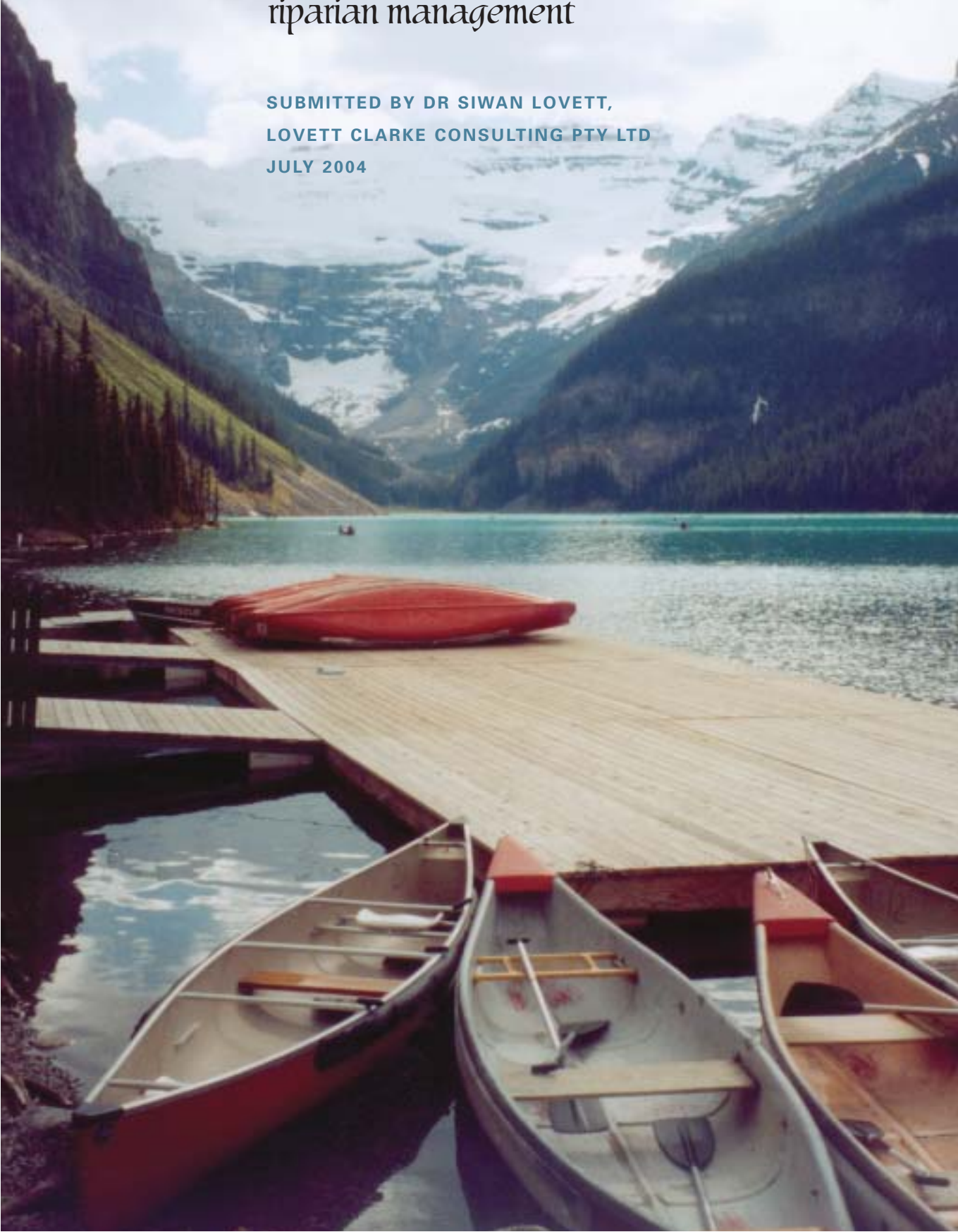




SIW4: FINAL REPORT — CANADIAN TRAVELLING FELLOWSHIP

*Capacity building and knowledge exchange  
methods for community-based river and  
riparian management*

SUBMITTED BY DR SIWAN LOVETT,  
LOVETT CLARKE CONSULTING PTY LTD  
JULY 2004





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# LOVETT CLARKE CONSULTING

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Johnston Canyon,  
Rocky Mountains



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**The research team: Siwan, Tom and Finn at Lake Louise Ski Fields, Banff National Park**



## Report synopsis

In 2001, Lovett Clarke Consulting Pty Ltd was awarded a travelling fellowship by Land & Water Australia for Dr Siwan Lovett to study capacity building and knowledge exchange methods for community-based river and riparian management in Canada, Denmark and the United Kingdom. Due to changing circumstances, the fellowship was postponed to June 2004, with a decision made to focus on one country in depth, so that a more detailed analysis could be undertaken and networks established with river-related agencies in Canada. The trip involved travel to the Provinces of British Columbia, Ontario and Alberta, with visits made to a range of organisations involved in river and riparian management. Dr Lovett also attended the 4th Canadian River Heritage Conference and gave a presentation on work being undertaken in Australia on capacity building. This report brings together the results of the trip with an executive summary introducing readers to the content of the report by comparing and contrasting Canadian and Australian approaches to capacity building and knowledge exchange. The executive summary is supported by an introduction, key findings, in-depth ‘snapshots’ of organisations and ideas that Australia can learn and benefit from and, finally, suggestions as to how the findings from the trip can be developed into products and events that will benefit those involved in river restoration across Australia. @@



## Executive summary

The terms ‘capacity building’ and ‘knowledge exchange’ have become part of the vernacular of river restoration and management. They are umbrella terms that are used to describe a range of ideas and activities that generally aim to assist communities engage with, and become informed about, their river and surrounds. The quest to find out how best to engage communities is one that Australian research and government agencies are examining, as resource constraints mean that only the most effective and proven strategies are worth funding. Studying another country’s approach to the same issue enables new perspectives to be gained, as well as providing opportunities to import new ideas and adapt them to local environments. In this case, Canadian approaches to capacity building and knowledge exchange are examined, and ideas put forward about how the experience of another country can inform and improve the work being undertaken in Australia.

In Canada, the value of taking time to build and cement relationships is a given. Canadian river restoration operates at the grass roots level to engage people locally, without demanding that they take a broader watershed view. The act of being involved is seen as enough of a contribution. This means that there are high levels of local engagement and ‘feel good’ factor in Canadian communities, particularly when this is consolidated with the designation of their river to a nationally recognised initiative such as the Canadian Heritage River System. Communities are encouraged to celebrate and connect with their river, and as most people in Canada holiday along a lake or river shoreline, this is something that is more easily achieved than in Australia where people tend to take their breaks at the coast. Poetry, art, drama and history are all acknowledged by agencies involved in river restoration and management as ways people can ‘know’ a river. The term ‘heritage’ is used to cover these other ways of ‘knowing’, with the natural assets of a river often not explicitly recognised, but rather viewed as the foundation upon which culture and history have developed in relationship to that waterway. The canoe has become an iconic symbol for people’s connection with their waterways, and is used as a powerful marketing tool by private and public organisations alike, to promote the positive associations people have with their river.

