduction

The King and Yolande hydropower schemes (comprised of John Butters and Upper and Lower Lake Margaret power stations) provide a highly valued and reliable source of electricity. The total installed capacity of the hydropower schemes is 154.6 MW and the average annual generation is almost 600 gigawatt hours, which is 6.4 per cent of the total hydropower system in Tasmania. Construction of the King and Yolande hydropower schemes has resulted in the creation of Lake Burbury (King scheme) and Lake Margaret (Yolande scheme). These storages have resulted in alterations to the natural flow of downstream rivers and streams.

This report documents the findings, outcomes and commitments of the King-Yolande Sustainability Review.

1.1 Background

Sustainability is a core value for Hydro Tasmania, underpinned by a commitment to create a sustainable future. Being sustainable involves the application of economic, environmental, social and governance considerations to business decisions and activities.

We believe that these considerations will help drive long-term business success and allow successive generations to enjoy the benefits of a clean energy future. Our Sustainability Code and Environmental Policy are available on Hydro Tasmania's website at www.hydro.com.au.

Our commitment to support and collaborate with our customers and the community is captured in Hydro Tasmania's [Recreation Principles](#). These principles provide direction to facilitate recreation on our land and waterways for the benefit of all.



Lake Margaret woodstave pipeline

1.2 Hydro Tasmania's Water Management Review Program

Our Water Management Review program was initiated in 1999. It aims to review water and land management activities across the six major hydropower catchments in Tasmania.

Part of sustainable management is making sure that the land and water resources we manage are available for all to use for years to come. As such, the review is undertaken in consultation with a broad range of stakeholders and considers impacts on environmental, social and economic conditions within the catchments.

Once a catchment has been assessed, a series of actions are identified and evaluated to determine which ones would most improve management of the resource and deliver the greatest benefit most efficiently. We make commitments to the community about specific actions that lead to improved outcomes for environmental and social values in the catchment.



Lake Margaret tramway

In 2013 our approach to catchment reviews changed from ‘Water Management Review’ to ‘Sustainability Review’. This approach is intended to align Hydro Tasmania with the International Hydropower Association’s (IHA) Hydropower Sustainability Assessment Protocol (HSAP) and the current known environmental and social status of the catchments as the basis for the sustainability review. The approach to identifying issues and opportunities provided by the protocol delivers consistency and clarity amongst hydropower projects world-wide.

The IHA Environmental, Social and Governance (ESG) Gap Analysis Tool (www.hydrosustainability.org/esg-tool) was used during Stage 1 of the Sustainability Review, to assess Hydro Tasmania’s current sustainability practises in the King and Yolande catchments.

2.0 The King-Yolande Sustainability Review Stages

The King - Yolande Sustainability Review is the fifth catchment review we've undertaken. The review is focused on the King and Yolande catchments, which encompass four key waterways: Lake Burbury, the King River, Lake Margaret and the Yolande River, on the west coast of Tasmania. The review is an opportunity for us to assess our current land and water management, and, in consultation with stakeholders, identify areas where improvements to sustainable management practices can be implemented.

The sustainability review was completed in four stages:

1. Information review
2. Stakeholder consultation
3. Technical and social studies
4. Outcomes and commitments.

This report summarises the sustainability review process, as well as the outcomes and commitments that we have made to improve the sustainability of our operations in the King and Yolande catchments.

2.1 Stage 1 - Information Review

Stage 1 of the review commenced in 2019 and focused on collecting, summarising, and publishing consolidated information on operational, social and environmental (including water quality) aspects of the King and Yolande hydropower schemes.

The IHA's ESG Gap Analysis Tool was used to assess the hydropower schemes to identify where there are opportunities for improvement and where the schemes are performing well in the social and environmental space.

Stage 1 was completed in September 2019 and culminated in the public release of the Information Review summary report and a number of fact sheets, which can be found on our [website](#).



Upper Lake Margaret Power Station from above



Community consultation

2.2 Stage 2 – Stakeholder Consultation

Community and stakeholder consultation was initiated via an information session for the general public in Queenstown in September 2019, followed by discussions with key stakeholders including the West Coast Council, the Inland Fisheries Service (IFS), and the Tasmanian Salmonid Growers Association. During these conversations, stakeholders and the general community were invited to complete a consultation survey, which was also promoted on our website and social media pages, by the West Coast Community Services Hub, and on 7XS Queenstown radio.

