

Derwent

Water Management Review

Community Consultation Report



Hydro Tasmania
the renewable energy business

Derwent Community Consultation Report

EXECUTIVE SUMMARY

This document reports on the community consultation stage of Hydro Tasmania's Water Management Review (WMR) for the Derwent catchment. The aim of this review is to develop a program for environmentally sustainable water management for Hydro Tasmania operations.

The WMR is a multi-year Hydro Tasmania project involving four stages – information review, community consultation, technical studies and program development. The first catchment review undertaken was in the South Esk – Great Lake catchment, between 1999 and 2003, which resulted in a program of Hydro Tasmania commitments for nine key waterways (www.hydro.com.au/environment/waterreviews/environment).

The Derwent operations for hydro-electricity generation are complex, involving 10 power stations and 20 storages, and are well described in the Environmental Review document produced in the information review stage of the WMR (www.hydro.com.au/environment/waterreviews/environment). The community consultation stage for the Derwent WMR, reported on in this document, involved communicating with stakeholder groups and the community to identify concerns regarding Hydro Tasmania water management practices.

For the Derwent WMR, Hydro Tasmania sent out an initial mail-out in August 2003 to 618 stakeholders who were identified through a wide-ranging search. Advertisements in local and regional newspapers were also placed during July 2003 to invite the participation of stakeholders. A total of 224 respondents returned the initial mail-out and 191 copies of the Environmental Review document were distributed to stakeholders that responded. This document provides stakeholders and any interested parties with information on Hydro Tasmania activities in the Derwent catchment, and known environmental issues related to these activities. In September 2003, the 224 stakeholders who indicated an interest were sent a follow-up mail-out with a written issues survey and of these, 97 returned the survey. Stakeholders were also contacted by telephone to offer further discussion of issues and the option of a site visit. The site visits took place in January 2004.

The responses to Hydro Tasmania's issues survey for the Derwent WMR were primarily from anglers and landowners, with some responses from stakeholders with an environmental, recreational or management interest. Respondents who were anglers raised concerns mostly for the highland lakes, generally relating to water levels and fluctuations, water quality, environmental flows, issues affecting quality of the trout fishery and amenity issues such as vehicle and boat access, camping facilities and navigational hazards. Landowners who responded were concentrated around the Ouse River and the lower Derwent system and raised concerns primarily in relation to water allocation, water level and flow management, water quality, erosion and weeds. Other concerns raised by respondents who were not anglers or landowners were focussed on a number of ecosystem health issues, catchment management issues and Aboriginal heritage.

These concerns were largely waterway-specific, and are described on a waterway-by-waterway basis in this report. This enabled the formulation of a number of technical studies to undertake in the third stage of the WMR.

Eleven technical studies are proposed by Hydro Tasmania in response to the issues raised. These studies are:

- Shannon Lagoon Habitat Improvement Assessment;
- Recreational Management and Planning Assessment;
- Derwent above Meadowbank Riparian, Flood Study and Frog Survey;
- Derwent below Meadowbank Instream Processes Study;
- Ouse River Environmental and Water Use Assessment;
- Pest Fish Management Study;
- Water Level Communication Process Review;

- Fish Migration and Mitigation Study;
- Lake Management for Multiple Use Assessment;
- Lake St Clair Environmental Review; and
- Lagoon of Islands Study.

The technical studies will be commenced in July 2004, and the aim of each study is to identify potential options to address issues the issues under investigation. Additional, more targeted, consultation will be undertaken as part of these studies to better understand issues, management objectives and available options.

The WMR process has been made consistent with protocols for Water Management Plans (WMPs) as allowed for under the *Water Management Act* 1999. The Department of Primary Industries, Water and Environment (DPIWE) endorsed this process at the outset, and have been consulted throughout. Consistency with water management planning protocols means that DPIWE can readily incorporate information from this review into any WMPs that are prepared in the future.

The draft of this report, along with the proposed technical studies, was discussed with key stakeholders and the final report is publicly available. Stakeholders will be informed of progress on technical studies through periodic newsletters, field days and specific stakeholder meetings, and the final outcomes will be disseminated to all stakeholders towards the end of the WMR. Feedback will be sought and welcomed at all stages.

Hydro Tasmania sees communication with stakeholders as ongoing throughout the WMR process and does not wish to draw a line after which no further issues can be raised. All information derived through consultation to date or additional information that arises subsequent to release of this report will be made available to the researchers undertaking the technical studies stage of Hydro Tasmania's Derwent WMR.

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1 INTRODUCTION

1.1 THE PURPOSE OF THIS DOCUMENT

Hydro Tasmania is currently undertaking a review of its water management practices on a catchment-by-catchment basis. This project is referred to as Hydro Tasmania's Water Management Review (WMR) project. The process is designed to be consistent with the Department of Primary Industries, Water and Environment (DPIWE) protocols for water management planning, so that outcomes of this WMR may be readily incorporated into a broader DPIWE Water Management Plan (WMP). This project will result in the development of programs for environmentally sustainable water management in each of Hydro Tasmania's major catchment groups. Hydro Tasmania's South Esk – Great Lake WMR was completed in 2003, and the Derwent catchment is the second to be reviewed under this project.

This document reports on the community consultation phase of Hydro Tasmania's WMR for the Derwent catchment. The Derwent catchment area covered by this WMR is shown on the map in Figure 1.

1.2 PROCESS FOR HYDRO TASMANIA'S WATER MANAGEMENT REVIEWS

The WMR for the Derwent catchment is a multi-year project, and follows a standard process developed by Hydro Tasmania to undertake WMRs. The project comprises four main stages as follows:

1. **Information Review** – This stage has been completed and was carried out by gathering background information and documenting known issues in the catchment. The outcome of this stage is a document titled *Environmental Review: Derwent Hydro Catchment*, which served as a starting point for the stakeholder consultation process.
2. **Community Consultation** – This stage involved consultation with the community and stakeholder groups to identify concerns and agree on important issues related to Hydro Tasmania water management in the study area. Outcomes from this stage are summarised in this document.
3. **Technical Studies** – The technical studies will research the identified issues and examine the feasibility of different options for their management. The proposed studies to be conducted during this stage are summarised in this document and final reports will be made available at the conclusion of the studies.
4. **Program Development** – The consolidation and program development will draw together the outcomes from the technical studies, consider the options available and propose an Aquatic Environment Management Program, including measures to improve the sustainability of Hydro Tasmania's operations in the Derwent catchment. This program will be open to public review and feedback. Ultimately DPIWE may incorporate Hydro Tasmania's Aquatic Environment Management Program into WMP(s) for the waterways considered in this review.

DPIWE have endorsed the WMR process outlined, and are consulted and briefed throughout all stages of the review.

1.3 METHOD FOR COMMUNITY CONSULTATION STAGE

This document reports on the process and outcomes of Stage 2 – Community Consultation. The primary components of the consultation process (and where they are summarised in this report) are as follows:

- Stakeholder identification (Section 2.1);
- Advertising the WMR and *Environmental Review: Derwent Hydro Catchment* (Section 2.2);
- Initial mail-out (Section 2.3);

- Distribution of the *Environmental Review: Derwent Hydro Catchment* (Section 2.4);
- Issues survey (Section 2.5);
- Telephone follow-up consultation (Section 2.7); and
- Site visit follow-up consultation (Section 2.8).

The primary objective of the consultation process was to identify the range of issues, and to obtain a general indication of the level of community concern there is for each issue. Quantitative information was not the main focus of the consultation. The consultation methods allowed for a large amount of flexibility so that the information from the stakeholders could be provided through telephone discussions and personal contact as well as by filling out survey forms. Because of the nature of the information obtained from the consultation, the method for interpreting the results was therefore mostly qualitative.

1.4 STRUCTURE OF THIS DOCUMENT

In this introductory section of the report, the purpose of this document has been outlined, the overall process and the method used in the consultation process are described, and the structure of the document is summarised.

In the following section of this report (Section 2), the consultation process and level of response is summarised and the issues survey results are reported in Section 3. In Section 4, the proposed technical studies are outlined, and in Section 5, the following stages of the WMR are described.

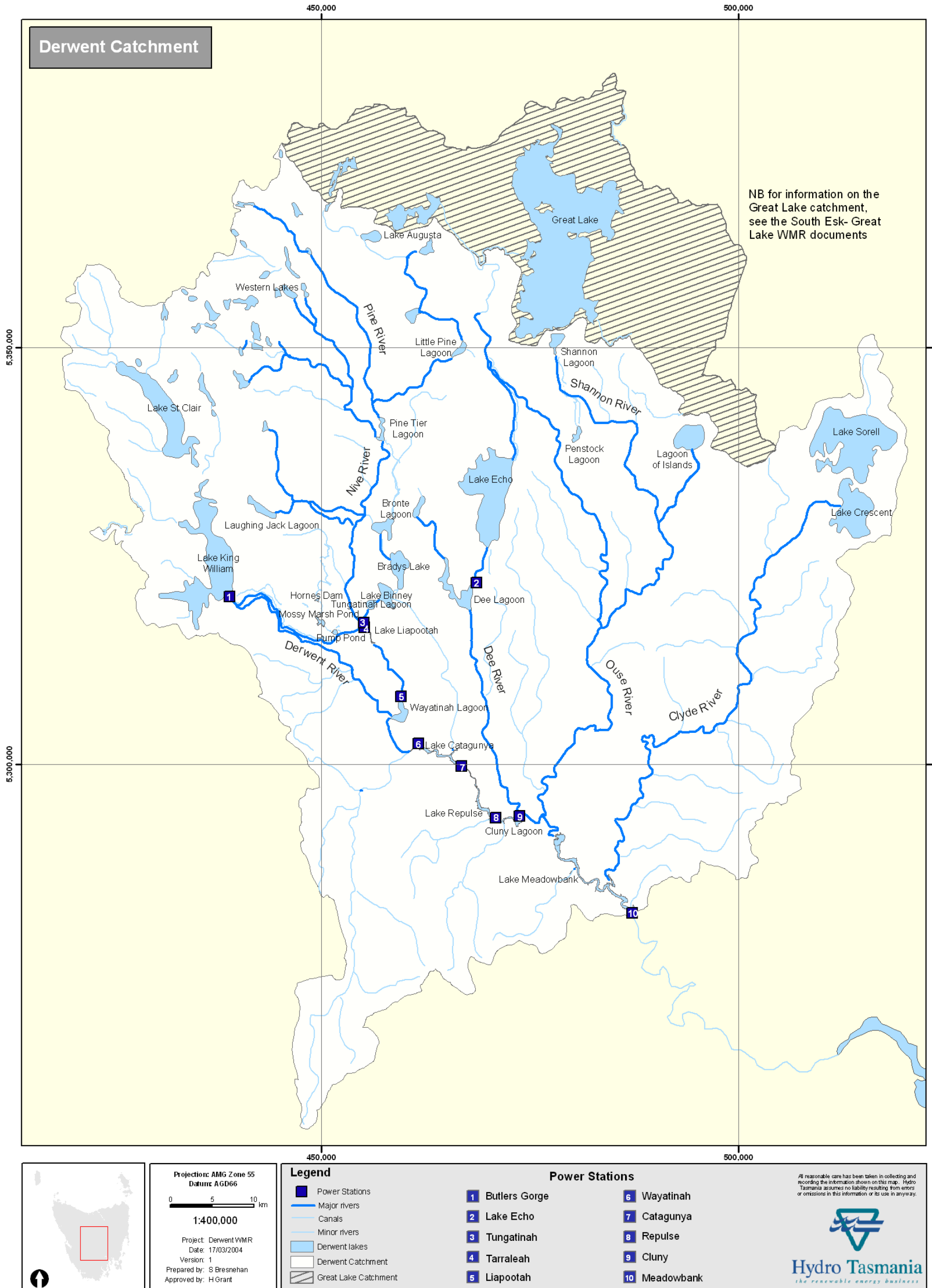


Figure 1: Map of the Derwent catchment area, including hydro-power stations

2 THE CONSULTATION PROCESS

2.1 STAKEHOLDER IDENTIFICATION

One of the first steps in the consultation process was to compile an extensive database of stakeholders which included individuals, interest groups, local Council officers and officers from relevant State Government departments. The initial database included 618 stakeholders and was a first pass, with the intention being to build on this list as more stakeholders were identified throughout the process. The database was compiled by a systematic review of the following information:

- riparian land titles on waterways influenced by Hydro Tasmania in the Derwent catchment;
- a review of stakeholder lists from previous Hydro Tasmania consultation projects in the area;
- Landcare groups;
- irrigation groups;
- fishing associations (from a list provided by the Inland Fisheries Service);
- local and State government officers; and
- recreational groups (e.g. tour operators, shack owners associations, etc.).

2.2 ADVERTISING

The WMR process and the Environmental Review document were advertised in July 2003 in the *Mercury*, the *Tasmanian Country*, the *Derwent Valley Gazette* and *The Highlands Digest*. The advertisement that was placed is shown in Appendix A.

The advertisements were intended to reach any interested parties who were not included in the stakeholder list. The aim of advertising was to alert the public to the fact that Hydro Tasmania was undertaking this project, to invite members of the community to participate in the WMR and to distribute the *Environmental Review: Derwent Hydro Catchment*.

2.3 INITIAL MAIL-OUT

The first mail-out was sent to all 618 stakeholders on the initial stakeholder database in August 2003. Additional stakeholders were sent this mail-out as they were identified through advertising, stakeholder input and other means.

The aims of the initial mail-out were to inform stakeholders about the WMR and invite them to be involved; as well as, to confirm contact details, to identify area of interest within the catchment, to inform them of the availability of the Environmental Review document, and to identify additional stakeholders.

The material sent in the initial mail-out is shown in Appendix B. It included the following:

- a covering letter describing the WMR and the process being undertaken;
- a brief questionnaire asking whether stakeholders wished to remain informed about the WMR and involved in the consultation process, whether they would like to receive a copy of the Environmental Review document, and for confirmation of contact details;
- a brochure describing the WMR process; and
- a reply-paid envelope.

