



NORTH EAST
CATCHMENT
MANAGEMENT
AUTHORITY



Department of
Environment and
Primary Industries

JACOBS



Charles Sturt
University



LA TROBE
UNIVERSITY



WATER TECHNOLOGY
WATER, SOILS, & ENVIRONMENTAL CONSULTANTS

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RBMS

Integrating Catchment Management for Australia



The Murray-Darling
Freshwater
Research Centre



WISEwaterways

A Workshop in
Stream Management Principles and Practices

27 - 31 October 2014

Venue: George Kerferd Hotel, Beechworth

Presented by

North East Catchment Management Authority
Department of Environment and Primary Industries

Jacobs

La Trobe University

River Basin Management Society

Alluvium Consulting Pty Ltd

Charles Sturt University

Water Technology

The Murray-Darling Freshwater Research Centre

Testimonial: Emeritus Professor Sam Lake AO

The Challenge of Ecological Restoration: Into the Vale of Streams

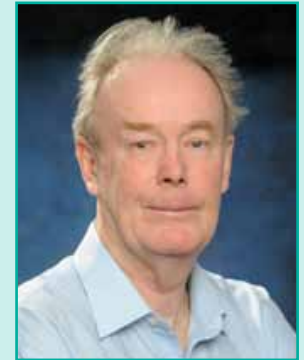
Professor Sam Lake is one of Australia's leading freshwater ecologists, and has been honoured with international and national awards for his research and other contributions to aquatic science.

His Honours thesis at the Australian National University showed that heavy metal contamination by mining severely affected the invertebrate fauna of the Molonglo River, Canberra, - a situation that persists to this day, exemplifying an irreversible press disturbance. He then won a prestigious scholarship to do a PhD at the University of Southampton on the structure of the neurosecretory system of fairy shrimps, before moving to the University of Tasmania to teach invertebrate biology and continue work on neuroendocrine systems in arthropods. Following a request from Dan Lynch of the Inland Fisheries Commission, he returned to ecology, engaging in research on heavy metal contamination of Tasmanian rivers such as the South Esk River. The return to ecology coincided with the controversy over the flooding of Lake Pedder, a struggle in which he became closely involved. Although the struggle was lost, it served to prepare conservationists for the struggle over the proposed Gordon below Franklin Dam.

In 1976, Sam moved to Monash University to lecture in ecology and limnology. At that time in Australia, lakes were the principal focus of limnological research and the few stream studies focused on pollution. Thus, Sam decided to research the structure and function of intact upland streams, soon becoming internationally recognized for his important insights into the role of disturbances at multiple scales on invertebrate ecology and stream function. For the next two decades, he mentored and co-published with an ever-changing consortium of academics, museum curators, post-docs, postgraduates, undergraduates, research assistants and conscripted friends and relatives, working on invertebrate assemblage structure, function, distribution and responses to disturbance in the Acheron and Lerderderg Rivers near Victoria.

Then, one dark and stormy winter night, Sam was approached by Professor Peter Cullen to join the planned CRC for Freshwater Ecology. In spite of being proposed in a crippling drought, the initial bid was unsuccessful. However, the second one, largely pushing environmental flows, succeeded. In the CRC, Sam directed Program 1 on the Ecology of Flowing Waters, continuing his Acheron work along with other "blue sky" research such as nutrient spiralling, decomposition, metabolism, and responses to disturbance. While the basic research continued, Sam was persuaded to enter the then-new area of restoration ecology of streams, focusing on the Granite Creeks system in central Victoria. So, a joint project with the CRC for Catchment Hydrology, and with invaluable support by the Goulburn-Broken CMA, was initiated. This alliance worked well, despite the onset of the severe "Millennium" drought which partly prevented successful ecological recovery of the sand-slugged restoration sites. However, the program led the research group into the difficult area of restoration ecology, where the use of environmental flows and riparian zone restoration have yielded some successes and some non-events.

In "retirement", Sam continues the struggle of furthering the ecological restoration of streams, along with research on the impacts to and responses of stream biota to droughts and other extreme events (both single and compound).



**Emeritus Professor
Sam Lake AO**
Monash University

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

In the fifteen years that the Workshop has been running, some 765 participants have completed the program. The program has evolved over this time, reflecting the issues faced by water managers of today. Wise Water Ways is supported by the water industry. The program features speakers who are leaders in their field. On completion of the Workshop participants will receive a subject credit towards either Charles Sturt University's Graduate Certificate in River Restoration or Master of Water Resource Management. For more information go to: <http://www.csu.edu.au/faculty/science/ses/courses> or contact Matthew Hunt E: envirosience@csu.edu.au T: 02 6051 9651.

