



Review of the Research Program

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REVIEW OF THE RESEARCH PROGRAM
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The Water Corporation is undertaking a major trial of forest thinning in an effort to increase water yields into the Wungong Reservoir to try to offset the effects of a drying climate and catchment management practices, and the consequent reduced inflows. The trial is expected to have additional environmental benefits (eg more mature trees; improved aquatic environments) and may also result in improved timber yields and quality. However there are risks to biodiversity, water quality, soil protection, forest structure and disease spread associated with thinning that need to be understood and managed.

As part of the trial the Corporation has supported 20 research projects in the areas of water, land and biodiversity. Through reports and published commitments it has also undertaken to develop a series of Key Performance Indicators (KPIs) to assess its performance in these areas during the thinning trial.

This report summarises how the 20 research projects contribute to meeting the KPIs and identifies gaps in the program. It also provides advice on reporting to the Conservation Commission of Western Australia, Environmental Protection Authority and the Board of the Water Corporation.

Detailed recommendations can be found in Section 9. However in summary it is suggested that additional KPIs be made in the areas of millable timber yields (or another economic measure of woody biomass production) and the social acceptability and cost effectiveness of thinning. Consideration should also be given to developing a KPI on overstorey composition (as there is for understorey). It is also recommended that there be a fourth grouping of KPIs entitled "Socio-economic". All KPIs need to be fully defined with the Technical Reference Group with several KPIs needing to be based on those in the Forest Management Plan 2004 – 2013.

The field operations program could be converted into a research project so that KPIs for the safe handling of herbicides, the efficacy of herbicide treatment and soil protection are also covered by the research program. Currently these KPIs are addressed through operational programs. This new project may also assist meet those for the achievement of retained basal areas and level of damage in retained stems. If new KPIs are developed for millable timber / woody biomass and the social acceptability and cost effectiveness of thinning then these will also require definition.

A constraint in all projects is the ability to examine thinning and other management practices in stream and reservoir buffers. In a drying climate these areas are now drier and any impacts of treating upslope areas may be offset by a dense stream or reservoir buffer which is usually prescribed for protecting water quality. If the thinning trial were to be extended into the buffers permission would be required from the Conservation Commission and the Water Source Protection Branch within the Department of Water. Additional measurements of the impacts on stream water quality may also be required as well as on in-stream biodiversity.

Summary details are provided for all 20 projects along with the trial KPIs, FMP and EPA recommendations they help to meet. From this analysis it was found that a number were weakly aligned at present (fungi biodiversity; hydrological processes; prescribed fire and stream quantity and quality; monitoring the effect of wildfire on water, vegetation and biodiversity; and the monitoring cockatoo, avifauna and ground vertebrates projects. To include some/more measurements in both the thinned and unthinned treatments would be required to improve several of these projects (not the wildfire one however). The information provided for the review is not detailed for some projects and some may also be out-of-date. Therefore the lack of alignment may not be as bad as appears to be the case. It is hoped that collating this project data together will prove to be a useful communication initiative.

A number of projects are measuring similar components or using related methods but have little or no evidence of data and expertise sharing. Meetings of groups involved in remote sensing, hydrological modelling, leaf area index work and systems modelling are recommended to improve the linkages.

There are annual information sharing seminars to report these projects but given that there are 20 to cover in one day there is often insufficient time to assimilate the overall results. It is therefore suggested that a half day workshop be added to provide an opportunity for synthesis between result areas, and also between researchers and managers. This workshop would be smaller in size than the full day of presentations.

Finally, while no report is required to be made to the EPA it is recommended that a program of informal briefings be established and maintained in case a formal assessment is required in future. Reporting to the Conservation Commission needs to address the Forest Management Plan (FMP) KPIs identified for each project and emphasise the likely consequences of “doing nothing different” in a drying climate on aquatic ecosystems. Information prepared for the submission to thin the 31 Mile Brook Catchment may assist in this regard. If an alignment is made between the Wungong and FMP KPI definitions then reporting will be relatively straightforward.

The report to the Board of the Water Corporation requires a detailed business case to be made of costs and likely benefits over time and most projects are not assembling these data in a systematic way. The proposed new project to meet the KPI on the cost efficacy of thinning could be aligned to help meet this requirement.

The full CSIRO review can be found at:

http://www.watercorporation.com.au/_files/Review_of_%20Research_Program.pdf