2.4 DISTRIBUTION OF THE ENVIRONMENTAL REVIEW DOCUMENT

Production of the document, *Environmental Review: Derwent Hydro Catchment* was the main component of the information review stage of the Derwent WMR. The 110-page report was released to the public in October 2001 and can be viewed on Hydro Tasmania's website at www.hydro.com.au/environment/waterreviews/environment.

The Environmental Review document is a summary of background information and existing data for the catchment, and canvasses known environmental issues related to Hydro Tasmania water management, as well as other identified issues in the catchment. It therefore provided a useful starting point for the Derwent WMR and the free distribution of this document formed a basis for of the stakeholder consultation. There were 191 copies of this document distributed as part of the consultation process. More than 200 additional copies have also been distributed through other internal and external liaison.

Feedback on the Environmental Review document was consistently positive. It is intended to update this document every 5 years, which will benchmark improvements to environmental issues as they are addressed.

2.5 ISSUES SURVEY

An issues survey was sent to those stakeholders who indicated their interest by responding to the initial mail-out. Those stakeholders who did not respond to the initial mail-out were removed from the mailing list. The issues survey was mailed out in September 2003, however surveys were mailed out on a continuing basis as stakeholders returned their initial questionnaires. In total, 224 stakeholders received the issues survey.

The aim of the issues survey second mail-out was to obtain information on the main issues and areas of stakeholder concern with regard to Hydro Tasmania's water management, and ask for suggestions on how these concerns could be addressed. Information was also sought on how other influences might impact on the issues identified.

The material sent in the second mail-out is shown in Appendix C, and included the following:

- a cover letter;
- a survey of water management issues in the catchment; and
- a reply paid envelope.

2.6 RESPONSE TO THE WRITTEN CONSULTATION

RESPONSE TO THE INITIAL QUESTIONNAIRE

A total of 224 respondents (36% of the 618 on the initial mailing list) responded to the initial mail-out and indicated they wished to remain informed of the progress of the WMR, and to be involved in the consultation process. Table 1 shows the stakeholder groups who were sent the survey and the percentage of respondents from each group.

Table 1 Stakeholder Groups Responding to the Initial Mail-out Questionnaire

Stakeholder Group	Initial Mail-outs Sent		Respondents to Initial Mail-out	
	Number	% of Initial Sample	Number	% of Initial Sample
Anglers/Fishing Clubs	244	39.5%	85	13.7%
Farmers/Irrigators/ Agricultural Groups	286	46.3%	92	14.9%
Government/Council Officers	44	7.1%	26	4.2%
Community Groups (e.g. Landcare, Waterwatch etc)	20	3.2%	9	1.5%
Conservation Groups/ Organisations	3	0.5%	3	0.5%
Other	21	3.4%	9	1.4%
Total	618	100%	224	36.2%

RESPONSE TO THE ISSUES SURVEY

As stated in Section 2.5, the mailing list was refined based on responses to the initial mail-out, and an issues survey was sent out to those on the refined mailing list. A small number of stakeholders who had indicated their interest in contributing to the consultation process, but had not necessarily received or returned the initial questionnaire, were added to the refined mailing list and were sent the issues survey.

There were 97 respondents (43%) who returned the issues survey. Table 2 shows the stakeholder groups that were sent the survey and the percentage of respondents from each group. More information on the issues and concerns raised is provided in Section 3 of this report.

Table 2 Stakeholder Groups Responding to the Issues Survey

Stakeholder Group	Issues Surveys Sent		Responses to the Issues Survey	
	Number	% of Surveys Sent	Number	% of Surveys Sent
Anglers/Fishing Clubs	85	37.9%	50	22.3%
Farmers/Irrigators/ Agricultural Groups	92	41.1%	34	15.2%
Government/Council Officers	26	11.7%	7	3.1%
Community Groups (e.g. Landcare)	9	4.0%	5	2.2%
Conservation Organisations	3	1.3%	0	0%
Other	9	4.0%	1	0.4%
Total	224	100%	97	43.3%

2.7 TELEPHONE CONSULTATION

Following the completion of the mail-outs to stakeholders, extensive telephone consultation was undertaken to follow up on the mail-outs. This consultation had two main components with regard to those people contacted:

- Initially, those stakeholders who had only returned the initial questionnaire were contacted, to give them another opportunity to return the survey, or to discuss any issues they may have.
- Following this, those stakeholders who had returned their questionnaire were contacted to give them the opportunity to clarify and discuss their responses.

Telephone calls were made to all stakeholders on the refined mailing list. Of these, 77 did not respond to phone messages or were not contactable at all within the timeframe of the consultation process. Those stakeholders who were successfully contacted were invited to discuss any issues they wished to raise (including any issues already raised through their survey responses). The discussions with stakeholders during the telephone consultation were generally centred on clarification of the issues raised in the surveys. This information is captured in the survey results reported in Section 3 of this report.

2.8 PERSONAL VISITS

Ten stakeholders indicated during the telephone calls that they wished to receive site visits to discuss issues. Site visits to 6 stakeholders were conducted during January 2004, the remainder of these ten stakeholders were unable to be contacted or were content to further discuss issues by telephone. Issues raised from the site visits have been reported in this document along with the survey results in Section 3.

2.9 CONCURRENT CONSULTATION AND WATER-RELATED INITIATIVES

WATER MANAGEMENT PLANS

This Hydro Tasmania WMR is only one of a number of water management initiatives occurring in Tasmania. It is being conducted in co-operation with DPIWE and within the intent of the *Water Management Act 1999*, an Act that encourages sustainable water management and allows for the development of WMPs.

Comprehensive 'Water Management Plans' are currently being developed for Lakes Sorell and Crescent and the Clyde River. These plans are being developed by DPIWE in conjunction with a locally based Consultative Group comprising representatives from DPIWE, the Inland Fisheries Service, the Clyde Water Trust, local irrigators, Local Government and angling associations. This is the only water resource planning being undertaken in the catchment, although a Catchment Management Plan for the catchment upstream of Lake Crescent is also currently being prepared. Ultimately WMPs may be developed by DPIWE for all the waterways encompassed by Hydro Tasmania's Derwent WMR, and may therefore utilise much of the information collected through this WMR.

PROTECTED ENVIRONMENTAL VALUES

DPIWE held a series of public meetings throughout the catchment in October 2001 to establish Community water values, which were then used to derive Protected Environmental Values (PEVs) for waterways. The setting of PEVs are a requirement under the *State Policy on Water Quality Management 1997*, which has force of law under the *State Policies and Projects Act 1993*. The PEVs will be shown in local government planning schemes. The proposed PEVs for the catchment were disseminated for public review and finally adopted in April 2003.

The next stage under the State Policy on Water Quality Management will be to set Water Quality Objectives (WQOs). These are the actual standards for water quality that individual waterways should achieve. At this stage there is no set timetable for establishing WQOs for rivers within the Derwent catchment.

3 ANALYSIS OF SURVEY INFORMATION

In this section, the issues and concerns raised through the WMR consultation process are outlined. Concerns that have been raised in relation to future water management and those that relate to other catchment practices (i.e. non-Hydro Tasmania) have also been noted.

The issues raised during the consultation process have been summarised for each waterway in turn. It should be noted that the issues and suggested management options are summarised directly from the stakeholder surveys, and therefore reflect the feelings of the stakeholders as an entire group. As a result, in some instances, opposite issues and suggestions have been raised. The purpose of this report is simply to document all issues and suggestions raised by stakeholders.

The results from the surveys have been loosely quantified, and any additional issues raised as part of the follow-up consultation have been noted. Issues raised by the same respondent but relating to different waterways were treated as separate responses (i.e. many stakeholders gave a number of responses relating to different waterways). Where additional issues have been identified through telephone calls and personal visits, these have also been summarised.

This report presents information gained in time for the publication of this document. Consultation is an ongoing process and Hydro Tasmania does not wish to draw a line after which no further issues can be raised. Issues may also be raised in response to any perceived omissions or errors in the information presented in this report. The full details of any written or verbal consultation to date or subsequent to the release of this report will be made available to the researchers undertaking the technical studies stage of the WMR.

Catchment-wide concerns are discussed and then each waterway in the catchment is addressed in relation to the specific issues raised by stakeholders. The waterways discussed are as follows.

- whole catchment
- Shannon Lagoon
- Shannon River
- Penstock Lagoon
- Lagoon of Islands
- Ouse River
- Lake Echo
- Bradys Lake, Lake Binney & Tungatinah Lagoon
- Laughing Jack Lagoon
- Little Pine Lagoon
- Pine Tier Lagoon
- Dee Lagoon
- Nive River
- Dee River
- Bronte Lagoon
- Lake St Clair
- St Clair Lagoon
- Lake King William
- Lake Liapootah
- Wayatinah Lagoon
- Derwent River downstream of Butlers Gorge
- Lower Derwent Scheme (Lake Catagunya, Lake Repulse, Cluny Lagoon & Lake Meadowbank)
- Derwent River below Lake Meadowbank
- Clyde River
- Lakes Crescent & Sorell

3.1 CATCHMENT-WIDE CONCERNS

RESPONSES

Ten respondents to the consultation raised general issues that apply across the Derwent catchment. Five respondents were anglers or angling groups, one respondent had land management and forest operations interests, one respondent had cultural heritage interests, two were landowners, one of whom also had recreational and fishing interests, and one respondent was the IFS.

For those respondents who indicated their level of concern, four indicated a very high level of concern and two indicated high.

CONCERNS

Concerns were raised for waterways throughout the Derwent catchment regarding water level management, angler access, camping facilities, riparian management and exotic species.

There was concern regarding water level management throughout the catchment and the effects that this has on angling. Respondents noted that water levels affect lake access, influence fish behaviour and catchability and affect boating hazards. The timing and rate of water level change (fluctuations) was also seen as important in relation to how it affects the quality of fishing.

It was noted that while lake level agreements are important and help to manage some issues, minimum levels do not address concerns about water level fluctuation rates. There were concerns that rapid fluctuations in levels at the height of the trout season are not conducive to good fishing, and sudden drawdowns may result in incidents such as fish kills. Respondents were concerned that lake level agreements that do exist are generally informal, and some lakes do not have agreements in place. One respondent believed that lake level agreements had ceased to operate, and that minimum 'environmental' levels should be set. However contrary to this belief, these lake level agreements do remain in place and are maintained. The lake level agreements have been implemented to protect environmental or recreational values, in many cases to sustain the trout fishery.

Concern was raised that low water levels in the majority of Derwent storages results in increased turbidity and sometimes associated high nutrient levels. The respondent noted that this results in unfavourable fishing conditions and may impact on ecosystem processes. Also in relation to water quality, input of low quality water into clear water storages is of concern with regard to the potential impact on ecosystem processes.

Several respondents raised concerns about catchment and riparian land management in relation to water quality and associated effects on ecosystem processes. Respondents believed that practices affecting this aspect include logging and clear-felling burns, use of agricultural chemicals, stock access and cropping close to riverbanks. These land management practices are largely outside Hydro Tasmania's control.

Several respondents commented on amenity over the Derwent catchment. It was commented that although fisheries in the Derwent catchment are reasonably well serviced by boat ramps, there are some areas where access needs addressing, and in some areas, existing boat ramps are not able to be used at all water levels. One respondent commented that Hydro Tasmania has a good commitment to providing angler access to its waterways, however three others believed that there is a gradual decline in access to traditional angling areas including some Hydro Tasmania-controlled areas, as a result in safety/liability issues, management costs and abuse by a minority of users. Also of concern was the lack of adequately defined camping facilities, which the respondent believed has led to problems with environmental disturbance and vandalism in some instances.

One respondent in particular held strong concerns about Hydro Tasmania's management of water and land throughout the catchment, in relation to angling conditions and amenity. The respondent believed that insufficient consideration is given to users of Hydro Tasmania waterways, in relation to water levels,

fluctuation rates, river flows and angler access. The respondent strongly believed that Hydro Tasmania lacks concern for the influence that waterway management practices have on fish stocks and fish food sources. The respondent appeared to believe that the management of waterways in the Derwent catchment should be primarily focussed toward angling conditions and access.

Prevention of the introduction of exotic species, including fish and aquatic and terrestrial plants, was a concern for two respondents, one of whom saw this threat as one of the biggest faced by the fisheries in the Derwent catchment. The species of most concern was redfin perch. It was noted that it is important to maintain or install barriers to prevent these fish from colonising areas in which they are not yet established. Also of concern were exotic plant species, including Canadian pondweed.

One respondent was concerned that Hydro Tasmania's operations should align with existing codes of practice in relation to forest practices.

Concerns were raised that Aboriginal cultural heritage values that extend throughout the catchment need protection. The respondent believed that all dams have some impact on the Aboriginal cultural landscape, and commented that they were constructed at a time when few considerations were given to conservation values. The respondent was also concerned about the exposure of significant Aboriginal sites during low water levels, and their susceptibility to human impacts.

Other concerns related to widespread riparian weeds throughout the catchment, the effects of cloud seeding to the west on rainfall in the catchment, a belief that Hydro Tasmania's contribution to the community is limited and potential tourism sites are not currently utilised, and that the outflows from power stations flow directly into lakes and rivers (the respondent believed that these should be treated in some way).

One respondent commented that they believe Hydro Tasmania generally does well at managing the waterways in the Derwent catchment, and through the creation of storages, has provided good fishing and access to beautiful parts of the catchment that were previously inaccessible.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

To address concerns regarding water level management, rapid fluctuations and drawdowns, several suggestions were made. It was suggested to establish protocols regarding the sudden drawdown of lakes in the Derwent catchment to avoid negative impact on the fishery, including planning, one week prior warning and consultation with the IFS so that fish salvages can be planned for and public concerns can be managed. It was believed that where possible, planned drawdowns should be controlled and planned for outside the angling season, and that all informal lake level agreements should be formalised in Memorandums of Understanding.