The aim of the consultation survey was to gain a greater understanding of community values and concerns relating to the waterways within the King and Yolande catchments, and areas where opportunities for improvement might exist (that would be possible under our operations).

Direct stakeholder engagement was supported by more general engagement opportunities associated with our Community Program, local staff, school outreach programs, and participation in community-based committees.

Stage 2 was completed in February 2020 and a summary of the outcomes can be found on our [website](#).

2.3 Stage 3 – Technical and Social Studies

We conducted three technical studies to investigate key issues raised in Stages 1 and 2. These studies included:

- Lake Burbury short-tailed rain crayfish (*Ombrastacoides parvicaudatus*) survey
- Assessment of legacy metal loads entering Lake Burbury via Linda and Idaho Creeks
- Weeds survey and management.

A summary of the context, aims, outcomes and commitments for each study, together with other areas of investigation (including social), is provided in Section 3 of this report.

2.4 Stage 4 – Outcomes and Commitments

Informed by an understanding of stakeholder issues and the outcomes from the technical studies and social investigations, commitments to improve the management of environmental, social, and cultural heritage values and issues have been identified in Section 3 of this report.

3.0 Outcomes and Commitments

We have been actively working to address issues raised and a number of outcomes have been achieved. We remain committed to strengthening our community involvement in the King-Yolande region. The key contexts, aims, outcomes and commitments are summarised below under the main themes of the review including: community engagement and involvement, recreational access, biodiversity, water quality, weed management and Aboriginal and historic heritage.

3.1 Community Engagement and Involvement

Context:

Engagement and involvement of stakeholders in planning and decision making regarding any potential recreational, social and environmental impacts of our operations is important to us and paramount to achieving sustainable outcomes. Consistent community feedback indicated that a lack of accessibility for local residents to the Upper Lake Margaret Power Station and village was a concern. The heritage-listed power station and village are only accessible to the public on an organised tour, as the power station is an operational asset and significant public safety hazards exist in the village. Public tours began in 2012 as part of a joint project driven by the regional tourism body and collaboration with the local council, to overcome access constraints and to support tourism on the West Coast.

Aim:

We aim to undertake inclusive and transparent stakeholder engagement regarding the sustainable management of the King and Yolande catchments, and all of their assets. We also aim to provide opportunities for access to the Upper Lake Margaret Power Station and village for all.

Outcomes:

