



Wise Water Ways

**A Short Course in
Stream Management Principles and Practices
27 - 31 October 2002**

Venue: La Trobe University, Beechworth



Natural Resources
and Environment

AGRICULTURE
RESOURCE
CONSERVATION
LAND MANAGEMENT



NORTH EAST
CATCHMENT
MANAGEMENT
AUTHORITY



MURRAY-
DARLING
BASIN
COMMISSION



Creating opportunities together



Presented by
Land and Water Australia
The Wangaratta Centre for Adult Education Inc.
La Trobe University, Earth Tech,
Department of Natural Resources and Environment,
North East Catchment Management Authority
and Murray Darling Basin Commission.

Testimonial

One of the best indicators we have of our skill and wisdom in the management of our natural resources is the condition of our streams. As a report card on our management of catchments, the condition of many streams in most parts of Australia is a sorry one. Fortunately this has been recognised for some time. Governments, industries, communities and individuals are collectively spending hundreds of millions of dollars every year across Australia in stream restoration and rehabilitation works. But mucking around in streams and riparian zones and in catchments to “fix up” the stream or river is rarely straightforward. Considerable understanding, planning and skill is required to maximise the chances of delivering a lasting benefit for the stream and the creatures and communities dependent on it. In Australia we have not been good at learning the lessons from past attempts to rehabilitate streams and we have not always been thorough in ensuring that those undertaking stream works have the necessary understanding and skills. However such understanding and skills, based on very good science, do exist. Workshops such as this one which deliver practical know-how and skills to people at an operational level, play a crucial role in helping to ensure that we get maximum value from our investments in stream rehabilitation.



Andrew Campbell
Chief Executive Officer
Land & Water Australia

Vision

To provide a forum for a comprehensive overview of Stream Rehabilitation and Management Principles and Practices

Aims

An integrated approach to Stream Management: Hydrology, Water Quality, Ecology, Riparian Vegetation, Geomorphology and Rehabilitation Techniques.

To provide extensive "hands on" experience through group assignments.

Background

Following the success of previous years, there has been an enormous demand for another workshop in 2002. The Workshop constitutes a minor "Stream Management Course" and will receive a credit towards the TAFE "Diploma of Natural Resource Management".

Who Should Attend?

The course is aimed at people working in, or who are interested in stream management, particularly those involved in practical natural resource works programs.

The Venue

Beechworth is an ideal location for the Wise Water Ways Workshop due to its proximity to a diverse range of stream management issues. A range of vegetation, macro invertebrates and geomorphic issues provides a number of opportunities for managers to evaluate stream systems.



ACCOMMODATION

Accommodation has been reserved for participants at the La Trobe University Campus at a special rate of \$70.00 per person per night including a continental breakfast. Please complete your accommodation requirements on the registration form.

Program of Activities

Sunday 27/10	Session	Presenter
6.30pm	Arrival	
7.30pm	Why we need floods	Mike Copland Wonga Wetlands

Day One

Monday 28/10	Session	Presenter
8.30 - 9.30am	<p style="text-align: center;">Stream Rehabilitation Concepts</p> <ul style="list-style-type: none"> ● Steps for stream rehabilitation ● Assessment ● Investigations ● Concepts ● Design ● Community consultation ● Prioritisation 	<p style="text-align: center;">Dr Ian Rutherford <i>CRC for Catchment Hydrology</i></p>
9.30 - 12.30pm	<p style="text-align: center;">Stream Assessment Techniques</p> <ul style="list-style-type: none"> ● Introduction to the index of stream condition ● Overview (hydrology, water quality, vegetation, physical condition, macro invertebrates) ● Vegetation assessment technique ● Stream physical condition assessment ● Role of macro invertebrates ● Assessment of water quality ● Phytoplankton and blue green algae 	<p style="text-align: center;">Paul Wilson <i>Waterways Unit DNRE</i> Dr. Roger Croome Dr Phil Suter <i>La Trobe University</i> <i>Albury/Wodonga Campus</i> <i>CRC for Freshwater Ecology</i></p>
12.30 - 1.30pm	<i>LUNCH</i>	
1.30 - 5.30pm	<p style="text-align: center;">Demonstration of Field Data Collection</p> <ul style="list-style-type: none"> ● Field surveys, (level and staff) ● GPS data collectors ● Macro invertebrate sampling ● Vegetation assessment ● Physical condition assessment ● Geomorphology ● Water quality 	<p style="text-align: center;">Rohan Lucas Derek Vogelsang <i>Earth Tech</i> Dr Phil Suter Paul Wilson</p>
6.30 for 7.00pm	<i>DINNER</i> Address	<p style="text-align: center;">Mr Andrew Campbell <i>Chief Executive Officer</i> <i>Land & Water Australia</i></p>

