

**NATURAL HERITAGE TRUST**  
**Project Final Report**

**Project No.**  
**BG3666.01**

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**Office Use Only**  
**Commonwealth No.**  
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**1. (a) Project Administration**

**Project Title**  
(Use the same title as  
in original project  
application)

**The Impact of land management practices on deep drainage and  
dryland salinity**

**Name Of  
Organisation**

Harden Murrumburrah Landcare Group

**Contact Address**

Harden Shire Council, East Street  
PO Box 145,  
Harden. 2587

**Project Manager**

Louise Hufton

**Ph:**

**63863954**

**Fax:**

**63862083**

**Project Duration**

Actual Start

Month	Year
5	/2002

Actual Finish

Month	Year
10	/2003

**1. (b) Total Project Funding Details**

Please provide information over the life of the project on the actual financial and in-kind contributions of the various stakeholders in the project, as set out below. (in-kind employment contributions, operating costs and capital costs should be calculated according to the application guidelines that you used for your original funding application).

If you have unspent funds or retain assets these will have to be accounted for. Unspent funds should be returned to the Funding Unit, GPO Box 39, Sydney NSW 2001 with cheques made out to the Department of Land and Water Conservation.

**Use form on following page**

# Expenditure Statement

	(a) <b>NHT Funds</b>	(b) <b>Proponent Contribution</b> <small>(funds and in-kind)</small>	(c) <b>Other Contributor 1</b> <small>(funds and in-kind)</small>	(d) <b>Other Contributor 2</b> <small>(funds and in-kind)</small>	<b>Total</b> <small>(a+b+c+d)</small>
<b>INCOME</b> <small>(do not include GST component)</small>					
Funds received Year 1	\$115,071	\$78,100	\$17,600	\$44,000	254,771
Funds received Year 2					
Funds received Year 3					
Funds received Year 4					
* Interest (over \$500) received on banked grant funds					
<b>Total Income</b>	\$115,071	\$78,100	\$17,600	\$44,000	254,771
<b>EXPENDITURE #</b>					
<small>(add to item description as per your application)</small>					
- Paid employment					
- Operating					
- Capital	\$ 115,071		\$ 17,600	\$ 44,000	
- In-kind employment		\$ 78,100			
<b>Total Expenditure</b>	\$ 115,071	\$ 78,100	\$ 17,600	\$ 44,000	254,771
<b>Funds Remaining Unspent</b> <b><i>(Total Income <u>minus</u> Total Expenditure)</i></b>					

\* Under the Project Terms and Conditions any interest earned is to be retained for the project.

# You may need to check your project application for actual expenditure categories.

**2(a). Describe the issues or problems addressed by the project**

Provide a brief summary of the issues or problems that your project tackled, what you did in your project to resolve these and well it worked.

<p>Drought – therefore lack of moisture made installation difficult and delayed.</p> <p>This project has successfully installed an array of instruments on five farms in the Harden and Yass Shire that will indefinitely record the impacts of conventional and changed land-use practices on deep drainage and dryland salinity. The instrumentation consists of soil moisture sensors, rain gauges, data loggers and telemetry. At each farm a data logger and telemetry unit is installed on a fence line that divides two or three paddocks. Communication and power cables run underground to instruments that are buried 15-70 m from the fence line in each paddock. Data on the water use efficiency and deep drainage of the different land uses across the fence line were first recorded in late 2002 and now being relayed to a computer at CSIRO. Prototype web-based applications have been developed to automatically display and distribute data collected from the farms. These applications will allow the public to view the impacts of their land-use practices on water use efficiency and deep drainage for the foreseeable future.</p> <p>Installation of the equipment began in 2002 and was made difficult by the very, dry and hard soil conditions resulting from the drought. CSIRO made use of the dry conditions to delay the deployment of the drainage meters so that the meter can be improved and redesigned. The new meters will be deployed during the winter of 2003. The installation phase of the project will then be complete.</p> <p>The first public meeting has been held in April 2003 to discuss this project. At this meeting farmers, their advisors and CSIRO agreed upon the form and content of the web-based application that will be the main method of informing the community on the future outcomes of this project. These web pages are currently under construction and will be completed by the end of winter 2003.</p> <p>It is anticipated another report will be forwarded when the web site is operational providing you with the details and how to access the data.</p>
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**2(b). Project Performance against objectives/milestones.**

Please provide information on the overall achievements of your project against your planned objectives and milestones. Indicate important achievements you have made in addition to your planned objectives. In some cases you may have had difficulties, or were unable to meet all, or some of your objectives. This should not be regarded as a failure. Please indicate if this has occurred and give an assessment of factors contributing to the difficulties (eg climatic conditions, group dynamics, late arrival of funds, inappropriate planning, local government regulations).