Canadian communities are not asked to take on responsibility for their river and watershed but instead are encouraged to take an interest in their part of the river. The sense of urgency that pervades river restoration in Australia is not present in Canada. Restoration activities are ‘place based’, generally short-term and well resourced, with the staff managing the project tending to be permanent employees of a locally based agency. A range of different government and non-government agencies provide opportunities for people to get involved in river restoration, with most projects focusing





## EXECUTIVE SUMMARY

on specific interests such as the provision of fish habitat or wildlife protection. Incentive programs are well-funded so that changes to improve water quality, for example fencing out of stock, can be undertaken at little or no cost to the farmer involved. The act of establishing a relationship with a person or group is the basis upon which strategies and techniques are jointly developed to enable knowledge exchange and capacity building to occur.

Monitoring and evaluation is not well developed, with most community based river restoration projects using observation and photographic records to chart progress over time. The involvement of scientists in community based activities is uncommon, with most technical input coming from the agency managing the project and dependent upon the skills they have available at the time. Collaboration between Federal, Provincial and Municipal government and non-government agencies is patchy, and when it does occur, it seems to be the result of informal rather than formal relationships. Each agency working in a watershed has a separate natural resources management plan, with no shared inter-agency plan or vision for the area. This means that duplication can occur, as well as agencies competing with each other for resources and community involvement.

In contrast, Australian communities are being asked to take on increasingly more responsibility for river management and restoration, with economic, social and environmental implications having to be considered within complex decision making frameworks. Getting involved locally can often result in a large number of meetings, confronting competing interests and developing plans for a catchment that look far into the future. The deleterious state of many of Australia's rivers and their importance to the survival of rural and, increasingly, urban communities, means that decisions about water are weighty and difficult to make. Ultimately, those involved in the Australian process learn more about how their catchment works, what the impact of upstream and downstream uses are having on their river, what the future might look like under different scenarios, and how they can be involved in decision making processes. However, this level of involvement can only be achieved if the people involved can withstand the rigours of the process and are keen to participate in formal, often bureaucratic approaches to decision making. Further, the mixed messages from the agencies involved, changes in institutional arrangements and temporary staff that has characterised catchment planning and management in Australia for the past ten years, has made it much harder for community volunteers to maintain enthusiasm and commitment to the process.



There seems to be less time in Australia for celebration, fun and enjoyment, with the corollary of this being fewer people involved in natural resources management activities, as they appeal to a much narrower sector of the community and have a strong environmental flavour. ‘Technical’ and ‘rational’ ways of knowing a river are more highly valued in Australia than art, poetry and culture. Forays into connecting with our rivers through literature and music are often well supported by local communities, but not necessarily by the agencies that manage the decision making processes governing how a river will be managed for the future. The small group of scientists working in river restoration are being placed in increasingly difficult situations, as they are expected to provide definitive answers to complex and inherently unpredictable river processes. Water and its management is at the forefront of people’s minds in Australia, whereas in Canada it is a resource that has unregulated access (licence for a pump but no restriction on quantity), and is more closely associated with history, culture and recreational opportunities (particularly fishing and canoeing) than survival.

In Australia, river restoration and management has become a well-developed discipline and there are resources based on sound technical knowledge that communities can use to inform their decision making processes. In contrast to Canada, monitoring and evaluation is becoming a necessary and vital part of any restoration project, and although not well developed in the past, it is now becoming more sophisticated as groups recognise the need to assess whether their actions are having any impact on the problem being addressed. Recent government initiatives to deliver natural resources management at the regional level will enable joint visions for catchments to be shared by all agencies involved, in theory leading to an institutionally stable and coordinated approach to catchment management.

These generalisations about Canada and Australia serve to highlight the strengths and weaknesses of their different approaches to river restoration. Interestingly, the strengths of one country are the weaknesses of the other, creating ample opportunity for learning from each other. Ideally, river restoration needs to be inclusive, celebratory and stable, yet also institutionally cooperative and scientifically rigorous. Canada’s strengths are in engaging communities, initiating action, celebrating, and using art, culture, history and drama as ways of ‘knowing’ a river. Examples of these strengths are outlined in this report and recommendations made about how they can be applied to the Australian context. Australia’s strengths are technical rigour, a greater level of institutional coordination and a more informed community that is involved in strategic decision making for the long-term sustainability of their catchment. By combining these strengths and investing in relationships between key organisations in each country, the foundations can be set for future cooperation and improved river restoration and management outcomes.@@



# Introduction and overview of milestone report requirements

In 2001, Lovett Clarke Consulting Pty Ltd was awarded a travelling fellowship by Land & Water Australia for Dr Siwan Lovett to study capacity building and knowledge exchange methods for community-based river and riparian management in Canada, Denmark and the United Kingdom. Due to changing circumstances, the fellowship was postponed to June 2004, with a decision made to focus on one country in depth, so that a more detailed analysis could be undertaken and networks established with river-related agencies in Canada. The trip involved travel to the provinces of British Columbia, Ontario and Alberta, with visits made to a range of organisations involved in river and riparian management, as well as attendance at the 4th Canadian River Heritage Conference where a presentation on work being undertaken in Australia on capacity building was given by Dr Lovett.

The objectives of the travelling fellowship were as follows:

1. To compare and contrast different institutional structures being used in Canada for land and water management (focusing on river and riparian lands) and benchmark Australian arrangements against them, thus identifying opportunities for R&D and action by Land & Water Australia.
2. To examine capacity building and knowledge exchange strategies being used overseas and assess applicability and practical requirements for use in Australia.
3. To promote the work of Land & Water Australia and establish ongoing strategic linkages with international organisations. @@



## Achievement criteria

The achievement criteria for the travelling fellowship objectives are:

- ▶ Submission of Final Report to Land & Water Australia staff and the National Rivers Consortium Board outlining key issues examined, benchmarking Australia against overseas experience, and recommending capacity building and knowledge exchange strategies to be implemented through the Rivers Arena and other Land & Water Australia activities. The Final Report is to include details of other deliverables from the project, as agreed with the Rivers R&D Manager upon return from the trip. These may include:
  - Production of a Rivers Arena *Technical Update* or *Fact Sheet* on capacity building and knowledge exchange strategies and how they can overcome impediments to improved river and riparian management.
  - Presentations at relevant workshops and conferences on findings or research work and its applicability to the Australian context.
  - Special edition of *RipRap* on Capacity Building and Knowledge Exchange.
  - Incorporation of research findings into *Riparian Management Research Issue 11* — ‘Overcoming impediments to implementation of improved riparian management practices’ and development of associated materials.
  - Convene a conference on capacity building and knowledge exchange.
  - Promotion of Land & Water Australia internationally and establishment of ongoing, strategic links with overseas agencies.

This Final Report addresses these achievement criteria, and provides a range of ideas and suggestions about how Land & Water Australia staff, and more particularly the Rivers Arena team, can learn from the Canadian experience to improve approaches to capacity building and knowledge exchange for river and riparian management. ☺☺



## Key findings

### Watershed management

- ▶ Watershed management in Canada involves Federal, Provincial and Municipal levels of government. Each province has developed different institutional arrangements for managing natural resources, with coordination between levels of government patchy and reliant on informal rather than formal engagement processes. Considerable interest was shown in the Australian model where Commonwealth, State and regional organisations are now working more closely together to deliver coordinated natural resources management outcomes.
- ▶ Watersheds in Canada have several different government and non-government organisations working within them on river related issues. There is no single watershed plan to which all these organisations refer, rather, they each follow their own. Joint activities tend to be on a project by project basis, and largely dependent on informal relationships between the people involved, rather than through any formal inter-organisational agreements.