Day Two

Tuesday 29/10	Session	Presenter
8.15 - 9.05am	<p align="center">Catchment Hydrology</p> <ul style="list-style-type: none"> ● Rainfall and runoff ● Flood frequencies ● Estimation of flows ● Stream flow management 	<p align="center">Chris Dwyer <i>Earth Tech</i></p>
9.05 - 10.00am	<p align="center">Catchment Management</p> <ul style="list-style-type: none"> ● An Overview of the "Ovens Catchment" ● Catchment management ● Water quality and catchment condition ● Catchment processes - how they affect stream health 	<p align="center">Rick Felton DNRE - Wangaratta</p>
10.00 - 10.55am	<p align="center">Open Channel Hydraulics</p> <ul style="list-style-type: none"> ● Laminar flow ● Turbulent flow ● Sub critical flow ● Supercritical flow ● Critical depth 	<p align="center">Ross Hardie <i>Earth Tech</i></p>
10.55 - 11.50am	<p align="center">Stream Geomorphology</p> <ul style="list-style-type: none"> ● Channel width, depth, planform, grade and bedform ● Braided streams vs meandering streams ● Factors influencing stream shape and form 	<p align="center">Rohan Lucas <i>Earth Tech</i></p>
11.50 - 12.30pm	<p align="center">Environmental Flows</p> <ul style="list-style-type: none"> ● The water resource allocation ● Importance of environmental flows to wetland health ● Wetland management 	<p align="center">Keith Ward North East Catchment Management Authority</p>
12.30 - 1.00pm	<p><i>LUNCH</i></p>	
1.00 - 5.30pm	<p align="center">Group Assignment</p> <p>Field based stream assessments at group sites</p> <ul style="list-style-type: none"> ● Undertake assessment and management planning ● Longitudinal and cross-sectional surveys ● Macro invertebrate sampling ● Physical condition assessment ● Vegetation analysis 	<p align="center">Split into field groups of approximately 7-10 people</p>
6.30pm	<p align="center">Community Participation in National Resource Management</p>	<p align="center">John Riddiford/Judy Griffiths NECMA</p>
7.00pm	<p><i>DINNER "Life and Work"</i></p>	<p align="center">Mr Mark Murphy</p>

Day Three

Wednesday 30/10	Session	Presenter
8.30 - 9.15am	<p style="text-align: center;">Stream Ecology</p> <ul style="list-style-type: none"> ● Why is ecology important? ● An overview of stream ecology ● Streams as an ecological system ● Survival of various species as an indicator of stream health ● Examples of where and what to look for in streams 	<p style="text-align: center;">Dr. Gerry Quinn <i>Monash University</i> <i>CRC for Freshwater Ecology</i></p>
9.15 - 10.00am	<p style="text-align: center;">Stream Ecology (fish migration and habitat)</p> <ul style="list-style-type: none"> ● Fish habitat requirements ● Fish migration triggers and patterns ● Management of fish ecology - flows, habitat, water quality, barriers 	<p style="text-align: center;">Dr. Paul Humphries Murray Darling Freshwater Research Centre CRC for Freshwater Ecology</p>
10.00 - 11.30am	<p style="text-align: center;">Riparian Vegetation</p> <ul style="list-style-type: none"> ● Components of riparian vegetation ● Importance of riparian vegetation ● Types of vegetation ● Management of riparian vegetation ● Practical revegetation techniques 	<p style="text-align: center;">Dr Judy Frankenberg Ecology-Consultant</p>
11.30 - 12.15pm	<p style="text-align: center;">Willows</p> <ul style="list-style-type: none"> ● Ecology and propagation ● Methods of dispersal ● Management and control strategies ● Identification of species 	<p style="text-align: center;">Geoff Carr Ecology Australia</p>
12.15 - 12.45pm	<i>LUNCH</i>	
12.45 - 2.00pm	<p style="text-align: center;">Stream Channel Management</p> <ul style="list-style-type: none"> ● Replicating natural systems ● Work with stream processes ● Grade control structures ● Sediment stabilisation 	<p style="text-align: center;">Ross Hardie Earth Tech</p>

Day Three cont.

Wednesday 30/10	Session	Presenter
2.00 - 2.45pm	Field projects and construction works <ul style="list-style-type: none"> • Structural works when to do, when not to do • Willow management-friends and foes? • Successful implementation of works challenged by agricultural land use 	Terry McCormack North East Catchment Management Authority
2.45 - 6.30pm	Group Work <ul style="list-style-type: none"> • Preparation of group projects 	
6.30 for 7.00pm	<i>DINNER</i>	
8.00-10.00pm	Presentation of Group Projects	

Day Four

Thursday 31/10	Session	Presenter
8.45-12.45pm	Site Visit - Ovens Catchment, structural works, revegetation and willows	Chris Dwyer Geoff Carr Terry McCormack
12.30pm	<i>LUNCH / FINISH</i>	

Registration Form

A. PARTICIPANT

Name:

Position:

Organisation:

Address:

..... Postcode

Phone(B): (H):

Fax:

Email:

To register for the workshop or attend certain days please complete the registration on the following page and forward it to

Lachlan Campbell
The Centre, Chisholm Street
Wangaratta 3677
Fax: (03) 5721 9994

B. REGISTRATION FEES (by 18 October 2002)

Full Conference Fee
includes morning teas, lunches, dinners \$528

Day Fee
includes morning tea, lunch \$181

Day attending:

Mon. Tues. Wed. Thurs.

Dinner:

Mon. Tues. Wed. \$40

C. ACCOMMODATION

Full accommodation \$280

Per night x \$70.00 x No. of nights Total

Check in date.....

Check out date.....

TOTAL
(GST Inclusive)

NB. Invoices may be raised for payment if required.

Cheque/Money Order made payable to "The Centre"

Bankcard Visa MasterCard

_____/_____/_____/_____
Expiry Date: ____ / ____

Cardholder's Name:

Cardholder's Signature:

We would like to thank the following principal sponsors:



Wise Water Ways



A Stream Rehabilitation Workshop

For further information contact:

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