In relation to water quality, respondents suggested that rivers should be fenced to prevent stock access, chemical use should be more controlled and clear-felling in the Derwent catchment should be ceased. One respondent believed that more attention should be given to the maintenance of lesser rivers, creeks, streams and their catchments in relation to water quality.

To address concerns regarding amenity, it was suggested that communications continue between Hydro Tasmania and Marine and Safety Tasmania with regard to the installation and continued maintenance of boat ramps, the current level of vehicle and foot access to Hydro Tasmania waterways should be maintained and improved where possible, camping areas should be formalised and refuse disposal and toilet facilities provided.

Two respondents wished to see meaningful consultation and liaison with the freshwater angling network regarding issues potentially impacting on angling, with the aim of discuss alternative management measures relating to angling conditions and amenity. It was thought that consultation with the IFS regarding riparian land management decisions is desirable in addressing angler concerns. Also in relation to communication, several anglers believed that Hydro Tasmania should improve communications about lake level

management. Specific suggestions included to revise the Hydro Tasmania lake level information website to make it more user friendly, and add non-Hydro Tasmania lakes such as Lakes Crescent and Sorrell; to publicise information about planned outages and maintenance more widely, for instance in newspapers, or to provide a PR person to provide information to the angling public and to attempt to plan alternate measures.

To address concerns about exotic fish species, it was suggested to maintain the integrity of barriers to migration of redbfin perch into waters where they are not established, enhance barriers that are insecure or likely to fail at varying flow conditions, and put contingency measures in place. It was thought that newly identified exotic plant species should be assessed for appropriate management action to maintain current biodiversity in native aquatic flora assemblages. In addition, it was suggested that more information should be supplied to tourist anglers to prevent the introduction or spread of exotic species.

In relation to concerns about Aboriginal cultural heritage, it was suggested that management plans should be developed for each storage area in conjunction with the Aboriginal community. It was felt that these plans would contribute to another dimension of responsible corporate management.

OTHER ISSUES TO CONSIDER

In the *Environmental Review: Derwent Hydro Catchment*, it was also identified that a threatened freshwater snail and three threatened species of caddisfly occur across the Derwent catchment.

3.2 SHANNON LAGOON

RESPONSE

In response to the issues survey, ten submissions were made regarding Shannon Lagoon. Nine of the respondents were anglers or angling groups. The tenth respondent was the IFS, who outlined specific concerns for Shannon Lagoon, as well as general concerns raised for waterways throughout the catchment (see discussion of whole catchment issues in Section 3.1).

Four of the respondents rated their level of concern as very high, five as high and one as moderate.

CONCERNS

The primary concern raised by nine respondents for Shannon Lagoon was water quality, resulting in poor angling, and unfavourable aesthetics for tourists. Respondents believed that turbidity in Shannon Lagoon is high as a result of infrequent water flow through the lagoon, since its use for power generation was ceased in 1965. The other influence, which is not related to Hydro Tasmania's management, was thought to be sediment input from the road adjacent to the lagoon.

Also raised as a concern by one respondent was the potential for migration of redbfin perch to Shannon Lagoon via water releases from Great Lake. It is thought possible that this species is present in Great Lake, and while measures have been implemented to prevent upstream migration, the respondent was concerned that there are currently no measures to prevent downstream migration.

One respondent was primarily concerned with the lack of boat ramp at Shannon Lagoon. Since the road has been sealed, the launching of boats from the roadside (which has apparently been the practice) is difficult.

One respondent was concerned about dam safety and wanted to be reassured that the Shannon Dam would be maintained. Another respondent also wanted assurance that a reasonable level of access to Shannon Lagoon would be maintained.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Most respondents believe that the water quality concerns in Shannon Lagoon would be addressed by raising the dam and maintaining the lagoon at a higher, relatively stable level. Other suggestions by respondents to address high turbidity were to minimise boating in the lagoon, provide more regular flows or flushing flows from Great Lake, attempt to reduce the amount of silt in the lagoon, use chemical means to reduce turbidity, and to construct an island and windbreak to help control wind-induced re-suspension of sediments. It was also pointed out that sediment input from the road has already been reduced as a result of an initiative by the IFS to have the road sealed.

Suggestions to address other concerns raised were to screen outflows from Great Lake to minimise the risk of redfin perch migrating into Shannon Lagoon (if it were present in Great Lake), construct a boat ramp to improve launching facilities, and to create a public access reserve around the edge of the lagoon to maintain current access conditions.

Respondents also wanted to be assured of ongoing maintenance of the dam, and noted that an existing leak in the dam should be repaired as soon as possible.

OTHER ISSUES TO CONSIDER

Other potential environmental concerns at Shannon Lagoon that were identified in the *Environmental Review: Derwent Hydro Catchment* include the presence of the threatened species, Shannon paragalaxias (*Paragalaxias dissimilis*) and the threatened invertebrate species, *Mesacanthotelson setosus* and *Onchotelson brevicaudatus*.

3.3 SHANNON RIVER

RESPONSE

Two respondents raised issues for the Shannon River. One respondent was an angling group, and one was the IFS, which raised specific issues for the Shannon River, as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment in Section 3.1).

One respondent had a very high level of concern, and one respondent had a high to moderate level of concern.

CONCERNS

A concern was raised regarding the potential for the pest fish species, redfin perch to breach a barrier in the Shannon River, and invade Shannon and Penstock lagoons. Should this occur, threatened species in these waterways could be at risk. The respondent believed that the viability of the barrier may be affected by the flow regime over which Hydro Tasmania has some control.

One respondent was concerned with poor water quality and growth of undesirable algae in Shannon River as a result of maintenance of lower than natural flows, agricultural inputs and releases of poor quality water from Shannon Lagoon.

One respondent was concerned that environmental flows should be released into the Shannon River to maintain river biota.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Two respondents suggested that provision should be made for environmental flows in the Shannon River.

It was suggested that fish ladders be provided where dams impede fish migration.

OTHER ISSUES TO CONSIDER

Environmental issues for Shannon River that were identified in the document *Environmental Review: Derwent Hydro Catchment* include high turbidity levels, high iron levels and the presence of the critically endangered species, the native wintercress (*Barbarea australis*).

3.4 PENSTOCK LAGOON

RESPONSE

There were twelve responses to the issues survey that expressed concerns about Penstock Lagoon. Ten of the respondents were anglers or angling groups one was a Tourism Tasmania representative, and one was the IFS. The IFS outlined specific concerns for Penstock Lagoon, as well as general concerns raised for waterways throughout the catchment (see discussion of whole catchment issues in Section 3.1).

Five of the respondents rated their level of concern as very high, six as high and one as moderate.

CONCERNS

It was pointed out that Penstock Lagoon is one of only two “fly fishing only” waters in the State and is highly utilised by tourist anglers, and that management of Penstock Lagoon is therefore politically sensitive and critical to Tasmania’s reputation as a world class angling destination. Concerns raised for Penstock Lagoon relate to a range of issues affecting the fishery.

Water quality was raised as a concern by seven respondents, three were concerned about the size and number of boats using the lagoon and stirring up the sediments, several had concerns about the impact of poor quality inflows from Shannon Lagoon, and others were concerned about low water levels influencing poor water quality.

Six respondents raised water levels as a concern, presumably in relation to fishing success, and indicated that keeping the water level above the agreed minimum had provided improved fishing conditions. One respondent was concerned that any changes could potentially have significant impact on the tourism market on small tourism businesses.

Amenities at Penstock Lagoon were also discussed by a number of respondents. The condition of boat ramps at Penstock Lagoon was raised as a concern by five respondents, and three respondents mentioned inadequate camping facilities and the potential impacts of camping near the lake shore.

Other concerns that respondents raised included the presence of the aquatic weed *Elodea (Elodea canadensis)*, the presence of threatened species (Shannon paragalaxias), fishery sustainability, spawning facilities, and difficult road access to the western shore.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

The current lake level management regime was believed to have been beneficial over the last several years. It was suggested by several respondents that an agreement on water levels be formalised between the IFS and Hydro Tasmania. One respondent believed that any changes to the management of Penstock Lagoon should be made in consultation with the IFS, and also with other specific tourist industry stakeholders.

A number of respondents were in favour of minimising the use of boats on Penstock Lagoon, and reducing the size and means of propulsion allowed. A maximum size of 3 metres was suggested, as was restricting the use of outboards to electric motors only. One respondent noted that Marine and Safety Tasmania has some jurisdiction over boat use and the allocation of boat ramps.

To address concerns regarding launching facilities at Penstock Lagoon, suggestions were to construct new launching ramps, possibly at the southern end of the lagoon, and to provide gravel to access the existing boat launching area on the canal. Other management options for addressing amenity and access related concerns were to develop camping facilities, provide suitable parking and improve access roads to prevent bogging.

Two respondents suggested management options to address trout spawning concerns. These include the provision of flows from Shannon Lagoon during the spawning season, and liaising with the IFS on timing such releases. Two respondents also believed that raising the water level in Shannon Lagoon would improve the water quality of the inflows to Penstock Lagoon.

Other management suggestions were to protect weed beds, and to remove the Elodea weed.

OTHER ISSUES TO CONSIDER

In the *Environmental Review: Derwent Hydro Catchment* several water quality issues were identified for Shannon Lagoon, including previously high algal growth and turbidity levels and high chlorophyll-a levels. The presence of the threatened native fish species, Shannon paragalaxias (*Paragalaxias dissimilis*) was also highlighted in the report.

3.5 LAGOON OF ISLANDS

RESPONSE

Eleven respondents to the issues survey raised concerns about the Lagoon of Islands. Six of the respondents were anglers or angling groups (one also noted camping as a use), one respondent was a commercial fisherman, and three respondents had a scientific or recreational interest. The eleventh respondent was the IFS, who raised specific concerns regarding the Lagoon of Islands, as well as general concerns raised for waterways throughout the catchment (see discussion of whole catchment issues in Section 3.1).

Four respondents to the issues survey rated their level of concern as very high, six as high and one as moderate.

CONCERNS

The primary issues raised for the Lagoon of Islands related to water level and water quality, and concerns about the demise of the floating islands.

Several respondents were concerned about the water quality issues of inflows from the Ripple Creek diversion, which they believe carry high nutrient loadings. One respondent commented that water quality appears poorer (dirtier) at lower lake levels, and this results in poorer fishing.

One respondent was concerned that the water level changes may affect the productivity of the lagoon and hence the trout fishery. Two respondents were concerned about water levels but did not specify what those concerns are, presumably they relate to the performance of the fishery.

Three respondents were concerned with ecological issues at the Lagoon of Islands, in particular the demise of the “floating islands”. Respondents believe that this is a result of the raising of water level in the lagoon. One respondent noted concerns about how Hydro Tasmania’s influence over the water levels and water quality may affect the habitat for the threatened bird species the great crested grebe, which uses the lagoon for breeding.

One respondent had significant concerns regarding the viability of the commercial eel fishery at the Lagoon of Islands and Hydro Tasmania’s influence over the lack of natural recruitment of eels in the Derwent catchment.

One respondent was concerned about the high coverage of weeds over the lake, and another expressed concern about the boat ramp. There was also a concern raised regarding trout spawning facilities. One respondent wanted to see the current management practices and lake level agreements maintained.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

In relation to managing the level of the Lagoon of Islands for the trout fishery, respondents wanted the lagoon level to either remain consistently above the current agreed minimum, or to be reviewed and formalised in an agreement with the IFS.

To address water quality concerns, several respondents suggested improving the quality of water inflows from Ripple Creek. Specific suggestions were to line Ripple Canal to reduce the amount of dissolved nutrients entering the lagoon, and to divert Ripple Creek water away from Lagoon of Islands into the Shannon River and to construct a dam at Christian Marsh, which the respondent believed would improve water quality in Lagoon of islands, augment irrigation supply to Ouse, Shannon and Bothwell areas, and would take pressure off the Clyde system.

Three respondents were in favour of attempting to restore the natural ecosystem of the Lagoon of Islands (at least to some degree) to attempt to restore the floating islands and natural habitats. In order to do this, one suggestion was to restore and maintain the original water level regime, and a second suggestion was to fully investigate the potential to restore the floating islands (including a review of lake level management requirements) and if some restoration was found to be feasible and compatible with the trout fishery, to adopt necessary management measures.

Other suggestions included examining the weed coverage over the lake, installing toilet facilities, and upgrading boat ramps.

OTHER ISSUES TO CONSIDER

Issues documented in the *Environmental Review: Derwent Hydro Catchment* regarding the Lagoon of Islands include high nutrient and chlorophyll-a levels, high turbidity levels and Aboriginal cultural heritage sites around the foreshore.

3.6 OUSE RIVER

RESPONSE

Thirteen stakeholders raised issues for the Ouse River during the consultation process. Nine respondents were irrigators or landowners (several also mentioned domestic use of Ouse River water), one respondent was a Landcare group, two respondents were anglers or angling groups, and one was the IFS. The IFS raised specific issues for the Ouse River, as well as listing it as one of the rivers for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Three respondents indicated their level of concern was very high, four indicated high, and three indicated a moderate level of concern. One respondent did not specify.

CONCERNS

The majority of respondents raised concerns that were related to water quality and water quantity.

Water quality was a particular concern during periods of low flows, particularly during summer when respondents noted that lower than natural flows and warm temperatures commonly result in algal growth. Respondents believed that other impacts of the poor water quality include degradation of irrigation equipment, foaming and discolouration and being unfit for domestic use. Some respondents also believed that in addition to low flows, water quality is also degraded by agricultural inputs (although others did not

believe that agricultural inputs contribute to poor water quality), and releases during summer from Lagoon of Islands in particular, but also from Shannon Lagoon.

Low flows were also of concern in relation to water availability for irrigation and the environment. Several respondents believed that insufficient water was available for irrigating crops and recreational facilities during summer, and several also mentioned concerns that there is no provision for an environmental flow in the Ouse River.

The efficiency of irrigation releases was of concern to some respondents. The primary issue was that irrigators lower down in the system may request flow releases, however by the time these flows reach them (several days) they are often not needed, or otherwise, have been withdrawn from the river by upstream irrigators who had not made a request.