**ACHIEVEMENTS AND IMPEDIMENTS**

What did you set out to do?	Comment on the extent to which your objectives were met.	How did you measure your achievements, eg photos, surveys, attendance at seminars.
Deploy drainage meters in different production systems	Soil moisture sensors, rain gauges, data loggers and telemetry have been successfully installed. Installation of drainage meters have been delayed due to dry hard soil conditions (drought) and redesign but will be installed by end of winter 2003.	Instruments were installed and all functioned to specification.  Improved design of drainage meter.

Monitor the array of instruments for three years	Monitoring began in late 2002 and is continuing.	Data collected and stored
Bring together farmers and researchers to raise awareness of dryland issues.	Researcher Dr Warren Bond from CSIRO has addressed the project participants	Meeting s between farmers and researchers.
Develop links with other projects	CSIRO researcher Dr Warren Bond and ANU researcher Dr Terry Murphy have joined this project for mutual benefit.	Other research projects connected with this project.
Communicate the measurements and project outcomes to community.	Public meetings have been held to discuss project direction. Articles have been published in local newspapers and grower's journals.	Articles written and published. Meetings were held and well attended.
Web site	Delay in installation of drainage meters meant a delay in web site finalisation – anticipated to be operational by October, 2003	

### **Comments from participants in the project.**

The drainage meters have been installed along with equipment needed to carry out automatic measurements. The data that is to be collected will be invaluable in providing information as to water movement below the plant root zone under differing fertiliser/lime grazing treatments on native based perennial pastures.

**Fiona Leech, Extension Agronomist, NSW Agriculture, Yass.**

The Drainage Project will enable Land Managers in the area to determine the amount of water that is leaking into the water table with different land uses. This knowledge will then allow more informed decisions to be made over a micro-catchment on a suitable mix of land uses so as to reduce the amount of water leaking into the ground water system and leading to dry land salinity.

**David Cusack, Mount View, Galong**

Whilst the dry conditions have limited the value of the results to date, I have no doubt that the project will be of immense value to all growers in the district once normal seasonal conditions resume. Especially in relation to warnings re potential leaching of nitrates in crop & subsoil drainage of water & nutrients from under perennial pastures.

**Jim Wright, Agricultural Consultant, Harden District Rural Advisory Service**

The aim of this project was to allow the installation of deep drainage meters at the Binalong ASA site. This gives ASA a linkage to a much bigger Landcare/CSIRO project (funded by NHT) which is monitoring deep drainage under a range of pasture and cropping systems.

As measuring is automated, monitoring of deep drainage will continue over the lifetime of the equipment. This information will be posted publicly on the CSIRO web site.

**Bill Schumman, Extension Officer, Acid Soil Action, NSW Agriculture, Queanbeyan.**

This project is the culmination of a lot of hard work and detailed planning. It allows the use of the latest technology to produce meaningful information on how to maximise our production systems by fully understanding and then utilising available moisture.

**Tony Flanery, Lowlynn, Galong.**

Paul's drainage work is essential, in order to determine water use efficiency, which has been guesswork up until now. Having been associated with his work at the CSIRO site at "Oxton Park" for the last year, I have been able to focus on the drainage effect of individual rainfall events, and the effect crop growth stage has had on these events. Any management decisions that can reduce profile leakage will increase production will benefit the bottom line for both the producer and the environment, particularly relating to salinisation.

**P. O'Connor, Oxton Park, Harden. 2587**

**3(a) On-ground Outputs** (total outputs achieved since the start of the project. Use original application to supply whole of project targets)