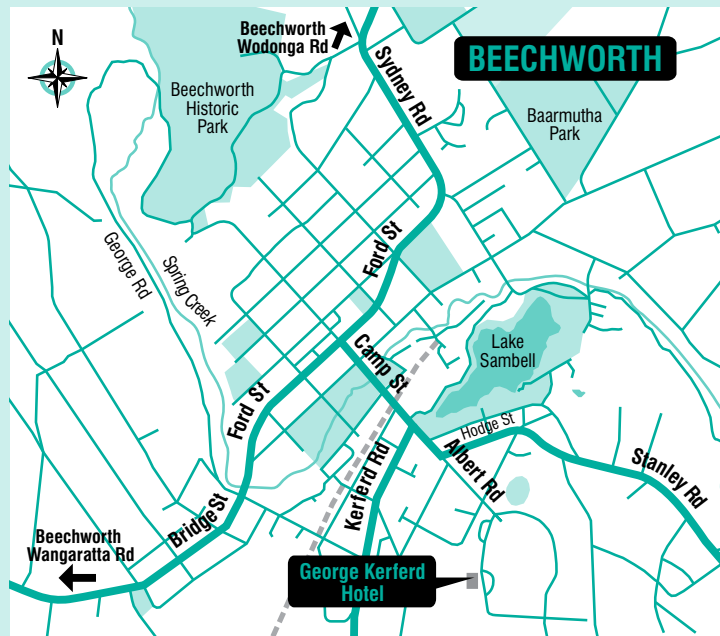
Who Should Attend?

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 Region / Travel

Beechworth is situated in North East Victoria. It is approximately 3 hours drive from Melbourne. The nearest airport is Albury Airport (30 minutes drive). Hire cars are available from both airports and transfers from Albury Airport are either by Border Shuttle Bus or taxis. Beechworth is an ideal location for Wise Water Ways. Diverse vegetation, macro-invertebrates and geomorphic issues in the area provide a number of opportunities for managers to evaluate stream systems.

www.wisewaterways.org.au



Accommodation

Accommodation has been reserved for participants at The George Kerferd Hotel, Beechworth.

Special rates have been organised. They range from a single occupancy room - \$110.00 per room per night to shared rooms at \$180.00 per room per night. The rates include a fully cooked breakfast.

Please contact the secretariat via email: nemeet@bigpond.com to explore options before completing the registration form at the back of this brochure.

Program of Activities

Sessions		Presenter
Monday 27/10	Day One	Introduction to Stream Management
12.30 – 12.45pm	Program and Assessment	Dr Andrew Boulton <i>Adjunct Professor, UNE</i>
12.45 – 2.30pm	Stream Rehabilitation Concepts <ul style="list-style-type: none"> • Steps for stream rehabilitation • Assessment • Investigations • Concepts • Design • Community consultation • Prioritisation 	Dr Ian Rutherford <i>Associate Professor, University of Melbourne</i>
2.30 – 3.00pm	Afternoon Tea	
3.00 – 5.45pm	Riparian Vegetation Field Demonstration	Paul Wilson <i>Office of Water DEPI</i> Jamie Kaye <i>Water Technology</i>
7.00pm	Emeritus Professor Sam Lake AO <ul style="list-style-type: none"> • The Challenge of Ecological Restoration: Into the Vale of Streams 	Emeritus Professor Sam Lake AO <i>Monash University</i>
Tuesday 28/10	Day Two	Assessment Techniques
8.30 – 9.00am	National River Health Strategy <ul style="list-style-type: none"> • Policy - context, priorities 	Paul Wilson <i>Office of Water DEPI</i>
9.00 – 12.30pm	Stream Assessment Techniques <ul style="list-style-type: none"> • Introduction and overview • Assessment of hydrology, vegetation and physical condition • Role of macro-invertebrates • Water quality 	Paul Wilson Associate Professor Ewen Silvester <i>La Trobe University Albury Wodonga Campus</i> Dr Phil Suter

Program of Activities

12.30 – 1.30pm	Lunch	
1.30 – 5.30pm	Demonstration of Field Data Collection <ul style="list-style-type: none"> • Field surveys (level and staff) • Macro-invertebrate sampling • Vegetation assessment • Physical condition assessment 	Paul Wilson Chris Dwyer <i>Jacobs</i> Phil Suter
6.45pm	Assessment Requirements	Dr Andrew Boulton
7.00pm	Dinner and Entertainment	
Wednesday 29/10	Day Three	Processes
8.30 – 9.10am	Stream Ecology <ul style="list-style-type: none"> • Why is ecology important? • Streams as ecological systems • Indicators of stream health 	Professor Gerry Quinn <i>Chair in Marine Biology</i> <i>Deakin University</i> <i>Warrnambool Campus</i>
9.10 – 9.50am	Fish Habitat <ul style="list-style-type: none"> • Fish ecology - flows, habitat, water quality, barriers, large woody debris • Fish migration triggers and patterns 	Dr Jarod Lyon <i>Arthur Rylah Institute for</i> <i>Environmental Research DEPI</i>
9.50 – 10.15am	Morning Tea	
10.15 – 12.20pm	Managing Channel / River Change in Geomorphic Context / Hydraulic Modelling <ul style="list-style-type: none"> • Open channel hydraulics • Stream geomorphology • Horses for Courses - examples of different applications of hydraulic models 	Dr Peter Sandercock <i>Jacobs</i> Dr Tony Ladson <i>Moroka Consulting</i> Ben Tate <i>Water Technology</i>