Other concerns related to flows included flooding in the lower Ouse River (and that this is exacerbated by willows), fluctuating water levels in the Derwent River at the junction with the Ouse River resulting in erosion and stopping vegetation from establishing, and a lack of warning about flow fluctuations.

Other concerns included the presence and management of willows and other woody weeds and decline of ti-tree and wattle, bank erosion and undercutting and stock crossing between neighbouring properties at low river levels.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Five respondents wished to see an environmental or minimum flow implemented for the Ouse River. Several respondents suggested that concerns related to low flows (both water quality and water quantity) could be addressed by creating an alternative water source in the form of an on-stream or off-stream storage that could capture winter flows, and provide for environmental and irrigation needs during summer (eg. Christian Marsh Dam). It was believed that this would also address water quality issues as it would remove the Lagoon of Islands as the primary supply of irrigation water, and would provide dilution by cleaner water. Alternatively, it was suggested that more releases could be made via Monpeelyata Canal during summer, and to repair a weir to provide water to irrigate recreational facilities at Ouse.

Other management options to address water quality concerns included monitoring of water quality, river flow and level, and raising awareness about how farming practices affect the river system.

Options to address weed concerns included developing an environmental management plan and willow/woody weed removal and revegetation program, and for Hydro Tasmania to become involved in the Derwent Catchment Weeds Network and continue to support the Derwent catchment NRM committee.

It was also suggested that provision of fish ladders where dams impede fish migration along the river should be addressed.

OTHER ISSUES TO CONSIDER

Environmental issues in the Ouse River that were documented in the Environmental Review document include high nutrient levels and the presence of the threatened plant species, the native wintercress (*Barbarea australis*).

3.7 LAKE ECHO

RESPONSE

Thirteen respondents raised concerns relating to Lake Echo. Eleven of the respondents were anglers or angling groups, one was a representative from Forestry Tasmania and the IFS also raised concerns. The IFS highlighted specific issues for Lake Echo as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Five respondents rated their level of concern as very high, four as high and four as moderate.

CONCERNS

The primary concern of respondents was the lack of access to the northern end of the lake. Respondents were unhappy that the Hydro Tasmania road running alongside Monpeelyata Canal is closed for safety reasons, and other private roads are also inaccessible to the public. Respondents believed that the public should have right of access over crown land, including land vested in Hydro Tasmania. A lack of access to the northern end of the lake means that the entire length of the lake has to be negotiated in bad weather and this is a safety hazard for fishermen, particularly in the event of unexpected weather changes. Eight respondents mentioned this concern.

Five respondents were concerned about water level management, mainly with regard to lake levels and how they fluctuate, and a lack of notification to anglers of planned drawdowns. There was concern that fluctuating water levels are not healthy for fish and that low water levels impact on use of boat ramps particularly towards the end of last season.

One respondent noted a concern regarding navigation hazards. Concrete structures on the eastern side of the lake are currently not marked as hazards and could be an issue for boating safety.

One respondent was concerned about erosion from Monpeelyata Canal depositing sediment into the top of Lake Echo.

One respondent was concerned about the condition of boat ramps and saw a need for a properly constructed and sign-posted boat ramp, but was unspecific about the location.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

To address the concerns regarding lack of access to the northern end, and related concerns regarding safety hazards negotiating the length of the lake in poor weather, respondents suggested a range of solutions. These included opening the Hydro Tasmania road along Monpeelyata Canal, or implementing a permitting system for use of this road, negotiate access to the lake with other land owners in the area (eg. from Marlborough Road) and constructing a boat ramp at the top end of the lake, or to provide boat ramp access to the top end of the lake from the eastern or western shore.

To address water level concerns, respondents suggested that the needs of other users (i.e. anglers) should be taken into consideration in water level management. Specific suggestions were to maintain steady levels, slow fluctuation rates to allow fish to adjust to the changes in level, and to maintain a minimum level to prevent the water dropping too low.

Other suggestions were to mark the navigation hazards, and to build a new boat ramp in an unspecified location.

OTHER ISSUES TO CONSIDER

Other environmental issues at Lake Echo were identified in the Environmental Review document, including periodic high turbidity levels at the southern end of Lake Echo and extreme lake level variations.

3.8 BRADYS LAKE, LAKE BINNEY AND TUNGATINAH LAGOON

RESPONSE

There were twelve responses to the issues survey regarding the Bradys chain of lakes (Bradys Lake, Lake Binney and Tungatinah Lagoon). These lakes have been grouped into a single section as the management of the lakes, and the issues raised, are applicable to all three waterbodies. The majority of respondents for these

lakes referred to them as a single entity. Eleven of the submissions were from anglers or angling groups (several also mentioned boating, or shack ownership as an interest), one respondent was concerned with domestic use of water, and one respondent was the IFS. The IFS raised specific issues for these lakes, as well as listing them as waterways for which they have general concerns (see discussion of whole catchment issues in Section 3.1).

Six respondents indicated their level of concern as very high, one indicated high, four indicated a moderate level of concern, and one respondent did not specify.

CONCERNS

The concerns expressed by respondents to the issues survey regarding the Bradys chain of lakes were primarily related to water level management and spawning facilities for fish.

A number of respondents were concerned that extreme fluctuations in water levels were resulting in poor fishing in the three waterbodies. In particular, very low lake levels were of concern, as were rapid significant drawdowns, especially prior to long weekends when the utilisation rate of this area is high. Respondents believed that during periods of low lake levels in summer, exposure of inundation areas results in impacts on the trout food chain, that excessive turbidity around the margins is evident during strong winds, and that boat launching can be difficult when lake levels are low. Although it was recognised that the primary purpose of the Bradys chain of lakes is for electricity production, respondents felt that little consideration is given to managing the waterbodies for fishing and boating during the summer fishing season. Respondents pointed out that currently this chain is managed as one waterbody, however each lake is distinct as an individual fishery.

The second major concern raised by respondents was that there is currently no spawning facility to provide natural recruitment of the trout population in the Bradys chain, and that this is affected by the inconsistency/unreliability of flows into Bradys Lake via Woodward's Canal during the spawning season. Respondents believed that the fishing viability of the three lakes is being threatened by a lack of adequate spawning facilities. Concerns were raised that during the spawning run, fish may become stranded on the white water in Woodward's Canal. Also in relation to flows from Woodward's Canal was the importance of maintaining the white water as a barrier to prevent redfin perch from migrating into Bronte Lagoon.

One respondent had concerns regarding licensing conditions and fees for domestic use of water from Bradys Lake. Other concerns noted were that while the boat ramp at the northern end of Bradys Lake is very good, the parking area was thought to be in need of improvement, and motorbikes have been known to tear up land adjacent to the waterways.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Four respondents suggested that the water level management in the Bradys chain during summer should be reconsidered to provide better conditions for fishing, camping, boating and other recreational and aesthetic values. Specific suggestions were to avoid very low levels during the fishing season, and to wait until after a long weekend to draw down the water level rather than just prior.

To address concerns regarding the lack of fish spawning facilities, one respondent suggested continuing to stock Lake Binney and Bradys Lake with trout from Great Lake. A number of respondents suggested that a bypass channel should be provided, adjacent to the gates on Woodward's Canal to allow spawning access. However it was also noted that should this idea eventuate, serious consideration would need to be given to prevent redfin perch from using this as a conduit to colonise Bronte Canal.

Other management options suggested by respondents were to consult with the IFS on any changes to the water management regime for the Bradys chain, and to improve the parking area near the boat ramp at the northern end of Bradys Lake and create an ideal camping area.

OTHER ISSUES TO CONSIDER

There were no further issues identified.

3.9 LAUGHING JACK LAGOON

RESPONSE

Eight survey respondents noted concerns regarding Laughing Jack Lagoon. Seven of the respondents were anglers or angling groups, and the IFS also raised concerns. The IFS highlighted specific issues for Laughing Jack Lagoon, as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Two respondents indicated that their level of concern was very high, four as high, and two indicated a moderate level of concern.

CONCERNS

Six respondents raised concerns regarding low water levels in Laughing Jack Lagoon, and levels during the 2002-03 season were of particular concern to one respondent. Respondents believe that the water level is drawn down too low too frequently in Laughing Jack Lagoon, resulting in poor fishing, and sometimes fish strandings near the dam wall. Respondents believed that fish only bite when levels in Laughing Jack Lagoon are high. Water level management was a concern for some respondents with regard to fish stocks and spawning potential.

One respondent was concerned that poor quality turbid water gets transported from Laughing Jack to Bronte Lagoon at inappropriate times, and two respondents raised non-specific concerns regarding boat ramps. One respondent was concerned that existing management practices be maintained.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Management suggestions to address the concerns regarding water levels were to implement and maintain a minimum level that would provide good fishing conditions, and sustain spawning and fish survival. A specific level suggested was at least two metres higher than the existing minimum level. It was also desirable to implement a management regime that provided more consistent water levels, and to limit extreme drawdown events to one per year. However it was also suggested by another respondent that an agreement should be made to maintain existing management practices. Respondents also wanted to be informed of levels and that the needs of other users are taken into account.

It was also suggested that Hydro Tasmania should provide sufficient notification to IFS regarding significant operational events, and that assistance in salvaging fish should be provided.

To address concerns regarding water quality in the lagoon, it was suggested that the level be held up for several years to allow weed growth with the aim of controlling silt levels. To address the quality of outflows to Bronte Lagoon, it was suggested that water should only be transferred to Bronte Lagoon during calm periods.

Two respondents suggested that construction of a good boat ramp should be undertaken to address concerns regarding access.

OTHER ISSUES TO CONSIDER

Data from the “Waterway Health Monitoring Program’ has shown excessive turbidity in Laughing Jack Lagoon during the autumn, when water level is at its lowest.

3.10 LITTLE PINE LAGOON

RESPONSES

There were thirteen responses to the issues survey regarding Little Pine Lagoon. Twelve respondents were anglers or angling groups (one respondent also noted camping as a use), the thirteenth respondent was the IFS, which raised specific concerns regarding Little Pine Lagoon, as well as listing it as one of the waterways for which it raised general concerns (see discussion of whole catchment issues in Section 3.1).

Three respondents rated their level of concern as very high, six rated it as high, and five as moderate.

CONCERNS

Nine respondents raised concerns regarding water levels. The main point highlighted was maintaining a balance between water levels that are too high, leading to poor fishing and possible loss of fish over the spillway, and water levels that are too low, leading to a reduction in water quality. In addition, consistent changes in water level rather than sudden fluctuations were preferred. Five respondents were concerned with regard to water quality, specifically turbidity. Possible causes of turbidity suggested by respondents were low lake levels, runoff from the nearby main road, boating activity and disturbance from wading. One respondent believed that water quality appeared good.

Other concerns raised for Little Pine Lagoon related to exotic species. One respondent was concerned that there may be potential for the pest fish species (redfin perch) to invade the lagoon and migrate on to the Western Lakes if the current barriers against redfin perch in Monpeelyata Canal are not maintained. Also raised as a concern was the presence of the exotic water plant, *Elodea* in Little Pine Lagoon.

Also raised as concerns were access to boat ramps, foreshore camping and unsafe pedestrian access across the foot of the dam to the western shore when the lagoon is spilling.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

The primary suggested management measure to address the concerns regarding lake levels, was to observe the current lake level agreements for minimum and maximum levels, that are set out in a Memorandum of Understanding with the IFS (October, 2003). However, one respondent believed that anglers who frequent the lagoon could provide additional advice, and that current recommendations for water management are not optimal. One believed that utilising water from more than one storage at a time would allow water levels to rise and fall in a more seasonal manner.

To address concerns regarding the potential for migration of redfin perch into Little Pine Lagoon, it was suggested that Hydro Tasmania liaise with the IFS regarding any future infrastructure changes that might increase this likelihood.

One respondent suggested investigating the effects of the nearby unsealed Marlborough Highway in relation to water quality. Two respondents suggested that Hydro Tasmania should support calls for sealing the section of highway adjacent to the lagoon, with the aim of reducing turbidity. Suggestions to address turbidity also included restricting the size, power and speed of boats using the lagoon, or excluding them altogether from the northern end to prevent them stirring up sediments, and a test-ban on wading in certain areas to observe the result. It was also suggested that land developments around the lagoon should be monitored in relation to water quality and visual impacts.

Other suggestions to manage the concerns raised included liaising with DPIWE regarding foreshore camping, constructing a suitable ramp and parking area at the dam wall end of lagoon and constructing a footbridge below the dam for safe access to the western shore during spills.

OTHER ISSUES TO CONSIDER

A number of other environmental issues were identified in the Environmental Review document or raised by reviewers of this report. These issues include high chlorophyll-*a* levels; the presence of the threatened fish species, Western paragalaxias and some instances of tadpole strandings.

3.11 PINE TIER LAGOON

RESPONSES

Five survey responses outlined concerns at Pine Tier Lagoon. Four respondents were anglers or angling groups (one also noted bushwalking and shooting as uses), and one respondent owned land in the area. The IFS did not raise any specific issues for Pine Tier Lagoon, but included it in the list of waterways for which it raised general concerns (see the discussion on whole catchment issues in Section 3.1).

One respondent rated their level of concern as very high, two as high and two indicated a moderate level of concern.

CONCERNS

Respondents were concerned with access to the boat ramps at Pine Tier Lagoon, in that the existing ramps are not in an optimal location and have inadequate space for parking boat trailers. Fluctuating water level in the lagoon was raised as a general concern, and also in relation to the effect this may have on the size of fish in the lagoon. A concern was also raised regarding the effect of logging in the catchment, on water quality in Pine Tier Lagoon, particularly relating to inflows from the Nive and Pine rivers.

One respondent was concerned with the use of private land by anglers for camping, in relation to wastes.

Hydro Tasmania does not have any jurisdiction or responsibility over logging in the catchment, or permitting uses such as camping on private land.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Management options suggested by respondents included improving the access to the boat ramps, specifically by constructing a new boat ramp at the top end of Pine Tier Lagoon with adequate parking facilities.