**3(b) Other Outputs**

Achievements (product or service)	Description	Quantity	
		Total outputs achieved	Project Target
<b>Education and awareness</b> (including adoption of best management practices)			
Type of publication (report, brochure, book) or activity (demonstration, field day) and topic	Target audience and location	Quantity	
Web site is still to be finalised and consultation for design and community requirements are underway.	Jugiong Creek Catchment but information will be invaluable to the farming community on the south west slopes of NSW>		
<b>Training</b>			
Purpose and type of training activity	Target audience and location	Number of courses/workshops and number of people trained (and target for project)	
Group requirements	Farmers, Harden	1 (to date more will be held once web site is available)	20
<b>Planning</b>			
Name of plan or feasibility study (including project development and marketing strategies) and area of strategy (eg. regional, catchment, subcatchment)	Purpose of plan. Indicate priority issues identified (eg groundwater management, nutrient management, river restoration, salinity, farm forestry feasibility studies etc)	Number published	
<b>Monitoring</b>			
What is being monitored?	How many sites, how often? Indicate major activities undertaken (eg surveying, mapping, soil sampling) and at what stages.	Number of people who participated	
<b>Resource inventory</b>			
Purpose of inventory	Indicate location. How many sites, how often? Is data to be included on Geographical Information Systems?	Area inventoried	

**3(c) Employee Information and Outputs:** Indicate how many salaried staff and/or contract staff were employed in your project, and the length and level of their employment. For each person, indicate the outputs they were responsible for delivering, in order of importance.

	Salaried staff		Contractors or consultants	
	Total achieved	Project Target	Total achieved	Project Target
Number, description, length of employment				
Outputs (in priority order)				

**4. Participation**

How many people have been actively involved in your project

20

Which stakeholder groups have been involved in the project? List major groups who contributed to the technical, practical, financial or administrative aspects of the project, eg community groups, schools, tertiary institute, research organisations, local government, State Government, business, Indigenous groups.

Category	Name of Group	Type of Involvement	Number of Participants
Community Group	Harden Murrumburrah Landcare Group	Provided sites and management of sites once drainage metres have been installed	4
	Binalong Landcare Group	Provided site and management of site	1
	Harden Murrumburrah Landcare Group	Administration	1
Research Organisation	CSIRO – Land & Water	Installation of drainage meters.	
Private Consultants	Chandlers Landmark	Technical support	1
	Harden District Rural Advisory Service	Technical Support	1
DLWC	Cowra & Cootamundra	Technical support	2

## 5. Implementing Regional, Catchment and Local Area Planning

In what way has your project contributed to the development or implementation of a regional strategy or plan?

Jugiong Creek Catchment has been listed as high priority areas for water quality and salinity in the Murrumbidgee Catchment, this project aims to provide a tool that will assist farmers manage water quality & tables in our catchment.

## 6. Use of Project Results

Has your project had any benefits for any other groups? If so, by whom and in what way. How has your project been publicised? Attach copies of media coverage or other publicity. Has acknowledgment been given to the Natural Heritage Trust? If you have a photographic record please provide copies.

This project has received wide publicity to date with copies of some of the newspaper articles attached.

The Condobolin Landcare group has also commenced a project to monitor the impacts of land-use on deep drainage and dryland salinity using the similar approach to the one used in this project.

## 7. Program Administration

Please provide comments on administration of your project and your dealings with relevant government agencies.

No problems occurred in administration.

## 8. Future Action

How is your group planning to maintain the project after funding has ceased?

The site is to be managed by the landowners on whose land the drainage metres have been established. CSIRO will maintain the instruments should there be any technical faults.

Do you intend to seek further Natural Heritage Trust funding, or funding from other sources to undertake further activities?

No, at this stage it is unlikely that any further funding will be sort for this project.

## 9. Group Declaration:

I declare that I am an authorised representative of the recipient organisation, that the information given on this form is complete and correct, and that expenditure of moneys paid under the financial agreement has been solely upon the project and in accordance with the terms of the Agreement and its conditions.

<b>Name (please print)</b>	John McGrath		<b>Name (please print)</b>	LouiseHufton	
<b>Position in Organisation</b>	Chairman	<b>Phone</b> 63821808	<b>Position in Organisation</b>	HMLG Coordinator	<b>Phone</b> 63863954
<b>Signature</b>		<b>Date</b>	<b>Signature</b>		<b>Date</b>

**FORM RETURN**

**The Final Report satisfies the reporting requirements under the Terms and Conditions of the Project Agreement.**

**Please return this form to:**

**Rural Investment Unit, Room 215**  
**Department of Sustainable Natural Resources**  
**GPO Box 39**  
**SYDNEY NSW 2001**

If you have produced a report or data collection as an output of this project please fill out the attached Metadata Entry form.

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# NSW Natural Resources Data Directory Metadata Entry Form

The ANZLIC Metadata Guidelines are available on the internet at [www.anzlic.org.au/asdi/metaelem.htm](http://www.anzlic.org.au/asdi/metaelem.htm)