### Capacity building

- ▶ ‘Capacity building’ is a recognised term in Canada and covers a range of different activities. There has been a shift in government from funding specific short-term programs labelled ‘capacity building’, to approaches that focus on establishing relationships and networks that are trusted, and within which community capacity building can occur. Most people working in the area of ‘capacity building’ are either permanent government employees operating within a locally based natural resources management agency and responsible for extension and outreach programs in their region, or consultants paid to run a specific extension activity. As such, capacity building is not singled out, but rather, incorporated into the more general work of engaging communities in natural resources management.

### Community engagement

- ▶ Canada has several good examples of outreach and extension programs that engage people in protecting and restoring rivers. The strength of these programs is in their longevity (often been running for over ten years), consistency in message and the staff delivering that message; their ability to interest and engage people with their local river or stream, and extension materials that are easy to understand and connect with by people from a non-scientific background (see ‘snapshots’ on Cows and Fish, Pacific Streamkeepers Federation, Living by Water).



- ▶ Initiatives such as the Canadian River Heritage System, Canada Rivers Day and Yellow Fish Road (see ‘snapshots’ for details) are fine examples of how to engage different sectors of the community into river restoration. The strengths of these programs are that they focus on achieving a specific river related outcome (be it designation as a Canadian heritage river, celebration of rivers as special places, raising awareness about what goes down stormwater drains etc.) and provide clear, well resourced guidelines on how to get there. They are also developed with people in mind, so emphasis is placed on fun, working together and generally having a good time.
- ▶ History, art, drama, poetry and song are all highly valued as ways people can understand and relate to rivers. The canoe has become an iconic symbol for people’s connection to rivers and many Canadians spend time paddling along their local river. This recreational, and often spiritual connection, enables people who do not necessarily have an ‘environmental’ interest to get involved in river restoration. Recognition is also given to the many different ways people can ‘know’ a river, and in many cases recreation, heritage and cultural values appear to outweigh any environmental assets a river may possess.
- ▶ There are considerable strengths in Canadian approaches to engaging communities, as value is placed on developing and maintaining relationships and the ‘human’ element in river management is recognised by those agencies involved as crucial for on-ground change. The emphasis is on ‘place-based’ river restoration activities, where people can get involved in local activities that directly affect them. In general, river restoration activities tend to focus on fish protection, habitat creation and restocking.
- ▶ On-farm river restoration activities focus on protecting or improving water quality with fencing out stock from waterways, providing alternate stock watering options, stock crossing points and managing effluent on-farm, key areas of activity. A range of incentives are available, with the work able to be undertaken at little or no cost to the farmer. Compensation is also paid to the farmer for up to three years in recognition of loss of land from production. Most of the incentives are paid for through a variety of municipal funded rural water quality programs.
- ▶ First Nations inclusion in river management is increasing, with many rivers running through First Nation land. Working with First Nation groups is seen as an important government activity. Staff working with First Nations are well-resourced, as the importance of taking time to build relationships and present information in ways that make it accessible, is viewed as fundamental to securing long-term indigenous engagement.



## Knowledge exchange

- ▶ In Canada, knowledge exchange is not viewed as a topic that necessarily requires ‘innovative’ strategies, as the experience of those working with communities has confirmed that the best way to exchange information and build capacity is to establish long-term, well resourced relationships between all involved. The time it takes for someone to change their behaviour is between three to five years, and most programs working with communities are funded over long time periods so that this change can be achieved. In some instances, government will fund a non-government agency that has an established relationship (e.g. Cows and Fish) to deliver a program, as it is more effective than trying to introduce new people and organisations into local communities.
- ▶ Non-government organisations play a significant role in capacity building and knowledge exchange, as well as leading debate on issues such as the development of a natural resources management strategy for Canada. These organisations engage communities in river restoration activities, as well as independently funding science on issues that relate to their area of concern (e.g. Trout Unlimited Canada). They are well organised and professional organisations that are often looked to by government to deliver programs.
- ▶ Conservation marketing is an emerging discipline in Canada and builds on the lessons learnt by people working with communities to change attitudes and behaviour towards river protection and restoration. It is being taught to those working in government as a way of more effectively communicating messages about how to raise awareness and work towards improved management of natural resources (see ‘snapshot’ on Living by Water for more details).

## Role of science

- ▶ The role of science in river restoration is highly variable. Government scientists are employed in mainline departments such as the Fisheries and Oceans Department (in decreasing numbers), but do not seem to play a key role in determining the design and implementation of community-based projects. Non-government organisations also fund science, for example, Trout Unlimited Canada, with these projects specialising in fish habitat, health and population. Overall, the role of science in underpinning community-based river restoration activities is not well developed.
- ▶ There is little emphasis placed on the connection between small-scale restoration activities and watershed condition as a whole. This is left to those working in natural resources management agencies to cover, with little input from the general community into broader watershed decision making processes.



## KEY FINDINGS

- ▶ Monitoring and evaluation is not well developed in Canadian natural resources management agencies or in community based river restoration. In general, formal monitoring does not occur prior to, during, or after a restoration activity. Observation and photographic records are the main ways change over time are documented.
- ▶ Water-use efficiency is a concept that Canadians are starting to examine, with recent water restrictions in British Columbia a surprise for urban dwellers in Vancouver. Access to water is largely unregulated across Canada. A licence is required to operate a pump, however, there are no restrictions on the quantity of water that can be taken from the river or stream. Water availability is becoming an issue in those parts of Canada that do not rely on lake-based supplies. Given the amount of work that has been done in Australia on the topic of water-use efficiency, this was an area identified by Canadian resource managers as one where an ongoing relationship with Land & Water Australia would be beneficial. @@





## Snapshots in Canadian capacity building and knowledge exchange for river and riparian restoration

### The Pacific Streamkeepers Federation

A non-profit society helping streamkeepers take action through support, education, and building partnerships



**The Pacific Streamkeepers Federation** (PSkF) was initiated in May 1995, and is a non-profit society committed to supporting community groups involved in Streamkeepers activities throughout British Columbia and the Yukon. It is a community engagement program with an active and vibrant network of people committed to its cause. It has received funding from government for ten years (annually renewable contract), and is likely to continue to do so in the future.

The program covers different aspects of stream management from awareness raising about what a healthy stream looks like, through to training on restocking and identifying different fish species. A manual supports the program and is used to deliver training courses to local communities. The focus is largely on stream management and fish (salmonids), with restoration primarily concerned with habitat protection and creation for fish, restocking, stock assessment and raising awareness about fish related environmental issues. PSkF believe that people are better able to engage in environmental activities when they have one thing to focus on, and fish provide this focus. Volunteers seeing fish return to their streams to spawn is a powerful motivator for action and their continued involvement in protection and maintenance programs.

To date, 3500 people have been through the Streamkeepers training course, and many more have been involved in awareness raising days and local activities on rivers. Streamkeepers are skilled at using a range of different techniques for getting people involved — barbeques, signage, ortho-images of streams so that people can see where they live in relation to their stream, etc. They tap into community interest and pitch their message so that it has traction amongst the host of other issues that a community is concerned with. Their success is in engaging good local people, who know their community and how it ‘ticks’ and who can sell their message in ways that make it relevant and meaningful to that community. The program also has strong support by government, with its duration making it another key linking or intermediary mechanism in the local communities where it is operating.