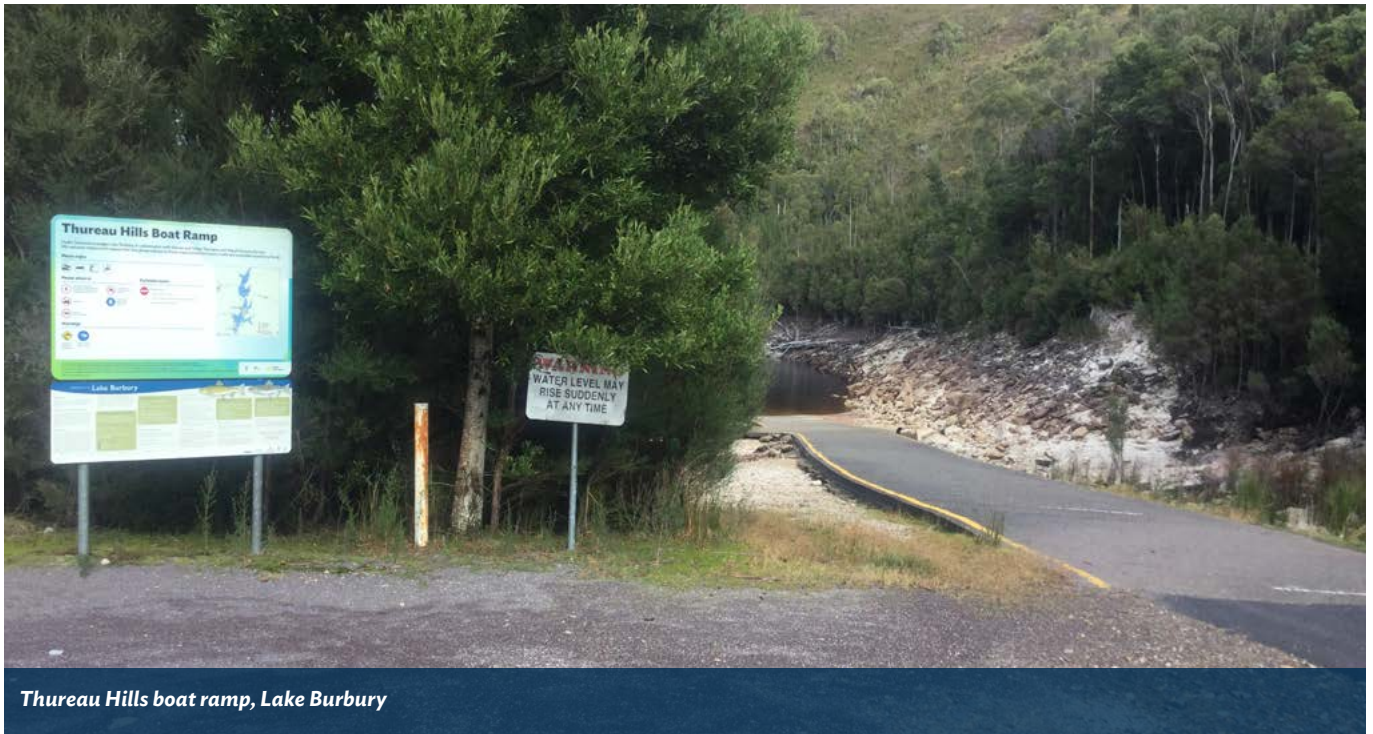
- Maintained engagement and involvement with catchment communities (Queenstown and Gormanston) through activities such as our Community Grants process, local community events and initiatives such as *The Unconformity*, power station open days, resident employees and our education outreach program.
- Community feedback directly influenced the identification of priority investigations undertaken in Stage 3 of the review. This included the weed management study (see section 3.5) and investigation into collaborative opportunities at the Harris Reward Trail with Sustainable Timbers Tasmania (STT), Mineral Resources Tasmania (MRT) and RoamWild (see section 3.2).
- We have an agreement with RoamWild to subsidise tours by 80 per cent to Lake Margaret village specifically for local residents for 2021 or until the subsidy value is expended.

A [community engagement fact sheet](#) is available on our [website](#).

Commitment:

We are committed to the establishment, strengthening and maintenance of stakeholder relationships, and to transparent communication of operations and impacts in the King and Yolande catchments. We will continue to engage with stakeholders to identify opportunities to work together.

Ongoing access to the Upper Lake Margaret Power Station and village will be provided for via RoamWild tours. There are also opportunities for the broader public to visit the site during special events such as *The Unconformity* festival and routine power station open days.



Thureau Hills boat ramp, Lake Burbury

3.2 Recreational Access

Context:

Recreation and tourism are increasingly important for the local West Coast economy. The consultation survey identified that access to land and waterways for recreation was a key area of interest for both communities and stakeholders. Lake Burbury was ranked as the highest valued waterway, followed by both King River and Lake Margaret, then the Yolande River. We collaborate with Marine and Safety Tasmania (MAST) and IFS to manage three boat ramps on Lake Burbury: the Lake Burbury boat ramp on the eastern shore, and the Thureau Hills and Darwin Dam boat ramps on the western shore.

Community feedback also identified access and safety concerns regarding the Harris Reward Trail. Complexities at the site include changes in land ownership along the trail, competing management interests and legacy mining impacts which have created safety hazards adjacent the trail in some sections (mine shafts).

Aim:

To allow and support appropriate and safe recreational access to boat ramps and associated infrastructure in the King and Yolande catchments.

Outcomes:

We have embarked on a process to assess our recreational sites against an internal Public Safety Management Standard and where appropriate, improve amenities to enhance the visitor experience, facilitate recreation and

improve safety. Specific recreation outcomes achieved during the sustainability review have included:

- Upgrades to the Thureau Hills boat ramp and walkway completed in 2020 in collaboration with MAST
- Upgrades to the Darwin Dam boat ramp, road, campground and day-use area undertaken in 2020 in collaboration with MAST
- Upgrading of signage at key sites, including entrance to Lake Margaret and Lake Burbury boat ramps.