Populating Pine Tier Lagoon with brown trout from Great Lake was suggested as a means to increase the size of the fish in the lagoon and unspecified changes to lake level management.

Prevention of logging in the area of Pine Tier Lagoon to improve water quality, and monitoring the inflowing water from the Nive and Pine rivers were suggested measures to address concerns relating to water quality.

Neither of the two latter management activities is regulated by Hydro Tasmania. Fishery management is a responsibility of the Inland Fisheries Services, and forest harvesting operations fall within the jurisdiction of Forestry Tasmania.

OTHER ISSUES TO CONSIDER

No additional issues identified.

3.12 DEE LAGOON

RESPONSES

There were two submissions resulting from the issues survey regarding Dee Lagoon. One respondent was an angling group, and the other was a property owner in the area. The IFS did not raise any specific issues for Dee Lagoon, but included it in the list of waterways for which it raised general concerns (see the discussion on whole catchment issues in Section 3.1).

Both respondents noted their level of concern as very high.

CONCERNS

One respondent was concerned about the boat launching and camping facilities at Dee Lagoon and the other respondent had concerns regarding licensing conditions and fees for domestic use of water from Dee Lagoon.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Management options suggested to address amenity concerns were to construct adequate boat ramps at Brownie Bay and Mentmore Bay, and to provide areas suitable for short term camping.

To address the concern relating to water licensing, the respondent suggested the introduction of water metering and user pays rather than licensing and insurance fees for domestic water use.

OTHER ISSUES TO CONSIDER

Occasional high turbidity in Dee Lagoon was also identified as a relevant issue in the Environmental Review document. Monitoring under Hydro Tasmania's 'Waterway Health Monitoring Program' has also shown that runoff of turbid water from unsealed roads in the catchment area for Mentmore Marsh has an impact on water quality in the marsh, and this has led to complaints from anglers using this area in the past.

3.13 NIVE RIVER

RESPONSES

Six respondents to the issues survey raised concerns regarding the Nive River. Two responses were from anglers or angling groups, one was from the IFS, and two respondents had scientific, environmental or recreational interest. The IFS raised specific concerns for the Nive River, as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Two respondents indicated their level of concern was very high, one indicated high, one moderate, one indicated a low level of concern. One respondent did not specify.

CONCERNS

The primary concern raised regarding the Nive River was the current lack of environmental flows in river reaches downstream of Hydro Tasmania infrastructure (eg. Pine Tier and Liapootah dams). Specific concerns outlined included the loss of biodiversity and aquatic habitat for fish, platypus and macro-invertebrates as a result of low flows, and the encroachment of terrestrial vegetation into dewatered river channels and marshes.

There was also a concern raised regarding the potential for pest species to access the Western Lakes via pathways from the Nive River.

Additional concerns were related to water quality and river health with regard to the effects of logging and water management, although the respondent also commented that Hydro Tasmania does a good job of managing the river for water quality and river health.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Several respondents suggested that environmental flows should be set and maintained for the Nive River. A suggestion to address the concern regarding the risk of pest species migration was to assess the pathways for access into the Western Lakes and if needed, enhance natural barriers.

Further suggestions to address concerns included monitoring water quality in the Nive River, releasing water down the Nive River and to increase trout spawning out of Wayatinah Lagoon.

A management option that is not within Hydro Tasmania control was a suggestion to slow logging activity in the area.

OTHER ISSUES TO CONSIDER

The Environmental Review documented the presence of the threatened species, the native wintercress (*Barbarea australis*) in the Nive River.

3.14 DEE RIVER

RESPONSES

Four survey responses noted issues in the Dee River. Two responses were from anglers or angling groups, one was from a landowner and one was from the IFS, which raised specific concerns for the Dee River, as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Two respondents indicated their level of concern as very high, one as low, and one did not specify.

CONCERNS

The main concern raised by respondents for the Dee River was the lack of an environmental flow. Three respondents raised this concern. It was believed that low flow in the Dee River during summer impacts in the fishery and river biota, and that flows are only present in the river during summer when riparian releases are made.

Other concerns raised were that willow infestation has spread without landowner attention. Inflowing creeks have dried up in recent years, and that there has been a diversion on the Dee River by one landowner.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Management suggestions were primarily to set and maintain an environmental flow that is independent of riparian releases.

OTHER ISSUES TO CONSIDER

In addition to concerns raised by stakeholders, the Environmental Review documented potentially high nutrient levels in the Dee River as an issue to be aware of.

3.15 BRONTE LAGOON

RESPONSES

Fourteen respondents to the issues survey mentioned concerns at Bronte Lagoon. Twelve responses were from anglers or angling groups, one response was related to domestic water supply, and one response was received from the IFS. The IFS raised specific issues for Bronte Lagoon, as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Six respondents listed their level of concern as very high, four as high, two as moderate and one as low. One respondent did not specify their level of concern.

CONCERNS

Six respondents noted concerns regarding fluctuations in water levels in Bronte Lagoon. The concerns related primarily to the speed at which the level fluctuates during the fishing season, and respondents believed that this has resulted in a decline in the fishery and a disappointing fishing experience. Respondents were concerned that the fluctuations have an impact on the ecosystem.

Three respondents had specific concerns that Bronte Lagoon is held high for long periods of time, which they believe has been detrimental to the shore-based fly fishing that Bronte has been well known for in the past. However, one respondent believed that lake levels are generally held too low during the fishing season.

Other concerns raised by four respondents regarding water level management included that there is no Memorandum of Understanding formalising lake level agreements in Bronte Lagoon, and respondents wanted to be reassured that the current management regime would be maintained. These respondents were happy with the agreed minimum level. One respondent noted that there is a lack of notification of planned drawdowns in Bronte Lagoon, and that this is particularly inconvenient when drawdowns coincide with periods of high utilisation, such as long weekends.

Four respondents raised water quality as a concern. Respondents were concerned that water quality in Bronte Lagoon is affected by inflows from Laughing Jack Lagoon at times when the water quality in Laughing Jack Lagoon is poor (eg. near the end of the fishing season). Respondents believed that this affected the quality of fishing in Bronte Lagoon. However one respondent commented that water quality appears good.

Other concerns include the presence of pest fish species in Bradys Lake, and that the only barrier to this species reaching Bronte Lagoon is the flow velocity in Bradys Canal. Respondents also expressed concerns about the amount of strapweed present in Bronte Lagoon, and the presence of the aquatic weed *Elodea*. There was also a concern relating to fees and licensing conditions for domestic water usage from the lagoon.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Most respondents made suggestions regarding options to address their concerns about water level management. One suggestion was that excessive fluctuations in lake levels should be reduced or avoided during the fishing season by extending the time period over which the lagoon is drawn down, or delaying releases from the lagoon until after the fishing season is over. It was suggested that a weir could be more effective than control gates to regulate the lagoon level.

A number of respondents wanted to be confident that the existing lake level agreements and management practices would be maintained. However others suggested changes to the lake level management regime, specifically, reducing the minimum level by half a metre to improve shore based fly fishing. Others wished to see the lake levels kept high, or to see more “natural” levels maintained (eg. higher levels in spring and low to medium levels in summer and autumn).

Several respondents suggested that communication with anglers should be undertaken to develop a new water management strategy, to determine when anglers prefer lake level changes to be kept to a minimum, to take into account the needs of other users, and to notify anglers of when drawdowns are to take place.

To address concerns regarding the quality of water inflows from Laughing Jack Lagoon, it was suggested that water should only be discharged into Bronte Lagoon from the Clarence pipeline when water quality is good. Specific suggestions to achieve this were to limit drawdowns at Laughing Jack Lagoon to prevent turbidity, to only release turbid water from Laughing Jack after the fishing season closes, or to divert this water elsewhere when the quality is poor.

Other suggestions to address various concerns were to implement a boat speed limit to prevent excess wash around the lagoon margins at low levels, to create a picnic area near the Bradys boat ramp to cater for tourists visiting the area, and to introduce water metering and user pays rather than licensing and insurance fees for domestic water use. One respondent queried the potential to generate electricity at Woodwards Canal.

OTHER ISSUES TO CONSIDER

No further issues have been identified

3.16 LAKE ST CLAIR AND ST CLAIR LAGOON

RESPONSE

There were six responses to the issues survey raising concerns for Lake St Clair and St Clair Lagoon. Four were anglers or angling groups, one was a representative from Tourism Tasmania, and one was the IFS, who noted specific issues for these waters, as well as listing them as waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Three respondents indicated their level of concern as very high, two indicated high and one indicated low.

CONCERNS

Three respondents expressed concerns regarding private development at Pumphouse Point, in relation to restricting angler access to a prime fishing areas, and one respondent was also concerned regarding potential impacts of this development on water quality.

Three respondents raised concerns regarding water levels in Lake St Clair Lagoon. Specific concerns related to the overall water management regime, excessive drawdowns during the fishing season, and lack of notification of excessive drawdowns. It was noted by one respondent that St Clair Lagoon is considered to be one of the most attractive tourist angling destinations in the State and is currently the subject of discussion for more intense management. One respondent was concerned about water levels in Lake St Clair. The respondent was concerned that very high levels are a threat to the native vegetation, but was not concerned about the gradual fluctuations, which the respondent noted appear to have little impact on the fishing.

One respondent was concerned that despite apparently normal water level management, there appears to have been a reduction in the number of tailing trout in St Clair Lagoon over the last two seasons (fish chasing prey into shallow water). The respondent believes this to be a phenomenon unique to Tasmania, and is a particular feature of St Clair Lagoon, and something that is marketable in the tourism industry. The respondent commented that they believe tailing trout were scarce at St Clair Lagoon over the last two seasons, despite water level management appearing normal.

One respondent expressed a concern about the lack of opportunity of replenishment of fish stocks to St Clair Lagoon from Lake St Clair.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

To address concerns regarding water level management in St Clair Lagoon, respondents suggested implementing an operating regime that is complimentary to the fishery during the fishing season (i.e. limiting excessive drawdowns to outside the season), and that this should be formalised in a Memorandum of Understanding on water level management. It was also suggested that water level management should take into account the needs of other users, such as anglers and that the IFS and particular tourism stakeholders should be consulted in relation to management of St Clair Lagoon. In Lake St Clair, a suggestion to address concerns about water levels was to implement a new full supply level at approximately one metre below the current FSL to avoid impacts on the vegetation.

One respondent wanted to see work on creating an isopod tailers fishery in conjunction with the IFS. It was suggested that a scientific investigation be carried out into what has caused the reduction in numbers of tailing trout over the past two fishing seasons. The respondent believes that slightly altered water management practices may encourage this phenomenon to reoccur.

Other suggestions to address concerns included raising the water level in Lake St Clair to allow trout from the lake to restock the lagoon, and for the developers of Pumphouse Point to allow access to the area.

OTHER ISSUES TO CONSIDER

Other issues identified for St Clair Lagoon include concern by anglers regarding amenity in relation to access by road, and foot access around the lagoon. There is a strong belief by some parties that the tourism value of the fishing offered by St Clair Lagoon is high and that this should be protected in the first instance, and then developed. The IFS have listed St Clair Lagoon as a waterway in need of a Fishery Management Plan.

In addition, the Environmental Review document identified the presence of the rare species, the Spiny Mountain Shrimp and the frail endemic species, Golden Cloud algae in Lake St Clair.

3.17 LAKE KING WILLIAM

RESPONSE

Five issues survey respondents raised concerns regarding Lake King William. Three respondents were anglers and the fourth was the IFS. The IFS highlighted specific issues for Lake King William as well as listing it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

One respondent indicated a very high level of concern, two indicated high and two indicated a moderate level of concern.

CONCERNS

The main concern that respondents raised for Lake King William related to the difficulty in gaining boat access as a result of varying water levels. At the northern end of the lake there are presently only informal ramps that are not practical at all water levels, and respondents believe that this, combined with large drawdowns means that there is currently inadequate access to most of the lake. It was noted that the lack of suitable launching facilities at various lake levels commonly results in bogging of trailers at these launching areas. One respondent was concerned that there is no notification to anglers of level changes.

Two respondents noted concerns regarding navigation hazards. Respondents were concerned that changing water levels in Lake King William result in the exposure of tree stumps, and that some Hydro Tasmania infrastructure are also navigation hazards. One respondent also raised concerns that the exposed boat ramp at the southern end of the lake causes hazardous launching conditions and results in difficulty in boarding

boats. Another respondent commented that winter fishing is unsatisfactory and can be dangerous, but did not elaborate any further.

A concern raised by one respondent was that the camping area at Lake King William is primitive.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Several suggestions were made for management changes to address the concerns raised. It was suggested that several boat ramps be established to cater for varying water levels. Two respondents suggested that the navigation hazards should be identified and marked. To address concerns regarding the exposed boat ramp, it was suggested that a breakwater could provide protection and allow for easier boarding.

A general suggestion was made that Hydro Tasmania take into account the requirements of other users. There was some comment from one respondent in relation to spawning conditions out of Lake King William to improve winter fishing conditions, however the exact nature of the suggestion was unclear.

OTHER ISSUES TO CONSIDER

No further issues were identified.

3.18 LAKE LIAPOOTAH

RESPONSES

No responses to the issues survey were received in relation to Lake Liapootah.

OTHER ISSUES TO CONSIDER

No issues have been identified by other means.

3.19 DERWENT RIVER DOWNSTREAM OF BUTLERS GORGE

RESPONSES

Three stakeholders raised issues for the upper Derwent River downstream of Butlers Gorge. One respondent was an angling group, and two had recreational and scientific interests. A representative of fish farming in the area also provided comment.

One respondent indicated that their level of concern was very high, and one indicated a high level of concern, two were unspecific.

CONCERNS

The three survey respondents were concerned about the effects of the reduced flow in this reach of the Derwent River, and the lack of an environmental flow resulting in impacts on the biodiversity and amenity. Specifically, one respondent believed that low flows have resulted in loss of instream habitat for fish, macroinvertebrates and platypus, leading to a loss of biodiversity and amenity between Lake King William and Wayatinah Lagoon.