### More information

<http://www.pskf.ca>

### Discussion

Government departments in British Columbia support Pacific Streamkeepers Federation financially, and use it as a vehicle for accessing and supporting communities. Land & Water Australia could build on this model to more actively pursue links with non-government organisations such as recreational fisher groups. LWA would need to commit staff resources to actively pursuing this, as interaction would need to be based on a long-term and lasting relationship. @@



**The Canadian Heritage Rivers System (CHRS)** was established in 1984 by the Federal and Provincial governments to conserve and protect the best examples of Canada's river heritage, to give them national recognition, and to encourage the public to enjoy and appreciate them. It is a cooperative program of the governments of Canada, all 10 provinces, and the three territories. A 15-member national Board administers the program. This Board is made up of private citizens and senior officials from government departments responsible for the protection of the Canadian environment.

The first Canadian Heritage River was the French River in Ontario, designated in 1986. Today, there are 39 Heritage rivers across Canada (see overleaf), and more are being added to the system each year. They range from the Arctic barrens to southern Ontario's rich farmlands; from Newfoundland's rocky hills to the mountains and glaciers of the Yukon. 'The goal is to establish a system that reflects the diversity of Canada's river environments and celebrate the role of rivers in Canada's history and society. The dream is to ensure that these rivers flow into the future with their heritage features protected for generations to come.' (Taken from CHRS website.)



Establishing Canadian Heritage Rivers is a two-step process — nomination and designation. Although river nominations may be submitted to the Canadian Heritage Rivers Board only by participating governments, private citizens and groups are encouraged to present submissions to their Federal, Provincial or Territorial Board member for any river they feel is worthy. To be considered, the river must have outstanding natural, cultural and/or recreational values, a high level of public support, and it must be demonstrated that sufficient measures will be put in place to ensure that those values will be maintained. Based on these criteria, the responsible government(s) decide(s) whether or not to pursue the nomination of a specific river. Once nominated, the Board reviews the nomination and, if it meets selection guidelines for the System, recommends it to the responsible Ministers.

A nominated river becomes designated once a management plan, or heritage strategy, that ensures the river will be managed to conserve its outstanding natural, cultural and/or recreational values, is lodged with the Board by the government(s) that made the nomination. Production of a management plan or heritage strategy is based on public consultation and consensus. All protective actions on Canadian Heritage Rivers depend on existing laws and regulations, and respect the rights of Aboriginal peoples, communities, private landowners, and other stakeholders.



### More information

<http://www.chrs.ca/>

### Discussion

The 4th Canadian Heritage Rivers conference I attended was designed to celebrate the achievements of the CHRS and the rivers that make it so special. The conference particularly focused on the cultural and recreational values of rivers, as it is these features that are emphasised for the ‘heritage’ designation. The strength of the CHRS is that designation appeals to a much broader cross-section of the community, as it is heritage, recreation and environment, rather than just environmental assets, which may mean very little to a general member of the community.

The CHRS is a good example of how to engage communities in working towards a common goal of getting a river nominated and designated as a Canadian Heritage River. It would be interesting to consider establishing an Australian Heritage River System, but the criteria would probably need to be different, with a much stronger emphasis placed on the ‘natural assets’ of our rivers. Canada has a long history of exploration, transport, trade and First Nations culture along their rivers. Australia’s is a different history, and more would need to be learnt about aboriginal connections with rivers to ensure that criteria were not developed that were based on westernised (whiteman) perceptions of ‘value’.

The overall ethic of the CHRS is responsible river stewardship, and this is certainly something that LWA could promote. If LWA were to consider leading the establishment of an Australian Heritage River System it could be tied in with the regional delivery of natural resources management so that it could be used as a vehicle that Commonwealth, State and Local governments could jointly manage to reward regions that are doing a good job in managing and protecting their rivers natural, cultural and recreational assets. @@



## SNAPSHOTS

### CREDIT VALLEY CONSERVATION AUTHORITY, MISSISSAUGA, ONTARIO

#### **The Credit Valley Conservation Authority**

(CVC) has its main office in Mississauga, Ontario. It is responsible for the watershed of the Credit Valley and has an interesting mix of intense urban development pressures, agricultural land and green space management, such as parts of the Credit River that are used for recreation. This diversity is reflected in the CVC staff with biologists, hydrologists, water engineers and extension experts all working together. The CVC is funded through municipal levies, with each municipality

represented on the Board. Some of the larger municipalities may have more than one representative as it is worked out on a per head of population formula. The municipal representatives are not staff members of the local council, but nominated representatives of the community. The Conservation Authorities were originally formed to address flooding, but over the years their responsibilities have expanded to cover off water management within the watershed.

The municipal funding base of the CVC means that the organisation is often directed to spend money where it has been raised. This means that it is not always the area of greatest need in the watershed that gets attention, but rather, the area with the highest population base. A consistent priority for CVC staff is to encourage their Board to take a 'watershed' rather than municipal boundary view of their environment. Another interesting political overlay that has to be managed by Conservation Authorities like the CVC, is that they are bound by legislation to report to the Ministry of Natural Resources, Ministry of Environment and Ministry of Fisheries and Oceans. This can place the Conservation Authorities in difficult situations as the money to do activities is from municipalities, but priorities for protection or restoration activities may be driven from the Federal level.

In interviews with CVC staff it seemed that the Conservation Authorities often get given the hard jobs that neither the Ministries or the municipal governments want to engage in. This means that Conservation Authorities are often the piggy-in-the-middle on 'hot topics' that other agencies do not want to address.

One of the biggest issues being managed by the CVC is urban development. Water supplies for urban development are from Lake Ontario which means that throughout the Mississauga region, agricultural land is being converted to intensive housing estates





that stretch for many kilometres. In 1996 there were 268,000 people living in the district, in 2001 this had increased to 325,000, and it is still climbing. The impact on water quality of this urban development has been marked, with the increase in *e.coli* and other bacteria, as well as heavy metal levels a significant problem. Bacterial contamination is largely the result of unrestricted pet access to streams in urban areas. Storm water management ponds are being used to address the problem, and whilst they are working well for heavy sediment, they are not reducing *e.coli* and heavy metal levels (zinc, aluminium).

Cultural issues are also important, with water quality compromised by ‘offerings’ from the Punjabi Indian community. When someone dies in the Punjabi tradition, their ashes go into the river as well as large amounts of ‘offering’ including fruits, flowers etc. This practice is resulting in a significant impact on the river. A CVC outreach program is working with leaders in the community to try and understand the ‘offerings’ and their significance, to see if some other way of managing the cultural significance and attachment to the river can be found, without reducing water quality.

Outreach programs run by the CVC target different groups are sophisticated, and target several audiences: residents and industry; children and their educators; adults; community groups; industry and government. For example, students are encouraged to be ‘plugs to pollution’ by reducing waste into water, whilst their parents who have pets are invited to ‘stoop and scoop’ to try and reduce faecal contamination. The CVC produce a ‘Stewardship Activity Calendar’ to keep track of events in the watershed, particularly when ‘workdays’ are being held. It is available on-line and in hard copy, and is all linked to the tag line of ‘caring for the credit’. The CVC also convene ‘Stewardship Forums’ so that people can meet researchers and ask questions, as well as researchers and CVC staff being able to keep in touch with issues as those in the catchment see them. The CVC also has Friends of the Credit Awards that are voted on by the CVC Board of Directors. People are nominated, with categories for individuals, non-government organisations and industry, it is all about recognising contributions, however small, to ‘caring for the credit’.