We have been looking into collaboration opportunities with STT, MRT and RoamWild to develop a way forward to manage visitor safety at the Harris Reward Trail. Improvements in safety signage at the trail head have also been achieved.

A [community engagement and recreation](#) is available on our website.

Commitment:

We will continue to work with the community to address recreational opportunities and potential risks at our recreational sites in the King and Yolande catchments. Recreational facilities (including signage) will be maintained and improved where required. Recreational use information on sites suitable for public use is available on our [website](#).

We will continue to work closely with IFS, MAST and the Parks and Wildlife Service (PWS), and collaborate with other stakeholders to ensure safe, responsible, and enjoyable recreation in our catchments.

3.3 Biodiversity

Context:

The maintenance of catchment biodiversity is important to the sustainable management of the King and Yolande hydropower schemes and is both a regulatory and a broad stakeholder expectation.

The review identified the need to undertake routine river health monitoring in our catchments to assess trends in the health of our rivers, over the long-term. We routinely monitor the health of our rivers as part of our River Baseline Monitoring Program. The program assesses bugs that live in the river, which provide a good indication of river health and water quality. River health monitoring for West Coast sites was last undertaken between the late 1990s and 2012.

The information review also identified the need to verify the status of the short-tailed rain crayfish (*Omrastacoides parvicaudatus*) which is listed as critically endangered on the International Union for Conservation of Nature's Red List of Threatened Species. It is not currently state or nationally listed as a threatened species, however historic records exist for the King River valley. Flooding of Lake Burbury in the early 1990s resulted in some impact to its known habitat. The status of the species has remained unknown since this time and was presumed by some to be extinct.

Aim:

To determine the current status of river health in the King and Yolande catchments and to verify the status of the short-tailed rain crayfish.

Outcomes:

While some parts of the King and Yolande catchments have suffered significant historical environmental impairment, there is strong evidence that this impairment has stabilised and that many areas remain in good condition.

- River health monitoring found that the King River site was impaired, however, this was consistent with previous records for this site. River health in the King River typically improves further downstream as inflows from Newell and other creeks occur. The Eldon River and Yolande River sites were found to be consistently near natural condition. The Yolande River site, another reference site was better than reference condition. Results from the 2019–20 program were consistent with historic records and trends in river health across our West Coast catchments.
- Surveys for the short-tailed rain crayfish recorded the species from two sites in steep, rocky creeks flowing off Mt Lyell. Six individuals were found in total, including one egg-carrying female, which indicates the population is able to support itself through reproduction. Whilst we have confirmed the species is not extinct it appears its range is very limited. Species occurrences were recorded well above lake operating levels, thus our current



Searching for short-tailed rain crayfish near Lake Burbury



Short-tailed rain crayfish

operations will not affect the species. Suitable habitat for the short-tailed rain crayfish was also identified in some inflowing creeks to Lake Burbury, near previous records.

A [biodiversity fact sheet](#) is available on our website.

Commitments:

We commit to continuing to implement river health monitoring in West Coast catchments. Where results are outside of the expected range and cannot be readily accounted for by climate and operations, further investigation will typically be undertaken to identify reasons for change and appropriate management actions.

We have committed to undertake further surveys in suitable habitat for the short-tailed rain crayfish in May 2021 to work out how far and wide the species is found and comment on its population status.

3.4 Water Quality

Context:

The King and Yolande catchments are in an area with known mining legacy (historic mine sites) and water quality issues, as well as an area with important recreational and environmental values. Key concerns identified in community feedback included:

- Water quality in Lake Burbury
- Maintenance of a sustainable recreational fishery
- Downstream water quality in the King River (including Macquarie Harbour).