One respondent was also concerned that low flows may have resulted in invasion of the channel by vegetation and that occasional reduced water quality occurs during spills.

One respondent had concerns about forest activities in the catchment and the impact this, along with very low summer flows, has on water quality in the river, particularly as it relates to water for use in a fish hatchery situation.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

All four stakeholders who provided input suggested that an environmental flow be determined and implemented for this reach of the Derwent River, with the aim of partially restoring instream biodiversity and recreational amenity, and provision of reliable water for use by the fish hatchery.

OTHER ISSUES TO CONSIDER

No further issues have been highlighted.

3.20 WAYATINAH LAGOON

RESPONSES

There were five responses to the issues survey regarding Wayatinah Lagoon. Three respondents were anglers, one was the IFS, and one had recreational or scientific interest. The IFS noted specific concerns for the lower Derwent chain of storages including Wayatinah Lagoon, as well as indicating it as one of the waterways for which it has general concerns (see discussion of whole catchment issues in Section 3.1).

Two respondents indicated that their level of concern was very high level of concern, and three indicated that their level of concern was high.

CONCERNS

Several respondents raised concerns regarding water levels at Wayatinah Lagoon. Respondents believed that the management regime of the lagoon has changed, and that it is now generally held at higher levels than in the past. This has the effect of inundating native vegetation at the top end of the lake, and flooding shallow areas that had previously provided good areas for shore fly fishing. Respondents believe the overall result has been that shore fly fishing is no longer possible, and fly-fishing from boats has also been affected. Concerns were also noted that marked fluctuations in water levels can cause problems tying up boats and can affect the quality of fishing.

Another concern expressed was the effect that the structures (both Hydro Tasmania and others) in the lower Derwent system including Wayatinah have on fish passage. Effects were thought to including the impact on the spawning migration of adult eels upstream and downstream, and the effects on other native migratory species such as lampreys and galaxiids

Other concerns mentioned were the risk of spills of contaminants from Hydro Tasmania facilities, concerns regarding the potential for disease outbreaks or contamination from nearby fish farming operations, and the maintenance of waterbird and platypus habitat.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Suggestions by respondents to address concerns regarding lake levels, were to reduce the level of the lagoon to one that would allow reestablishment of native vegetation around the top end of the lagoon and to allow shallow wading and fly fishing from the shore. Suggestions were also made to introduce operational changes to reduce water level fluctuations and manage the lake to optimise the fishery, and to provide notification to anglers regarding the lagoon level (eg. by providing information to the caravan park where anglers commonly camp).

Suggestions to address concerns regarding fish passage were for Hydro Tasmania to continue to provide support to facilitate fish passage, to screen off-takes for fish, and to facilitate translocation to downstream areas via manual trapping.

It was also suggested that the current management regime be retained to maintain the current habitat condition for waterbirds and platypus.

OTHER ISSUES TO CONSIDER

No further issues have been identified at Wayatinah Lagoon.

3.21 LOWER DERWENT SCHEME (CATAGUNYA, REPULSE, CLUNY, MEADOWBANK)

RESPONSES

In total, fourteen respondents raised concerns for the lower Derwent area. Two of these responses referred to the entire lower Derwent scheme, one referred specifically to Lake Repulse and one referred specifically to Cluny Lagoon. The remaining eleven responses were for Lake Meadowbank or the section of the Derwent River above Meadowbank, therefore most of the issues discussed in this section relate to this particular area.

There were four responses from anglers or angling groups, one from a commercial fisherman, one respondent was the IFS, six respondents were landowners most with irrigation or domestic use interest (three also mentioned recreational use), one respondent was a Landcare representative, and one respondent had an ecological interest. The IFS noted specific concerns for the lower Derwent scheme, as well as noting general concerns for these waterways (see discussion of whole catchment issues in Section 3.1).

Four respondents indicated that their level of concern was very high, five indicated high, four indicated moderate, and one indicated a low level of concern.

CONCERNS

Several respondents raised concerns for Lake Meadowbank and the Derwent River upstream of Lake Meadowbank, including concerns about the effect that environmental flows or water allocation restrictions in the Derwent River below Meadowbank would have on the availability of water in Lake Meadowbank. One respondent was concerned about the effects that regulated flows and water level changes have on irrigation, but was unspecific about these effects. One respondent was very concerned about what they believe to be inappropriate water allocations, and difficulty in obtaining further allocations from Meadowbank.

Three respondents raised concerns regarding bank erosion and undercutting in various areas of Lake Meadowbank and the Derwent River upstream of Lake Meadowbank. It was believed that this is a result of fluctuating levels and regulated flows and was thought to result in decreased water quality.

Two respondents raised concerns regarding the effect of Meadowbank Dam (and other structures in the lower Derwent) on migratory fish. Concerns were that these structures are impediments to the passage of migratory fish, and that the species affected include elvers and adult eels, lampreys, native galaxiids and threatened species such as the Australian Grayling. One respondent was concerned that there is significant elver mortality below Meadowbank Dam, however it was noted by another respondent that Hydro Tasmania supports elver translocation from below the dam, and that there may also be other species that need to be considered.

Two respondents were concerned about weed issues, particularly woody riparian weeds (gorse, broom, blackberry and willow). These respondents felt that Hydro Tasmania has a responsibility to manage woody weeds on rivers and lakes, and has failed to do so effectively.

One respondent was concerned about water quality in the Derwent River above Meadowbank, and believed that logging in the catchment may have some influence on this.

One respondent was concerned that throughout the lower Derwent, but particularly for lakes Catagunya and Repulse and Cluny Lagoon, sudden releases occur, resulting in dramatic lake level fluctuations. The respondent was concerned that there is no notification given to adjoining landowners that may be affected.

Various concerns related to the fishery or fishing amenity were raised for Lake Meadowbank and other lower Derwent lakes. These were that Lake Meadowbank provides better fishing at a more stable water level that is not too low, as much of the lake is quite shallow upstream of Dunrobin bridge, and a concern that the boat ramps at Lake Meadowbank (near Dunrobin Bridge) and Cluny Lagoon are unsafe. The respondent believed that Hydro Tasmania is responsible for maintaining this boat ramp. The respondent was also concerned that there is no boat ramp at Lake Repulse.

Other concerns were that water level changes may affect water bird habitat at Lake Meadowbank, and that this habitat should be maintained, that remediation of a landslip area near Lake Meadowbank is incomplete, and that spills of contaminants may occur from Hydro Tasmania facilities in the lower Derwent.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Several respondents suggested that to address their concerns about the availability of water for irrigation, Hydro Tasmania should play role in water allocations along with DPIWE, to make more water available for irrigation and ensure that water allocations are appropriate. One respondent suggested that current recommendations for an environmental flow below Meadowbank should be reviewed.

A number of respondents suggested actions to manage weeds, including on-ground weed management including spraying, removal or rehabilitation, providing support to landowners to manage weeds on Hydro Tasmania land, becoming involved with the Derwent catchment weed network and continuing to provide support to the Derwent catchment NRM committee.

Two respondents suggested improved communications regarding lake and river level fluctuations, such as setting up a notification system of levels for adjacent landowners, or to provide a schedule in advance so that irrigators and landowners can plan around it.

Suggestions made to address fish migration concerns were to screen off-takes for fish, to facilitate the translocation of fish to downstream areas, and to continue to support the translocation of elvers. One respondent suggested constructing an elver trap below Meadowbank to facilitate translocation, but was not aware that there is an existing elver trap and that translocation already occurs.

Other suggestions were to continue the current water management to maintain the current habitat available for water birds and one respondent suggested that Hydro Tasmania should repair boat ramps at in Lake Meadowbank (Dunrobin Bridge) and Cluny Lagoon and build a new boat ramp at Lake Repulse.

OTHER ISSUES TO CONSIDER

The Environmental Review documented the presence of the rare species, the Green & Gold Frog in waterways of the lower Derwent.

3.22 DERWENT RIVER BELOW LAKE MEADOWBANK

RESPONSES

There were twenty-eight responses to the issues survey regarding concerns for the Derwent River downstream of Lake Meadowbank. Nineteen respondents were landowners with irrigation, stock and domestic use interests (a number also mentioned recreation and fishing as uses). Three respondents were anglers or angling groups, one was the IFS, four had environmental management interests, and one respondent was a supplier of potable water.

Six respondents indicated that their level of concern is very high, fourteen indicated a high level of concern, six indicated medium and one indicated a low level of concern. One respondent did not specify.

CONCERNS

Fluctuating water levels in the Derwent River below Meadowbank Dam was a concern raised by eleven respondents. Respondents were concerned that fluctuating water levels result in damage to water pumps used for irrigation and domestic water supply. It is believed that large fluctuations at any time of year, but particularly in summer, coupled with a lack of notification to downstream landowners, results in pumps being flooded or left without water, and landowners are unable to move pumps in time to avoid damage. One respondent expressed regret at the demise of a notification system they believed to have been effective in the past.

Other concerns expressed in relation to water level fluctuations and large sudden releases included erosive damage to river banks, flooding risks, variations in water temperature (cold water is not good for some crops such as peas and hops), water quality (including turbidity) and a negative effect on fishing conditions.

Nine respondents also mentioned concerns regarding the availability of water for irrigation. Specific concerns regarding this were in relation to existing caps on irrigation allocations downstream of Meadowbank Dam, respondents believed this had occurred without sufficient investigation and were concerned about the setting of an environmental flow, and the influence that this would have on the availability of irrigation water into the future. Also of concern was the possibility that water could be transferred to other areas (eg. Cole River Valley and Kempton area), thus reducing the amount of water available to landowners with direct access to the river. It was noted that some irrigators would like to obtain a permanent allocation of water rather than a temporary one. Respondents generally appeared to believe that Hydro Tasmania could influence DPIWE water allocations.

Other concerns related to irrigation water availability were that too much water is permitted to flow out to sea without being able to be used for irrigation purposes. Respondents wanted to see summer flows maintained, one respondent believed that there is a minimum "irrigation flow" for the Derwent, which they believed has not been maintained, however no such minimum flow criteria exists.

Two respondents raised concerns regarding water quality. One concern was in relation to the provision of good quality water for drinking and the effect that river level and flow fluctuations may have on turbidity. The second concern related to the effects of faecal contaminants and fertilisers on the quality of water used for fruit packaging and handling. This respondent believed that flows from Meadowbank provide a positive diluting effect, but that the sources of the contaminants were not within Hydro Tasmania control.

Several respondents raised concerns regarding woody weeds (willow, gorse, broom and blackberry) and riverbank condition. One respondent was concerned that despite weed management on his own property, adjacent land owned by Hydro Tasmania is not properly managed and causes reinfestation. Respondents noted the potential for erosion to occur following the removal of willows, and one respondent believed that flow management during the replanting and reestablishment of native species would assist with this.

Two respondents raised concerns regarding fish passage. The respondents were concerned that Meadowbank Dam is a barrier to the migration of native migratory fish species, including those that inhabit the Derwent Estuary. Once beyond Meadowbank Dam, these fish have access to through the Clyde, Shannon and Ouse catchments. One respondent pointed out that manual transfers currently carried out for eels are supported by Hydro Tasmania, however there may be other species that require consideration and potential translocation programs for these should be developed.

There were a number of concerns relating to fishing conditions and amenity. One respondent raised concerns regarding flows for spawning cues for native species (eg. the threatened species, the Australian grayling). One respondent believed that the stretch of the Derwent River from Lawitta to Meadowbank has produced smaller fish than prior to the dams being built, and that this indicates an ecological impact on the food chain.

Two respondents were concerned that although Hydro Tasmania provides good waterways for trout fishing, and contributes to boat ramps, few facilities are provided for land-based anglers. The respondents were concerned that there are no angling pontoons in the lower Derwent River/Estuary.

Several environmental and ecosystem related concerns were also raised. Three respondents were concerned that an appropriate environmental flow should be implemented. In relation to this, one respondent believed that rapid diurnal fluctuations in flow, and loss of intermediate floods has led to a reduction in biodiversity and a risk of channel change, another was concerned that estuarine circulation and ecosystem processes should be maintained through an appropriate flow regime. One respondent was concerned that suitable water bird habitat is maintained.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Respondents suggested a number of management options to address concerns about water level fluctuations. The suggestion from five respondents was to reintroduce a water level/flow notification system for downstream landowners, or to provide a schedule so that they are able to plan in advance.

Six respondents suggested that river flow should remain more consistent, particularly during summer and autumn, resembling natural patterns and avoiding sudden extreme changes in the level of the river. It was believed that this would benefit both irrigation and fishing, and could be achieved by alterations to the overall management of the Hydro Tasmania system (i.e. utilising more than one river system at a time to provide peak loads). One respondent believes that a minimum “irrigation flow” already exists which should be maintained; however such no such flow has been set. Another respondent commented that they believe the flow in the lower Derwent is sufficient for irrigation and the quality of water is generally very good.

Suggestions for management options to deal with the allocation of irrigation water were to allow allocation or sell water from Lake Meadowbank to downstream irrigators. Several respondents believed that all factors dealing with river health should be assessed before taking more water from the Derwent River, and that proposed environmental flow requirements should be reviewed.

Suggestions for weed management were to implement effective weed management on Hydro Tasmania land, or to provide neighbouring landowners with the resources to manage weeds on Hydro Tasmania land to prevent reinfestation, to manage flows to allow reestablishment of native vegetation following the removal of willows.

It was suggested that water quality improvements could be made by introducing better practices on fish farms, fencing of riparian strips and construction of better sewage systems for small towns.

Two respondents suggested that fishing amenity of the lower Derwent River could be improved by the provision of strategically placed angling pontoons, similar to those found in the Tamar River near Launceston. It was suggested that Hydro Tasmania could investigate this possibility in conjunction with southern councils.