Rural water quality programs are funded by municipal levies, and largely administered through the CVC. These programs provide excellent funding incentives for farmers to fence off, replant, provide off-stream watering, as well as being paid a small annuity (\$250) for three years in recognition that they have lost land from production. In rural regions there is also a Conservation Planning Program that is founded on building a lasting relationship with the landowner. This program has done some great work on the level of individual farms, with farmers and CVC staff developing Conservation Farm Plans. These plans provide detailed analysis of the farm on a landscape and ecosystem basis, including GIS information, mapping of waterways etc. and recommended



## SNAPSHOTS

management actions. This approach was designed so that farmers could understand ‘their piece of the puzzle’. The development of these plans has generally led to positive outcomes on-farm, but they are very resource intensive, and it is unlikely that this quality of plan can be continued due to budget limitations. Currently, CVC staff are trying to work out how to cover off the key parts of the plan that motivate farmers to change, but without having to spend quite so long in negotiations and developing such a detailed plan. CVC staff know this could be difficult as it is the value of the relationship building that tends to lead to action on the part of the farmer.

Credit Valley Fisheries Management Plan has recently moved from a *catching* fish to *watching* fish approach. They are developing citizen guides and guides for planners so that fish habitat and species diversity can be maintained and protected. The CVC is constantly engaged in a balancing act of managing recreation areas, but also trying to protect and conserve fish habitat. This is managed with close relationships in local communities, and a commitment to trying to find win-win situations. By emphasising the value of fish as wildlife to watch and appreciate, rather than just catch, a new recreational pastime is being developed — that of valuing fish habitat and observing the environment, rather than impacting upon it.

Overall the CVC is engaged in a balancing act of competing needs — urban development in the region is astounding and this is contrasted with the Credit Valley and Niagara escarpment areas of the watershed that have stunning rivers and scenery. The municipal base of the Conservation Authorities is both a blessing and a curse — it means they have a solid revenue base, but it also means they operate in a highly politicised environment that can make it difficult to just get on with the job of watershed management.

### For more information

<http://www.creditvalleycons.com/>

### Discussion

The CVC is an impressive organisation staffed by a committed and enthusiastic staff. LWA could promote cross-country collaboration by instigating an exchange program for people working in Catchment Management Authorities in Australia, (and equivalent organisations) and people from Conservation Authorities (and equivalents) in Canada. Based on my personal experience, the one day I spent with the CVC exposed me to lots of new ideas and I established relationships that I will maintain into the future. I was also able to let people know about the work LWA is doing, and on emerging issues such as water use efficiency, cost sharing, water trading etc. the Canadians are keen to learn more from Australia. The cost of an exchange program for LWA would mainly be the airfare, as it could be established on the basis that host organisations arrange



accommodation etc. for visiting exchange recipients. The exchanges could be for one to two months, with people job-swopping between Canada and Australia. If successful, the program could then expand to include other countries. If the Regional Rivers Programs is supported by the LWA Board, an annual competitive international exchange initiative could be a central 'pillar' of the mentoring and capacity building components of the program. @@



#### GRAND RIVER CONSERVATION AUTHORITY, CAMBRIDGE, ONTARIO

**The Grand River Conservation Authority (GRCA)** is the largest Conservation Authority in Ontario. The Grand River is well known as a Canadian Heritage River, with the GRCA winning the Theiss Riverprize in 2001 in recognition of the cultural, ecological and recreational improvements that have been made along the river. The organisation has a staff of over 100 people, including planners, hydrologists, environmental scientists, extension officers, policy and communications experts. It is a well known organisation and has similar operational arrangements to the CVC described previously. When first established, the GRCA Board had 50 municipalities represented, with this number making the Board unworkable. This has since been resolved by amalgamation of some municipalities, with the number now reduced to 26. Some municipalities like Waterloo, have several representatives (currently four) because of the per head of population levy base. This means that this municipality often has the casting vote on a decision, resulting in tension amongst the Board as competing priorities in other parts of the watershed do not have as many votes.

The GRCA has an excellent stewardship program, with the watershed divided up into five regions, and a staff person dedicated to each region. The Rural Water Quality Program, which is funded by municipal levies, is an important funding base for the stewardship team. The focus of the Program is on improving water quality by fencing out stock, building stock crossing points, installing off-stream water etc. Particular attention is paid to getting the right person to promote and implement the program in the regions. A high value is placed on the importance of investing in relationships with the local community. For example, one region managed by the GRCA is dominated by the Mennonite community, a community that ranges from the old order Mennonite who ride in the horse and buggy, and who reject electricity etc. through to modern day Mennonites who live in the general community. The effort that has been spent in building relationships with the Mennonite community is impressive, with the staff member concerned now accepted as someone who can be trusted. Interestingly, many Mennonites will not accept the incentives offered by the GRCA to fence off waterways





## SNAPSHOTS

etc. as they believe it places them in a relationship with government that obligates them to support, and possibly go to war on its behalf. The separation of church and state is a central Mennonite tenet, and this belief is handled sensitively on a one-to-one basis, with each farm plan tailored to meet the needs of the family concerned. Although incentives are often not used, the Mennonite community has embraced waterway protection and many farms are implementing the recommendations made by the GRCA to improve water quality at their own cost.

The GRCA produces a range of publications, including a newspaper that goes to every householder in the watershed. The newspaper is an interesting mix of stories, information, upcoming events etc. it integrates the GRCA into the local community because the organisation also sponsors and organises many cultural events in the region. The organisation also acts as a resource centre, with government and non-government organisations represented. A particularly exciting initiative is the 'Living Classroom' project that aims to foster a new generation of environmentally-aware citizens. The Grand River Conservation Foundation, in partnership with the Grand River Conservation Authority (GRCA) and watershed school boards, is providing direct funding for school programs over the next five years and beyond, for *every* child in the Grand River watershed to participate in outdoor education programs a minimum of three times during their elementary school career. The project's philosophy is that:

*'protecting and sustaining this treasure (the Grand River) is the responsibility of everyone who lives on or near it. What better way to encourage this sense of responsibility than to begin with our children.'*

Overall, the GRCA is an impressive organisation that manages a range of environmental, social and cultural programs. Their website provides an excellent overview of activities. Being the recipient of the Theiss Riverprize in 2001 has increased the international and domestic profile of the agency, and the 4th Canadian River Heritage Conference was celebrating the 10th anniversary of the Grand River's Canadian River Heritage designation.

### For more information

<http://www.grandriver.ca>

<http://www.mennonitechurch.ca/about/wmam/>

### Discussion

See CVC discussion. ☺☺





## COMMUNITY FISHERIES AND WILDLIFE INVOLVEMENT PROGRAM (CFWIP)

This Federal Ministry of Natural Resources (MNR) program began in the early 1980s to try and support community groups that wanted to do something to enhance waterway health, notably fish and wildlife habitat. The program funds short-term projects annually, and distributes \$1 million per annum in small grants (up to \$5000). The projects are often simple restoration habitat activities, such as putting rock riffles back into a stream. They generally take a couple of weekends to accomplish, so the time commitment on the part of those involved is not large. MNR staff manage the projects, and assist groups with the application process as required. The application form is an easy to use, one page format, with MNR staff providing follow up notes to support the application. The applications are assessed by MNR staff with funding provided on a competitive basis. Projects that are within Ministry district plans are more likely to be funded than those that are not, and there is an attempt made to integrate activities so that they work towards achieving broader watershed goals. To date, there have been 25,000 people involved and 7000 projects. A database has been developed to keep track of these projects.