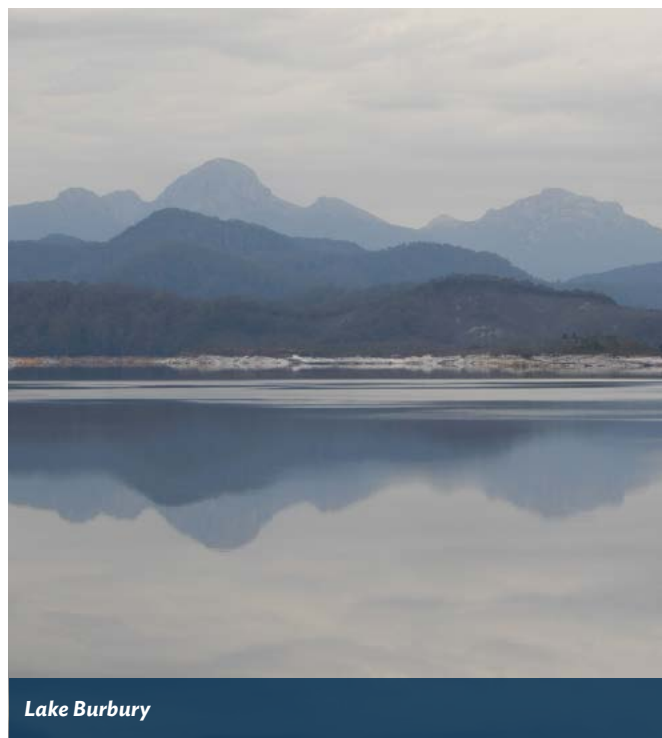
Information on water quality in lakes Margaret and Burbury is captured on a rotational basis in line with our Lake Monitoring Strategy. Water quality data had not been collected in either lake since 2012 and the potential impact of current metal loads running off Mt Lyell into Lake Burbury, via Idaho and Linda creeks, was also not well understood.

Aim:

To improve our understanding of long-term water quality trends in lakes Burbury and Margaret and the impact of runoff from legacy mining activities. This data will allow for the assessment and reporting on possible management options to maintain or improve water quality in the area. Good water quality supports the maintenance of a sustainable recreational fishery and fulfils community expectations.

Outcomes:

- Water quality at lakes Burbury and Margaret has remained consistent over time and recent data was within historic data ranges. Lake waters were clear, with high amounts of oxygen, low nutrients and slightly acidic pH.
- Results from a stream flow and water quality monitoring site on Idaho Creek showed that whilst Idaho and Linda creeks continue to deliver metals (mainly copper and zinc) from the Mt Lyell mine site into Lake Burbury, concentrations have significantly decreased over time. Therefore, risks associated with current mine discharge to the lake from Idaho and Linda Creeks appear to be low.



- Copper concentrations at Crotty Dam remain lower than the local guideline limit for consumption of fish and are within historic ranges. The nature of the water chemistry in Lake Burbury reduces the uptake of metals into the environment (i.e. organisms) and supports levels acceptable for the maintenance of a safe and sustainable fishery.

A [water quality fact sheet](#) is available on our website.

Commitment:

We will maintain ongoing water quality monitoring in West Coast lakes in line with our rotational Lake Monitoring Strategy and will review our lake monitoring needs and work with stakeholders (with a focus on metals) in response to any major changes in industry within these catchments.

3.5 Weed Management

Context:

The King-Yolande consultation survey identified that weed management was a key area of interest for the community. Weed management is both a regulatory and a broad stakeholder expectation. We undertake weed management on the land we own and manage as part of our Weed Management Program and contribute to implementing the West Coast Weed Management Group's Weed Strategy 2018-2023 (the Weed Strategy). Keeping up to date with priority weed locations and collaboration opportunities is key to effective weed management.

Aim:

To manage priority weeds throughout the King and Yolande catchments in accordance with the Weed Strategy. This involves regularly updating weed data and mapping, treatment requirements and collaboration opportunities.

Outcomes:

The Weed Management Program identified that current weed management was having a positive effect in reducing weed coverage and known populations, although continued vigilance remains necessary. Areas of focus included:

- Lake Burbury
- Lynchford
- Mt Jukes Road
- John Butters Power Station
- Darwin and Crotty Dams
- Lake Margaret.

Collaboration opportunities with the Department of State Growth, West Coast Council and PWS in the above areas have been identified.