Program of Activities

12.20 – 1.00pm	Environmental Flows <ul style="list-style-type: none"> • Water resource allocation • Environmental flows importance and assessment methodology • Streamflow management 	Dr Geoff Vietz <i>Department of Environmental Engineering The University of Melbourne</i>
1.00 – 1.15pm	Briefing on Field Work	Dr Andrew Boulton
1.15 – 2.00pm	Lunch	
2.00 – 5.30pm	Project Data Collection and Write-up / Field Work	
	Free Evening	
Thursday 30/10	Day Four	Rehabilitation Techniques
8.30 – 9.10am	Riparian Vegetation <ul style="list-style-type: none"> • The role of filter strips, organic carbon, shading, biodiversity and revegetation • Components and importance of riparian vegetation • Vegetation management and revegetation techniques • Ecological vegetation communities 	Jane Roots <i>School of Environmental Sciences Charles Sturt University</i>
9.10 – 9.55am	Willows/Exotic Trees <ul style="list-style-type: none"> • Identification and reproduction • Ecology, dispersal and management issues • Control techniques • Rehabilitation 	Andrew Briggs <i>North East Catchment Management Authority</i>
9.55 – 10.25am	Morning tea	
10.25 – 12.00pm	Stream Channel Management <ul style="list-style-type: none"> • Replicating natural systems • Working with stream processes • Grade control structures • Sediment stabilisation 	Ross Hardie <i>Alluvium Consulting Pty Ltd</i>
12.00 – 12.45pm	Lunch	

Program of Activities

12.45 – 1.30pm	Field Projects and Construction Works Works. What works?	Terry McCormack, Andrew Briggs <i>North East Catchment Management Authority</i>
1.30 – 5.30pm	Preparation of project reports	
6.30 – 7.30pm	Dinner	
8.00 – 10.00pm	Presentations of Group Projects	
Friday 31/10	Day Five	Field Visit
8.45 – 12.30pm	Field Visit to Ovens Catchment <ul style="list-style-type: none"> • View structural works • Revegetation and willow management 	Chris Dwyer, Terry McCormack, Andrew Briggs
12.30pm	Lunch on the Run	

Details are correct at time of program production, although may be subject to change.

Registration Form (Return by 13 October 2014)

A. PARTICIPANT

Title: Dr Mr Mrs Ms

Name:

Position:

Organisation:

Address:

..... Postcode

Phone(B): Mobile:

Email:

Special Dietary Requirements:

Privacy - I give permission for my details to be disclosed (no tick will be taken as yes) Yes No

To register for the workshop please complete the registration on the following page and forward / scan it to:

Wise Water Ways
PO Box 645, Wangaratta VIC 3676
Email: nemeet@bigpond.com
www.wisewaterways.org.au

Contact Virginia Eckels
Tel: 0408 109 707



B. REGISTRATION FEES (by 13 October 2014)

Tax Invoice - Wise Water Ways Workshop ABN 67 721 867 449

Full Workshop Fee includes morning teas, lunches, dinners (excluding Wed), annual subscription to RBMS

\$990
(GST Inclusive)

I would like more information about the RBMS?

For Members of the River Basin Management Society (RBMS)

\$952
(GST Inclusive)

C. ACCOMMODATION

(includes fully cooked breakfast)

Hotel Double Room

Single - \$110.00 per room per night (GST inclusive)

Hotel King Room

Single (larger room) - \$120.00 per room per night (GST inclusive)

Linaker (art deco inspired suites)

Single - \$140.00 per room per night (GST inclusive)

Linaker - twin share (art deco inspired suites)

Sleeps up to 2 - \$180.00 per room per night (GST inclusive)

Sharing with:

.....

TOTAL

Check in date / Check out date / GST Inclusive

Method of payment

cheque enclosed EFT

If invoice required please complete the following:

Purchase Order No:

Billing Address:

.....

.....

.....

If paying by cheque make payable to:
Wise Water Ways Workshop

Cancellation Policy: Full refund less 20% if advised 5 days prior to the Workshop

EFT payment Bank: Bendigo Bank
BSB: 633-000
Acc: 141 820 498

Please ensure you email details of your EFT payment and use your surname / organization as your reference. If EFT advice is not received then payment may not be associated with your registrations - and your registrations may not be processed.

Forward registration form and cheque to:

NECEP, Wise Water Ways Secretariat, PO Box 645,
WANGARATTA VIC 3676

www.wisewaterways.org.au

We would like to thank the following partners:



NORTH EAST
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Integrating Catchment Management for Australia



WISEwaterways

A Stream Rehabilitation Workshop

For further information contact:

Virginia Eckels, North East Conference and Event Planners

Tel: 0408 109 707 or Email: nemeet@bigpond.com

www.wisewaterways.org.au