### More information

See Siwan for more details

### Discussion

CFWIP is a small grants ‘feel good’ program that is designed to engage community groups who want to get their hands dirty, but who don’t want to have to think about broader watershed issues. Some practitioners working in natural resources management are not terribly supportive of the program because they feel it is ad hoc and piecemeal, and the level of supervision by Ministry staff is not rigorous enough. A key failing of the program is that there is no formal monitoring and evaluation in place, to the extent that the database, whilst impressive in its details about the project and who has been involved, has no performance measurement information.

The program does, however, have strong political support (over a large geographic area and allows people to get in and do activities that are important to them). The learnings for LWA are that CFWIP makes no apologies for the lack of bureaucratic red tape and process, it is run on a small administrative budget and it is about getting people involved and feeling good about their contribution to river restoration for wildlife. This sort of program, which has been running for twenty years, is useful when it is paired with other more strategically focused activities operating at a catchment scale. It is supported by politicians and bureaucrats alike because it is well known and always a ‘winner’ in engaging local communities. @@



## SNAPSHOTS



### ONTARIO STEWARDSHIP PROGRAM

In the early 1990s, it was felt by some in the Federal Ministry of Natural Resources (MNR) that there was a need to simplify the process of getting people together to undertake restoration activities. There was also a need identified to develop tools to make restoration easier. **The Ontario Stewardship Program** was developed to address these needs, and it places a strong emphasis on relationships and bringing people together. It is unashamedly ‘place based’, which means that it encourages groups to focus on small stretches of stream. Over time, as the same people stay involved, the focus on ‘place based’ activities gradually becomes scaled up, so that those undertaking activities realise they are actually working on a watershed scale. The scaling up is not, however, something that is emphasised, as it is seen as the responsibility of the local Stewardship Coordinator to keep the watershed view in mind, whilst at the same time supporting people to undertake place based activities.

The Ontario Stewardship Program is run on a decentralised model, and divided up according to the three regions, and 27 districts that form the Ontario province. Thirty five Stewardship Coordinators are employed across the province, and these people generally have a biophysical technical background, but are also selected on the basis of strong communication skills. They are tenured permanent MNR staff positions. The role of the Stewardship Coordinators is to bring people together and ‘manage by influence’, as much of the work being done in the province is accomplished by other agencies, particularly the Conservation Authorities. The Stewardship Coordinators assist people in developing projects and try to involve other agencies and groups that might have an interest in topic being addressed. A large part of the Stewardship Coordinators role is facilitating interaction between groups, both private and public agency and industry groups.

#### For more information

<http://www.stewardshipcentre.on.ca/>

Once on this site you can then click onto a map of Canada that has the provinces broken up so that you can get the stewardship information that relates to your region.





## Discussion

Australia can learn from the Stewardship programs that have been funded by the MNR as they seem to be good at motivating community action and becoming part of the local river restoration 'scene'. Their longevity has aided the development of long-term relationships and continuity of message given by departmental staff in the districts. This is in contrast to many parts of Australia where staff turnover is high, and communities are confused because of the mixed messages supplied by the agencies involved in natural resources management. @@

## [HTTP://WWW.STEWARDSHIPCENTRE.ON.CA/](http://www.stewardshipcentre.on.ca/)

An exciting Canadian initiative is the development of a **stewardship website** that links all provinces through the common goal of 'stewardship'. The website enables all non-government and government organisations to load their material onto the site, providing it is informing people about natural resources management activities that are protecting, maintaining or restoring the environment. The site is maintained by the Federal Ministry of Natural Resources and is keeping provinces connected on the topic of 'stewardship'. Each province is responsible for updating their part of the site, which makes the website active, current and constantly changing.

## For more information

[www.stewardshipcentre.on.ca](http://www.stewardshipcentre.on.ca)



## Discussion

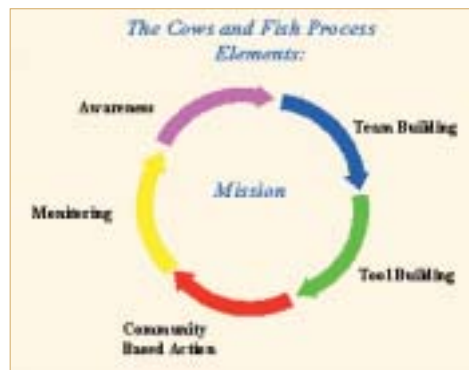
It would be good to have this concept become part of the [www.rivers.gov.au](http://www.rivers.gov.au) website, as the site could have a map of Australia that people could click on to access the State, Territory or region that relates to them. The site could then provide a location for non-government and government agencies to have links to their information, providing they supply snapshot type information so that people don't have to leave the [www.rivers.gov.au](http://www.rivers.gov.au) site to get a general update on what is happening in Australia on the topic of 'river restoration'. If the Regional Rivers Program is supported, this could be a new part of the website specifically targeted to regions. It would further consolidate our aim of making the [www.rivers.gov.au](http://www.rivers.gov.au) website the first 'port of call' to get up to date information on what is happening in Australian rivers. @@



The Alberta Riparian Habitat Management Society — ‘**Cows and Fish**’ was established to foster a better understanding on how improvements in grazing management on riparian areas can enhance landscape health and productivity, for the benefit of cattle producers and others who use and value riparian areas. Cows and Fish have 11 staff who operate across Alberta to help cattle producers and communities:

- ▶ understand riparian area functions and values;
- ▶ examine and monitor the health of their riparian areas; and
- ▶ evaluate and suggest management strategies

The program is based on five elements, with staff using the process to guide activities with groups and individual ranchers who want to improve their management of riparian areas.



The program has been very successful in engaging ranchers, and is now entering its thirteenth year of operation. It aims to build relationships with ranchers so that they can understand the importance of riparian areas and, based on this understanding, work to improve their management of these areas on-ranch. The program has a sound scientific base and can undertake detailed riparian health assessments if required. The products Cows and Fish have developed are excellent, and provide easy access for ranchers to learn about riparian functions that need to be protected and maintained for improved water quality and river health. The organisation recently won the Canada Environmental Award for Educational Learning in recognition of the work it has done on ranches across Alberta.

As a non-government organisation, Cows and Fish rely on funding from a range of sources. Where possible, branding and badging is kept to a minimum as it leads to confusion for ranchers, and is considered unimportant by Cows and Fish personnel in achieving on-ranch outcomes. Cows and Fish staff work on the basis that it takes at least three to five years for someone to change their behaviour, with this timeframe



guiding interaction with ranchers and local communities. The emphasis placed on building relationships means that staff are valued for their interpersonal skills, and in recognition of this, a recent evaluation of the program focused on the personnel involved, rather than products, databases etc. This was a bold approach, but one that explicitly recognised the importance of people and their interpersonal skills in keeping Cows and Fish relevant and accessible by Albertans.

#### For more information

<http://www.cowsandfish.org/index.html>

#### Discussion

Cows and Fish are a no nonsense non-government organisation that is doing a good job in engaging ranchers in improved riparian restoration and management. The products that support staff are impressive, and I will be drawing on them for more ideas in the National Riparian Lands R&D Program and Rivers Arena more generally. Lorne Fitch who runs the program is inspiring, he is very down to earth, and talks about the fundamentals of human relationships such as trust and respect as being the basis upon which any efforts to change behaviour need to be built. ☺☺



# Trout Unlimited Canada

**Trout Unlimited Canada** (TUC) is a non-government organisation that was established in 1972 with a charter to ‘conserve Canada’s coldwater resources’. It is based on the American Trout Unlimited organisation that began when a group of concerned anglers noticed that the fish in the rivers they frequented were declining in number and diversity. Today, TUC has over 4000 members in 17 Chapters across the country. The organisation invests in a range of science and extension activities, and has an established reputation for its scientific credibility, as well as for its ability to work with Federal, Provincial and Municipal governments. The organisation’s charter enables it to invest in a range of activities relating to habitat restoration and conservation. All the research undertaken is reported back to members, with fish habitat, fish health and life cycle investigations a prime area of investigation.