A mix of declared and environmental weeds were targeted including: qorse, English broom, Californian thistle, spear thistle, Spanish heath, great mullein, twiggie mullein, pampas grass, Himalayan honeysuckle and European blackberry.

Revised weed location and weed treatment mapping has been incorporated into our spatial data management systems and provided to relevant government agencies to update records

A [biodiversity fact sheet](#) is available on our website.



Golden Everlasting, Mount Jukes Road

Commitment:

We will continue to collaborate with the West Coast Weed Management Group and other stakeholders to implement the Weed Strategy and to understand and support regional weed priorities and programs.

We will ensure that declared weeds of national significance are prioritised on Hydro Tasmania land as a regulatory requirement.

We will continue to work with contractors to explore the feasibility of managing weeds in inaccessible areas using specialised drones and other new technologies.



Lake Margaret village. Photo courtesy of Tom Stegink

3.6 Aboriginal and Historic Heritage

Context:

Cultural heritage, both Aboriginal and historic, is an area of stakeholder concern. It is also an area of regulatory responsibility. Lake Margaret is listed on the Tasmanian Heritage Register and therefore must be protected. The submerged Crotty smelter site at Lake Burbury also has significant heritage value. Community feedback was obtained regarding site access, safety and interpretation. During low water levels in Lake Burbury, the remains of the Crotty smelter are exposed. Some aspects of historic heritage in the area, such as the Crotty smelter, are at risk of damage from the public and also pose some public safety risks.

Aim:

To review the current understanding and interpretation of Aboriginal and historic heritage values in the King and Yolande catchments, and to ensure these values are managed in a way that minimises potential risks to these sites from our operations, and to the public.

Outcomes:

- Maintenance of Aboriginal and historic heritage was implemented consistent with regulatory responsibilities. The Crotty smelter site is identified as an area with high heritage values in our internal Cultural Heritage Inventory and is managed accordingly. Lake Margaret is listed on the Tasmanian Heritage Register and a Conservation Management Plan is in place.

- Vehicular access via the old road to the North Mt Lyell Smelter that was submerged under the lake when Crotty Dam was built, has been prohibited from the Crotty smelter site and a rock barrier and signage erected to advise visitors of the closure to conserve the cultural heritage values of the area and ensure public safety.
- Signage was erected at the entrance to Lake Margaret advising of the site's closure to the public (see section 3.1 for site access arrangements). The site continues to be accessible via commercial tours which were originally set up 2012 as part of a joint project with the West Coast Council and regional tourism body.

Commitment:

We are committed to the responsible management of Aboriginal and historic heritage in our areas of operation including the King and Yolande catchments. This includes ongoing commitments to heritage sites through implementation of our Cultural Heritage Management Procedure and the objectives of our Cultural Heritage Program.

Interpretation of heritage values at our sites will be addressed as part of broader visitor experience and cultural heritage programs. We will support community groups to work with us to develop appropriate interpretation of heritage sites.

We will provide a program of community access to Lake Margaret (see section 3.1 on page 8).

Through the Cultural Heritage Program we commit to continue to develop and maintain relationships with Aboriginal communities to improve the coordination of heritage management on our land.

4.0 Conclusion

The King-Yolande Sustainability Review has provided us with insight into community values and areas of concern in the catchments. Increased stakeholder awareness, collaboration, and cooperation in addressing key issues in the King-Yolande catchments has also occurred.

The process has documented outcomes and improvements in land and water management within the catchments. No significant gaps were identified by the application of the ESG Gap Analysis Tool, used to identify gaps in sustainable hydropower operations around the world.

Our program of commitments will ensure ongoing collaboration with stakeholders, the implementation of planned actions, the protection of water quality and river health, cultural heritage, and the improvement of weed management in the King and Yolande catchments.

We will continue to strive to ensure the sustainable management of water resources for the benefit of all Tasmanians.

5.0 Acknowledgements

Hydro Tasmania would like to thank all stakeholders and community members who have contributed to the King-Yolande Sustainability Review

Thanks to the many Hydro Tasmania and Entura personnel and consultants who have contributed to the work undertaken.

For More Information

All documentation and resources produced from the King-Yolande Sustainability Review are available online at **www.hydro.com.au**.

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