There were a number of management options suggested by respondents to address environmental concerns. It was suggested that investigations be carried out into the effects of the altered flow regime on estuarine processes, sediment movements and habitat, and that an assessment of flood flows be carried out and appropriate flows implemented to assist with channel and estuary maintenance. In addition, it was suggested that assessment and appropriate management of short-term variations in flow be carried out.

Other management options suggested were to implement “ramping rules” (gradual increases and decreases in flow to avoid rapid fluctuations), to maintain current management practices maintained to assure critical habitat for water birds, to maintain agreements to ensure an appropriate level at Bryn Estyn water treatment plant.

OTHER ISSUES TO CONSIDER

Another environmental issue identified in the Environmental Review document is water quality concerns attributed to agricultural, urban and industrial use.

3.23 CLYDE RIVER

RESPONSES

Four survey responses noted issues in the Clyde River. Three responses were from landowners and one was from an angler.

Three respondents noted their level of concern as very high, and one did not specify.

CONCERNS

Concerns were mostly related to flows in the river, both in relation to irrigation supply and fishing. One respondent believes that the low flows are a result of controls implemented by IFS in an effort to eliminate carp from lakes Crescent and Sorrell. One respondent was concerned with the permanence of the flow, and another was concerned regarding flow fluctuations affecting vegetation growth and erosion.

One respondent was concerned that the historic use of water in the Clyde River for irrigation should be recognised, and believed that Hydro Tasmania influences the availability of water in the Clyde by asserting rights to water in the tributaries, but not in lakes Crescent or Sorrell, or the Clyde River itself.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

One respondent suggested that the Clyde Irrigation Trust should be recognised as responsible for control of water in the Clyde River.

OTHER ISSUES TO CONSIDER

No other issues were identified.

3.24 LAKES CRESCENT AND SORRELL

RESPONSES

Five respondents raised issues regarding lakes Crescent and/or Sorrell. All respondents were anglers, and one also mentioned bushwalking and was a shack owner.

Three respondents indicated that their level of concern was very high, one indicated high, and one moderate.

CONCERNS

Three respondents were concerned about low water levels. Three respondents mentioned water quality (turbidity) as a concern, particularly in relation to clear-felling near the lake shore, and low water levels. One respondent was concerned about carp infestation of Lake Crescent.

One respondent was concerned that there is a lack of westerly rains as a result of cloud seeding in the west, and that this has resulted in westerly rains not making it through to the Lake Crescent/Sorrell catchment.

MANAGEMENT OPTIONS SUGGESTED BY RESPONDENTS

Respondents generally recognised that most of the concerns raised were not the responsibility of Hydro Tasmania to address.

Management options suggested included keeping lake levels higher to reduce turbidity, by reducing irrigation outflows. It was suggested that this might be achieved by building alternative infrastructure to provide irrigation water for the Clyde River (eg. Christian Marsh).

It was suggested that although they are not Hydro Tasmania lakes, lakes Crescent & Sorrell should be added to the Hydro Tasmania website so that the public can be informed about lake levels.

To increase rainfall in the catchment, it was suggested that cloud seeding be extended to include this catchment when conditions are favourable.

One respondent indicated that although not Hydro Tasmania's responsibility, they would like to see Hydro Tasmania working with the IFS and farmers to rid Lake Crescent of carp.

Two respondents also indicated that less logging should be carried out in the vicinity of the lakes, particularly clear-felling on the shores of the lake, and that this may help address water quality concerns. This management option is outside Hydro Tasmania's control.

OTHER ISSUES TO CONSIDER

A further environmental issue at Lake Crescent was identified in the Environmental Review document, being severe water quality problems.

4 PROPOSED TECHNICAL STUDIES

4.1 INDIVIDUAL STUDY BRIEFS

As a result of consideration of issues raised or identified during the Information Review and Community Consultation phases of the Derwent Water Management Review, 11 technical studies have been developed. A brief description of these is given, however some changes to the aims or focus of these studies may occur following publication of this document.

STUDY 1. SHANNON LAGOON HABITAT IMPROVEMENT ASSESSMENT

Following on from previous studies reviewing options for improving water clarity in Shannon Lagoon, this study will collect information to assess threatened native species issues. This will take the form of native fish, invertebrate and vegetation surveys aimed at giving some indication of local distribution and habitat preference, and an assessment of how any proposed changes to the present management system might affect these species.

STUDY 2. RECREATIONAL MANAGEMENT AND PLANNING ASSESSMENT

The level of recreational use of Hydro Tasmania's waterways in the Derwent catchment appears to have increased in recent times, and this has resulted in a number of land management and access issues. Anglers concerned about the environmental conditions at some storages (in particular Penstock Lagoon) have also questioned boating use and have suggested potential alternatives for managing access. This study will review the level of concern across the catchment with the aim of identifying or developing options for managing these issues at key waterways. Where applicable, this work will be undertaken in parallel and close consultation with the Inland Fisheries Service, which is currently in the process of developing 'Fishery Management Plans' for some waterways in the catchment.

STUDY 3. DERWENT ABOVE MEADOWBANK RIPARIAN, FLOOD STUDY AND FROG SURVEY

This study will involve surveys of the upper basin of the lake and the Derwent River upstream to determine the scale and extent of willow infestation and riverbank erosion; undertake a geomorphic assessment of the

river and an identification of the hydraulic processes that are causing erosion in particular areas; and an assessment of the impact willows may be having on water levels during flood flows in the Derwent and lower Ouse Rivers. This will be conducted in close consultation and cooperation with all riparian landholders and other stakeholders as appropriate, with the aim of developing a management regime for this area that is holistic and strategic.

In conjunction with this, surveys for the endangered 'Green & Gold Frog' will be undertaken to determine the presence or absence of the frog in the area, its distribution and habitat preferences within the lake, and the implications lake level management and willow infestation may have on frog populations in the lake. The findings from this study may have a bearing on any possible management measures that are identified to control willow infestation around the northern shores of the lake.

STUDY 4. DERWENT BELOW MEADOWBANK INSTREAM PROCESSES STUDY

Recent studies of the Derwent River and estuary below Meadowbank Dam have identified gaps in present knowledge of the environment in this area, particularly in relation to geomorphic processes and instream habitat. This study will review present knowledge of the environmental condition of this section of the river with the aim of designing and implementing a program to gather data that will address some of these knowledge gaps. The study will also include a review of water use and other stakeholder issues, so that public discussions are balanced with respect to environmental and water use issues.

STUDY 5. OUSE RIVER ENVIRONMENTAL AND WATER USE ASSESSMENT

Flow in this river is highly modified by hydro-electric generation activities and water extraction for agriculture is a major reason for water releases to this river from Shannon Lagoon and Lagoon of Islands. Environmental health appears to be considerably compromised and water quality deterioration is recurrent. The focus of this study will be to establish community accepted environmental and waterway values and determine specific objectives that will guide the development of 'environmental management' options for the river. This study will involve substantial liaison and communication with the local community along with investigative studies to shed light on issues related to the riverine environment and water use in the catchment.

STUDY 6. PEST FISH MANAGEMENT STUDY

A number of pest fish (Redfin Perch, Tench and Carp) are known to occur throughout the Derwent catchment, and the potential for inadvertent translocation of these fish has been recognised as an issue for some time. The threat from pest fish invasion (in particular Redfin Perch) is of particular concern at Little Pine, Shannon and Penstock Lagoons (where there are threatened native fish) as well as in the Shannon River. This study will focus on developing and implementing a strategic action plan for managing pest fish dispersal within the hydro-electric generation system. The study will review data and information from past work, undertake field surveys to produce a map that identifies 'hot spots' for potential translocation and existing barriers to translocations, and identify specific mitigation options for implementation.

STUDY 7. WATER LEVEL COMMUNICATION PROCESS REVIEW

During the 'Community Consultation' stage of the Derwent WMR, a number of respondents raised concerns about the lack of communication from Hydro Tasmania regarding changes in water level in the vicinity of Lake Meadowbank and the problems this creates for irrigation extraction or flooding. This study will review these concerns and will focus on establishing a new protocol for stakeholder communication.

STUDY 8. FISH MIGRATION AND MITIGATION STUDY

This study will review the existing impediments to fish passage in the catchment, the types of fish involved and their life-cycle needs. This will then lead to a consideration of specific actions that might be undertaken

to resolve specific issues or known problems. The investigation will be designed and undertaken in close cooperation with the Inland Fisheries Service, who is the main stakeholder.

STUDY 9. LAKE MANAGEMENT FOR MULTIPLE USE ASSESSMENT

Although a number of historical lake level agreements are in place for various waterbodies in the catchment, the effectiveness of these in achieving their objectives needs to be reviewed. At present Hydro Tasmania is formalising some of these agreements through Memorandums Of Understanding with the Inland Fisheries Service, however as a number of survey respondents have voiced concern about current water level management and access issues at a variety of waterbodies, it may be timely to undertake a review of all existing agreements, the pattern of operations at key storages, and the system whereby Hydro Tasmania notifies stakeholders of unusual drawdown events. The study will examine the use of signage at specific locations and various communications strategies that might assist with increasing public understanding of level management by Hydro Tasmania.

STUDY 10. LAKE ST CLAIR ENVIRONMENTAL REVIEW

This study will review the existing management of water level in Lake St Clair and St Clair Lagoon. At present, Hydro Tasmania manages water in the lake to minimise shoreline erosion within the World Heritage Area and potential erosion in the Derwent River downstream, the former being done in consideration of the views of the National Parks and Wildlife Advisory Council. It is timely to review the performance of this operational regime, and consider new pressures from recreational anglers to actively manage water level in St Clair Lagoon. The study will involve liaison with PWS, surveys of the lake shore to assess current erosion, a review of water management and current infrastructure operations, and discussion with angling interest groups on perceived requirements for fishing in St Clair Lagoon.

STUDY 11. LAGOON OF ISLANDS STUDY

Hydro Tasmania has had a long involvement at the Lagoon of Islands following construction of the Ripple Canal in 1984, which appears to have resulted in continual ecosystem imbalance and poor water quality ever since. At the current time investigation of these issues are continuing through a PhD study that is aimed at identifying viable long-term management solutions for the lagoon. It is planned to complete this study by 2006, at which time the cost-effectiveness of potential options will be assessed within Stage 4 of the Derwent WMR.

5 NEXT STAGES OF THE WATER MANAGEMENT REVIEW

5.1 TECHNICAL STUDIES

The technical studies will be started in July 2004, and are expected to run for at least a two-year period. During this time, stakeholders on the mailing list will be kept informed of the progress of the technical studies through regular newsletters.

Individual stakeholders may be consulted during early stages of the technical studies as researchers seek clarification or further input on issues raised for particular waterways. Stakeholders may also be consulted on the formulation of river or lake management objectives for the waterway or waterways for which they have a particular interest.

The outcomes of the technical studies will be a series of recommended options that will then be prioritised and formulated into management actions during the next stage of the WMR. A report for each of the technical studies will be placed on the Hydro Tasmania web site.

5.2 DEVELOPMENT OF A HYDRO TASMANIA AQUATIC ENVIRONMENT MANAGEMENT PROGRAM

The final outcome of the WMR process will be the development of a program of Hydro Tasmania actions for sustainable management of the waterways in the Derwent catchment. The management options proposed in the technical studies will be prioritised according to benefits and costs, and from this prioritisation, a number of management actions will be put forward in an Aquatic Environment Management Program (AEMP). This document will be published as a draft and distributed for comment. Following a review of feedback on the draft and discussion with stakeholders to resolve issues, the management program will be finalised and the actions implemented.

At all stages, this Hydro Tasmania WMR process is consistent with the Department of Primary Industry Water and Environment directions in the area of Water Management Planning, so that the outcomes of this project can be readily incorporated into a broader DPIWE Water Management Plan for the catchment that may be developed in the future. The development of WMPs is under the discretion and control of DPIWE.

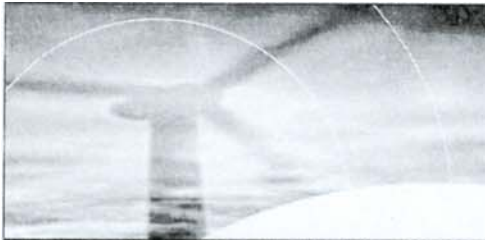
5.3 WATER MANAGEMENT REVIEWS IN OTHER HYDRO TASMANIA CATCHMENTS

This WMR for the Derwent catchment is the second of six such reviews being undertaken by Hydro Tasmania. The South Esk – Great Lake catchment was completed in 2003. The remainder are:

- the Pedder – Gordon catchment,
- the Pieman – Anthony catchment,
- the Mersey – Forth catchment, and
- the King River catchment.

All Hydro Tasmania WMRs will follow a similar methodology to that described here and are being undertaken to ensure that Hydro Tasmania is sustainably managing the waterways it influences in a manner acceptable to the Tasmanian community.

APPENDIX A – ADVERTISEMENT



DERWENT WATER MANAGEMENT REVIEW

Community Consultation Stage

Hydro Tasmania invites stakeholders in the Derwent catchment to participate in a community consultation process as part of its Derwent Water Management Review.

The Derwent Water Management Review will examine Hydro Tasmania's operations in the catchment, including the sub-catchments of the Ouse, Nive and Dee rivers, and will identify measures to improve the sustainability of its water management. The water management review process includes four stages: an information review; community consultation; technical studies; and program development.

The information review stage of Hydro Tasmania's Derwent Water Management Review was completed in 2001 with the release of the Derwent Environmental Review. This document is publicly available and will provide an information base for the community consultation stage.

Community consultation for Hydro Tasmania's Derwent Water Management Review commenced in July 2003. Stakeholders will have the opportunity to express their concerns and issues, receive regular newsletters and other information, and receive reports about the project as they are published.

If you would like to participate in the consultation process or receive a copy of the Derwent Environmental Review, please contact Hydro Tasmania.