## SNAPSHOTS

Currently, TUC's Natural Resource Board is taking the lead in developing a natural resources management strategy for Canada that seeks to gain agreement between key non-government and government agencies about priorities for the future. In addition to playing a major advocacy role, the organisation also works on a range of education and awareness programs. One of the most successful of these is the Yellow Fish Road project that works with schools to paint yellow fish on all drains, stormwater outlets etc. to raise awareness about the importance of protecting river health. The project is integrated into school curricula with materials developed for teachers to use in the classroom.

TUC is funded from membership subscriptions, government grants and money from lottery funds. One of the strengths of the organisation is its fund raising ability, and it organises large fund raising dinners that can raise up to \$500,000 in one night. Donations are accepted from a large range of organisations, generally with a fishy theme, and advertised in a glossy catalogue that those attending the dinner use to bid for particular items. This is the main revenue base for TUC.

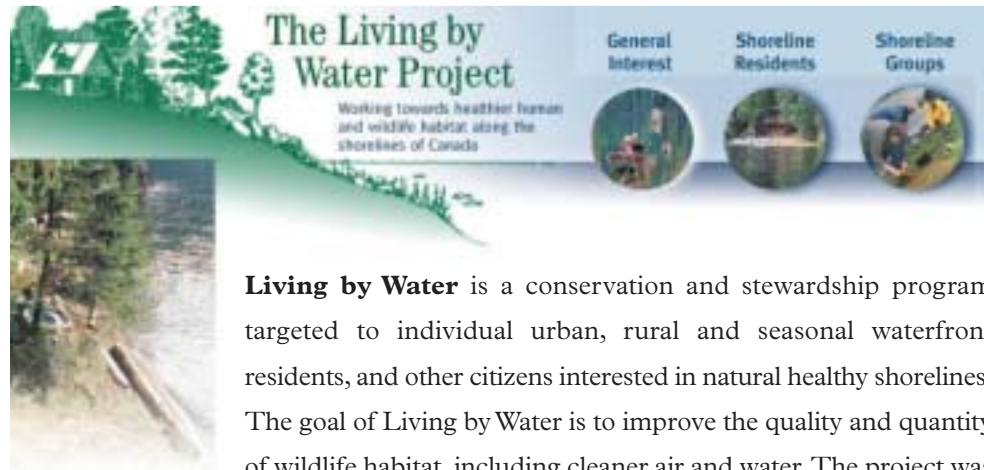
An unanticipated area of growth for TUC is in providing coordinated capacity for other non-government organisations through offering expertise and resources in planning, finance, member relations, communications and public involvement. This is an interesting role, but one that enables TUC to provide umbrella support to other, smaller, less professional non-government organisations, who do not have well developed administrative and financial systems. TUC also plays an important role for government agencies that use the organisation as a conduit into the general community.

### For more information

<http://www.tucanada.org/index1.htm>

### Discussion

TUC is a very professional non-government organisation that is clear about its charter and is able to access points of influence at policy, interest group (e.g. fishermen), scientific and education levels. LWA has done little to engage with the large recreational fisherman groups in Australia, and yet it is a growing industry. The key to accessing this group is dedicating resources and time to building solid relationships. LWA could investigate how best to engage with the fishing industry, as well as other non-government organisations, as they provide a new audience for our product and message. @ @



**Living by Water** is a conservation and stewardship program targeted to individual urban, rural and seasonal waterfront residents, and other citizens interested in natural healthy shorelines. The goal of Living by Water is to improve the quality and quantity of wildlife habitat, including cleaner air and water. The project was developed by Clive Callaway and Sarah Kipp who identified a gap in information and services for people living on shorelines. It was developed as a national program, and has a strategic alliance with the 'Canadian Naturalists' group to ensure cross Canada coverage is maintained. The motto of the Canadian Naturalists is 'to know nature and to keep it worth knowing'. Living by Water provides handy tools and tips for people living along shorelines, with a range of different communication techniques used to connect with individuals and groups, and engage them in the project.

In 2002 the book, *On the Living Edge — your handbook for waterfront living*, was released in British Columbia. Since then three more have been developed for Ontario, Saskatchewan and Alberta. Each of the books is slightly different to reflect the different provinces, particularly in the area of legislation. The book is sold through the Canadian Naturalist organisations, and is used as the base text for workshops with Municipal staff, government departments and other non-government organisations. A growth area has been the interest by realtors in the book, with workshops now being run through the Real Estate Institute to demonstrate the importance and value of shoreline property and how that value can be maintained. The book is attractively presented and covers the range of issues that shorefront owners need to know about, it is likely that realtors will give one of the books to purchasers of shoreline property as a gift.

*Shorelines are 'corridors of green and blue with the value of gold'.*





## SNAPSHOTS

Other innovative products produced by Living by Water are ‘workshops in a box’ that break down the material in the book into smaller chunks for people to access in workshop format. The workshops are designed to be run by anyone, with the book used as a back up text. There are also ideas for generating community action, children’s activities and a range of other excellent ideas for engaging people in shoreline protection and maintenance (e.g. paddling puppeteers, ribbons of life transportable exhibit, speaking tours, drama etc.). In recognition of the work of Living by Water it was awarded the community prize at the 4th Canadian River Heritage Conference.

A growing area of interest for the founders of the Living by Water project is conservation marketing. This interest has arisen out of the lessons learnt in running the Living by Water project. Conservation marketing builds on modern ethical business marketing, and on the tools and techniques of community-based social marketing and environmental education. The purpose of conservation marketing is to move people along a continuum of awareness through education, to attitude and behaviour change, and eventually sustained behaviour change. The idea of conservation marketing is gaining momentum in Canada, with workshops now being run with public and private agencies wanting to better communicate with the general public about natural resources management issues.

### For more information

<http://www.livingbywater.bc.ca/>

### Discussion

The Living by Water project is an excellent reference point for looking at the range of ways you can engage communities. Of greater interest for LWA is the conservation marketing aspect of their work, as there is a lot to learn about how to best communicate your message when drawn from a marketing, rather than education, philosophy. A River and Riparian Management *Technical Update* on Conservation Marketing is planned and an ongoing relationship with the Living by Water team will be maintained. ☺☺



## Conference speakers



In the 1960s, Robert H. Boyle brought the **Riverkeeper** idea from England to America when he wrote a book about the Hudson River in the United States of America, describing the need for someone to protect and defend the river he loved. He then set out to make this concept a reality. In 1983, the Hudson River Fishermen's Association (a group Boyle founded in 1966) hired John Cronin, a former commercial fisherman and congressional aide, to patrol the Hudson full time. Riverkeeper was thus born as a privately-funded non-government organisation led by a full-time public advocate for the river.