Hydro Tasmania, Environmental Services
Water Management Reviews
GPO Box 355
Hobart, TAS 7001
Ph: (03) 6230 5899
Email: environment@hydro.com.au



Hydro Tasmania

the sustainable energy business

arbn 072 377 158 abn 48 072 377 158

30054

APPENDIX B – INITIAL MAIL-OUT AND QUESTIONNAIRE



Hydro Tasmania
the renewable energy business

21st August 2003

« Name »
« Address »

Dear Sir or Madam,

Hydro Tasmania's Derwent Water Management Review

Hydro Tasmania's Water Management Review program commenced in 1999 as a means for Hydro Tasmania to review its operations on a catchment-by-catchment basis, and identify measures to improve the sustainability of its water management.

Following the first Water Management Review in the South Esk – Great Lake catchment, Hydro Tasmania is now progressing its Water Management Review in the Derwent catchment, and a consultation stage began in July 2003.

You have been identified as a stakeholder in the Derwent catchment and added to a preliminary mailing list, which was compiled through a review of land titles, community groups, and from the mailing list for Hydro Tasmania's South Esk – Great Lake Water Management Review.

Hydro Tasmania invites you to contribute to the consultation process for the Derwent Water Management Review. This involves the option of responding to a survey of issues, and receiving follow-up telephone calls or site visits if desired. You would also receive regular information about the Derwent Water Management Review throughout the life of the project, and have the opportunity to receive reports as they are published.

If you would like to remain involved in Hydro Tasmania's Derwent Water Management Review, please take a few minutes to confirm your details, fill out the enclosed questionnaire and return it in the reply paid envelope provided by the 5th September 2003.

Yours sincerely
Hydro Tasmania

n Manager

Hydro-Electric Corporation
ARBN 072 377 158 ABN 48 072 377 158

4 Elizabeth Street
Hobart Tasmania 7000

www.hydro.com.au

GPO Box 355D
Hobart Tasmania 7001

Telephone 1300 360 441
Facsimile (03) 6230 5823

If you wish to be involved in Hydro Tasmania's Derwent Water Management Review, or to remain on the mailing list, please confirm your contact details, fill out the questionnaire and return this form in the reply-paid envelope provided by the **22nd August 2003**. If you choose not to return this form, your name will be removed from the mailing list.

Please check your details are correct

If your details are incorrect, please correct them below

Title	_____
First Name	_____
Surname	_____
Position	_____
Organisation	_____
Postal address	_____
Phone (Bus Hrs)	_____
Fax	_____
Email address	_____
Property name	_____

What is your interest in the Derwent Water Management Review? If you have more than one role, please number them in order of importance (1 – most important etc.).

Landowner	<input type="checkbox"/>
Government	<input type="checkbox"/>
Fishing	<input type="checkbox"/>
Recreation	<input type="checkbox"/>
Irrigator	<input type="checkbox"/>
Community Group eg. Landcare	<input type="checkbox"/>
Conservation Group	<input type="checkbox"/>
Community member	<input type="checkbox"/>
Other (please specify below)	<input type="checkbox"/>

Would you like to receive a copy of Hydro Tasmania's Derwent Catchment Environmental Review document? (Approx. 100 pages)

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

Are you aware of other individuals or organisations that should be involved in the Derwent WMR consultation process? Please write contact details on reverse side of this sheet or attach further pages if necessary.

Yes	<input type="checkbox"/>
No	<input type="checkbox"/>

Thank you for your time



Environmental Services Water Management Reviews
GPO Box 355 Hobart TAS 7001
Fax: 03 6230 5899

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Hydro Tasmania and the Environment

In line with changes in community expectations since the 1970's, Hydro Tasmania has endeavoured to minimise the environmental impacts associated with its hydro-electric developments. As well as developing environmental guidelines for construction, restoration and revegetation, Hydro Tasmania has defined pathways towards environmental sustainability of its operations in the long term.

Hydro Tasmania's Environmental Policy and Aquatic Environmental Policy have the common holders of sustainable development, its possible environmental management, compliance with environmental management, open and effective communications, environmental expertise and reviews of environmental performance.

Each element of these environmental policies leads directly to the setting of annual objectives, targets and performance measures in Hydro Tasmania's Environmental Management System (EMS), consistent with the requirements of ISO 14001. The EMS provides a framework for the systematic evaluation of how Hydro Tasmania's business activities, products and services interact with the environment.

Hydro Tasmania's Commitment to Sustainability

Hydro Tasmania's vision is to be 'Tasmania's world renowned renewable energy business'. Underpinning Hydro Tasmania's activities is a corporate commitment to sustainability and consideration of the triple bottom line. This means that profit is not the only basis for business reporting and self assessment, but equal emphasis is given to business performance in the areas of natural and social environments, i.e. 'People-Planet-Profit'.



Hydro Tasmania invites stakeholders in the Derwent catchment to be involved in the Water Management Review process. By placing your name on the mailing list, you will be able to have your say on concerns and issues in the Derwent catchment, receive regular newsletters and other information about the Derwent Water Management Review, and have the opportunity to receive reports for the project as they are published.

To find out more information, or to be placed on Hydro Tasmania's mailing list for the Derwent Water Management Review, please contact Hydro Tasmania.



**Environmental Services
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www.hydro.com.au

Derwent Water Management Review

**Derwent
Water Management Review**

Hydro Tasmania is conducting a review of its water management practices in the Derwent catchment, beginning in July 2002. Input from the community is important in achieving the best outcomes from this process, which is based on stakeholder consultation and scientific investigation of issues identified.

Water Management Reviews

Hydro Tasmania initiated its Water Management Review (WMR) program in 1999 to review its environmental performance and identify measures for moving towards more sustainable water management. The program is based on stakeholder consultation and scientific study, and aims to find a balance between the environmental, social and business demands on water in Hydro Tasmania catchments.

The program systematically and openly reviews Hydro Tasmania's water management practices, and where warranted, identifies and evaluates options that will yield better environmental or social outcomes.

Hydro Tasmania's process for the WMR program has been endorsed by the Department of Primary Industry Water and Environment (DPIWE), and has been planned so that the outcomes from the WMRs can be used by DPIWE in the development of Water Management Plans under the Water Management Act 1999.



The program is based on individual catchments, with each of Hydro Tasmania's six major catchments being addressed in turn. Each catchment assessment is comprised of four major stages as follows:

Stage 1 - Information Review

During this stage, Hydro Tasmania infrastructure and operations in the catchment are documented in an Environmental Review Report, which also identifies known environmental and social issues related to Hydro Tasmania's activities.

Stage 2 - Community Consultation

At the commencement of this stage, the environmental review document is advertised and disseminated. This is followed by consultation with the community and stakeholder groups through presentations, a survey of issues and follow-up consultation. A publicly available Community Consultation Report is produced which documents stakeholders' concerns and important issues.

Stage 3 - Technical Studies

This stage involves the design and undertaking of comprehensive technical studies, researching the main issues identified, and examining the feasibility of different options for their management. The results are presented in a Scientific Studies Report. The management options proposed are then subject to a cost-benefit analysis.

Stage 4 - Program Development

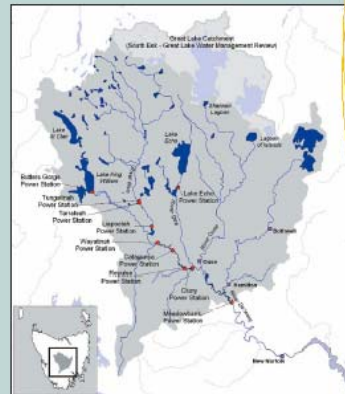
The information from the previous three stages is then used to develop an Aquatic Environment Management Program, which comprises a package of actions for Hydro Tasmania to progress towards its goal of sustainable water management.

Throughout the process, the WMR aims to be open and transparent, allowing for considerable stakeholder review and input. A stakeholder database is maintained, and regular newsletters sent out to keep stakeholders aware of the status and findings of the program.

The Derwent is the second WMR to be undertaken by Hydro Tasmania, following completion of a WMR in the South Esk - Great Lake catchment between 1999 - 2003. Reports on Hydro Tasmania's WMRs can be obtained from Hydro Tasmania or by visiting www.hydro.com.au

Derwent Water Management Review

The Derwent catchment waterways that Hydro Tasmania will focus on are those affected by Hydro Tasmania's operations, including the sub-catchments of the Nive, Dee and Cuse Rivers. Water from almost the entire Derwent catchment is used for generating hydro-electricity, and the generating system is quite complex. The four main hydro-generation systems in the Derwent catchment are the Upper Derwent, Lower Derwent, Nive-Dee and Cuse-Shannon. The first three of these are operational power schemes, while the Cuse-Shannon no longer has any operating power stations and the storages in this part of the scheme are primarily used for irrigation and riparian water supply. The Derwent catchment area and the power station locations are shown on the map.



The Derwent Environmental Review document was published by Hydro Tasmania in 2001, and is the output from the first stage of Hydro Tasmania's Derwent WMR. It contains detailed information about Hydro Tasmania's operations in the Derwent catchment, and known issues related to the aquatic environment. The report will be used as a basis for the community consultation stage, and is available from Hydro Tasmania or by visiting www.hydro.com.au.

Community consultation for the Derwent WMR will be undertaken between Jul-Dec 2003, followed by at least two years of technical studies into issues raised. Program development is the final stage, anticipated to be completed in June 2006.

APPENDIX C - SECOND MAIL-OUT AND ISSUES SURVEY



Hydro Tasmania
the renewable energy business

11th September 2003

« Name »
« Address »

Dear « Name »

Issues Survey for Hydro Tasmania's Derwent Water Management Review

As outlined in information recently sent to you, Hydro Tasmania is undertaking a review of its water management practices in the Derwent catchment. By responding to our initial mail-out, you indicated that you would like to be involved in the consultation for the Derwent Water Management Review.

Enclosed is a survey on issues related to Hydro Tasmania's water management in the Derwent catchment. Our aim in sending out this survey is to find out information, so that studies can be designed to strategically look at water management issues in the catchment. Within the context of this project we will not be able to directly respond to every issue, but it will be important that any responses we do make be with as much awareness of the issues as possible. All issues raised will be documented and assessed to determine whether a study will be carried out on any particular issue.

If you are able to provide information on issues or concerns related to Hydro Tasmania's water management in the Derwent catchment, please fill out the enclosed survey and return it in the reply paid envelope provided. We would appreciate it if you could return the survey by the 30th of September 2003; however please let us know if this presents any problems for you.

If you are the representative of a club or group, could you please ensure that the views of the group are reflected in your response. If any members of your group would like to contribute individually, please ask them to contact Hydro Tasmania to receive information and be added to the mailing list.

In the next stage of the consultation, planned to take place during October and November, Hydro Tasmania staff from our Environmental Services section will be making phone calls and site visits to follow-up on information provided in the surveys.

Thank you for taking the time to consider this survey. If you have any questions or comments, please contact Hydro Tasmania Environmental Services on 03 6230 5899.

Yours sincerely
Hydro Tasmania

Environmental Services Manager

Hydro-Electric Corporation
ARBN 072 377 158 ABN 48 072 377 158

4 Elizabeth Street
Hobart Tasmania 7000

www.hydro.com.au

GPO Box 355D
Hobart Tasmania 7001

Telephone 1300 360 441
Facsimile (03) 6230 5823

DERWENT WATER MANAGEMENT REVIEW ISSUES SURVEY

Name:

NAMES OF HYDRO TASMANIA-AFFECTED WATERWAYS IN THE DERWENT CATCHMENT

Little Pine Lagoon	Bradys Lake	Dee Lagoon
Cluny Lagoon	Lake Binney	Dee River
Shannon Lagoon	Tungatinah Lagoon	Pine Tier Lagoon
Shannon River	Lake St. Clair	Bronte Lagoon
Penstock Lagoon	Lake King William	Wayatinah Lagoon
Lagoon of Islands	Laughing Jack Lagoon	Lake Catagunya
Lake Meadowbank	Lake Liapootah	Lake Repulse
Ouse River	Derwent River	
Lake Echo	Nive River	

These are the storages and waterways that are most directly affected by the Hydro Tasmania's operations in the Derwent catchment. If there are other waterways and infrastructure in this catchment for which you would like to raise issues relevant to Hydro Tasmania's waterway management practices, please feel free to do so.

PLEASE FILL OUT THE FOLLOWING PAGES AS PER THE EXAMPLE BELOW
(use additional pages if needed)

<p>Name of Waterway: <u>PENSTOCK LAGOON</u></p> <p>Pattern of Use: <u>FISHING</u></p> <p>What is your concern or issue? <u>WATER LEVELS</u></p> <p>What is your level of concern? <input type="checkbox"/> Very High <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low <input type="checkbox"/> Very Low</p> <p>How do you believe Hydro Tasmania influences this area of concern? <u>LAKE LEVEL FLUCTUATIONS</u></p> <p>Please list any other influences on this area of concern? <u>THE BOAT RAMP</u></p> <p>Suggested management changes that may address this area of concern: <u>KEEP LAKE LEVELS HIGH AND CONSTRUCT A NEW BOAT RAMP</u></p> <p>Do you have any other additional information or comments related to this issue?</p>
--

111173/MO2/SH

Name of Waterway:.....

Pattern of Use:.....

.....

What is your concern or issue?.....

.....

.....

.....

What is your level of concern? Very High High Moderate Low Very Low

How do you believe Hydro Tasmania influences this area of concern?.....

.....

.....

.....

Please list any other influences on this area of concern?.....

.....

.....

Suggested management changes that may address this area of concern:

.....

.....

.....

Do you have any other additional information or comments related to this issue?.....

.....

.....

.....

CONTACT AND FEEDBACK

HYDRO TASMANIA CONSIDERS CONSULTATION WITH STAKEHOLDERS AN ONGOING PROCESS. IF YOU WISH TO RAISE FURTHER ISSUES OR IF YOU HAVE ANY FEEDBACK ON THIS REPORT PLEASE CONTACT

HYDRO TASMANIA ENVIRONMENTAL SERVICES

03 6230 5899

THIS DOCUMENT CAN ALSO BE VIEWED ON THE HYDRO TASMANIA WEBSITE AT

www.hydro.com.au