Riverkeeper now serves as an advocate for the health of the Hudson River and the New York City watersheds. On behalf of a grassroots constituency, it employs a variety of tools and strategies to identify problems, respond to citizen complaints, devise appropriate solutions and vigorously enforce environmental laws. Riverkeeper is the public's investigator, scientist, lawyer, lobbyist and public relations agent for the River. Riverkeeper uses the United States of America's *Clean Water Act*, which empowers private citizens to act as enforcement agents and public advocates, to collect evidence and file lawsuits against polluters.

In 1984, attorney Robert F. Kennedy Jr joined Riverkeeper, becoming its chief prosecuting attorney in 1993. Along with Karl Coplan, he co-directs the Pace Environmental Litigation Clinic, where ten students and two professors do nothing but prosecute Hudson River polluters. To date, Riverkeeper and its network of citizens have prosecuted over 300 environmental lawbreakers. The health of the Hudson River has dramatically improved since Riverkeeper started prosecuting the many industries that were polluting the river. There are now over 110 Waterkeeper programs across the United States, with other countries also interested in employing the techniques it uses to 'catch polluters'.

The work of Riverkeeper is under threat at the moment as the Bush Administration is 'watering down' legislation that has been used to bring polluters to account for their actions. Robert Kennedy is concerned about this development and the rise of multi-national corporations doing deals with government to exploit natural resources.

### More information

<http://www.riverkeeper.org/>



## Discussion

Robert Kennedy is an excellent speaker and it would be good to bring him out to Australia to talk about the use of legislation as a tool for improved river management. It would be interesting to take the work funded through the National Rivers Consortium on legislation and do an analysis of how Australia's legal framework could be used to bring polluters and those degrading our rivers to account. To date, Australia has tended to shy away from this approach, but it may be time to revisit legislation as an effective river protection tool and alert people to the possibilities of using it within a river management context. @@

## Ethnosphere Expeditions

'Together, the myriad cultures of the world make up an intellectual and spiritual web of life, an "ethnosphere", that envelops and insulates the planet. An ethnosphere is the sum total of all thoughts, beliefs, myths, and intuitions brought into being by the human imagination since the dawn of consciousness. The ethnosphere is humanity's greatest legacy. It is the product of our dreams, the embodiment of our hopes, the symbol of all that we are and all that we have created as a wildly inquisitive and astonishingly adaptive species.' (Excerpt from Wade Davis presentation to the 4th Canadian River Heritage Conference)

The **Ethnosphere Expeditions** is National Geographic Society's initiative to explore and discover the wonders of diverse cultures around the globe. Over the next five years, National Geographic Society explorer-in-residence Wade Davis and Chris Rainier, a National Geographic Cultures Initiative photographer and director of the Cultures on the Edge website, will journey into the four corners of the planet on a quest to document and understand the rich diversity of human culture, seeking peoples willing to share the story and meaning of their own unique myths, spiritual beliefs, art and language.

One of the intense pleasures of travel is the opportunity to live among peoples who have not forgotten the old ways, who feel their past in the wind, touch it in stones polished by rain, taste it in the bitter leaves of plants. Just to know that Jaguar shamans still journey beyond the Milky Way, that the myths of the Inuit elders still resonate with meaning, that the Tibetan pilgrim still pursues the breath of the Buddha, is to remember the central revelation of anthropology, and that is the realization that our particular cultural world does not exist in some absolute sense, but rather is simply one model of reality; the consequence of one set of adaptive choices that our particular intellectual and spiritual lineage made, albeit successfully, many generations ago. The Penan in the forests of Borneo, the Vodoun acolytes in Haiti, the Tuareg nomads in the searing sands of the Sahara — all these peoples reveal that there are other options, other means of interpreting existence, other ways of being. This is an idea that can only inspire hope.

**Wade Davis**



### More information

[http://news.nationalgeographic.com/news/2003/05/0522\\_030522\\_humandiversity.html](http://news.nationalgeographic.com/news/2003/05/0522_030522_humandiversity.html)

'Explorer on initiative to document cultures on the edge'



[http://news.nationalgeographic.com/news/2002/06/0627\\_020628\\_wadedavis.html](http://news.nationalgeographic.com/news/2002/06/0627_020628_wadedavis.html)



### Discussion

Wade Davis is a brilliant speaker and it would be fantastic to bring him out to Australia and support a series of lectures. For me, his keynote speech was the highlight of the 4th Canadian River Heritage Conference. He talks about 'ethnospheres' and 'biospheres', and how our modern world is losing language, culture, ethnic and biological diversity at an alarming rate. LWA could sponsor Wade and use his lectures as a way of promoting the organisation's work in understanding not just the biological, but social processes that are impacting on the state of our natural resources. The other angle for supporting a tour by Wade is LWA's new investments in the area of indigenous understandings of our land, as well as the Tropical Rivers program and the work that will be done with local landowners to learn about how rivers function in parts of Australia little is known about. ☺☺



## Ways of 'knowing' our rivers

Canadians have a strong connection to their rivers, with much of this connection based on culture and recreation. When Canadians go on holiday they go to rivers and lakes, and this means that there is a connection to water that is about good times, enjoyment, rest and relaxation. James Raffan is a canoeist and writer. He believes that in western society we have tended to restrict our ways of 'knowing' about the natural environment according to Blooms Taxonomy which breaks knowledge into cognitive, affective and psychomotor. Bloom places equal weight on these three ways of knowing, yet Raffan argues that in our modern world we tend to support and favour cognitive ways of knowing, that is, knowledge based on what we define as 'rational' and logical. That this has developed goes against the reality that most people make decisions on emotional rather than 'rational' grounds. Raffan believes we should explicitly recognise this and move to thinking about rivers and people's experiences of them through their 'multiple intelligences' (see box below). He argues that until we do this, we will fail to engage people in river protection and restoration because cognitive 'knowing' is not personal enough to motivate someone into action. It is only through personal experience that public knowledge becomes meaningful.

Howard Gardner claims that all human beings have multiple intelligences. These multiple intelligences can be nurtured and strengthened, or ignored and weakened. He believes each individual has nine intelligences:

1. **Verbal-linguistic intelligence** — well-developed verbal skills and sensitivity to the sounds, meanings and rhythms of words
2. **Mathematical-logical intelligence** — ability to think conceptually and abstractly, and capacity to discern logical or numerical patterns
3. **Musical intelligence** — ability to produce and appreciate rhythm, pitch and timber
4. **Visual-spatial intelligence** — capacity to think in images and pictures, to visualize accurately and abstractly
5. **Bodily-kinesthetic intelligence** — ability to control one's body movements and to handle objects skilfully
6. **Interpersonal intelligence** — capacity to detect and respond appropriately to the moods, motivations and desires of others.
7. **Intrapersonal intelligence** — capacity to be self-aware and in tune with inner feelings, values, beliefs and thinking processes
8. **Naturalist intelligence** — ability to recognize and categorize plants, animals and other objects in nature
9. **Existential intelligence** — sensitivity and capacity to tackle deep questions about human existence, such as the meaning of life, why do we die, and how did we get here.



Raffan believes that through cultural links, canoeing, fishing, whatever the activities someone engages in along a river, it is the intelligence through which they come to connect with the natural environment. If we are to more successfully transfer our message about the need to protect and care for our rivers, we need to recognise the way people connect to rivers and produce material in ways that they can relate to.

### More information

<http://www.thirteen.org/edonline/concept2class/month1/> (multiple intelligences)

thirteen ed online

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<http://www.writersunion.ca/r/raffan.htm> (James Raffan)

## James Raffan



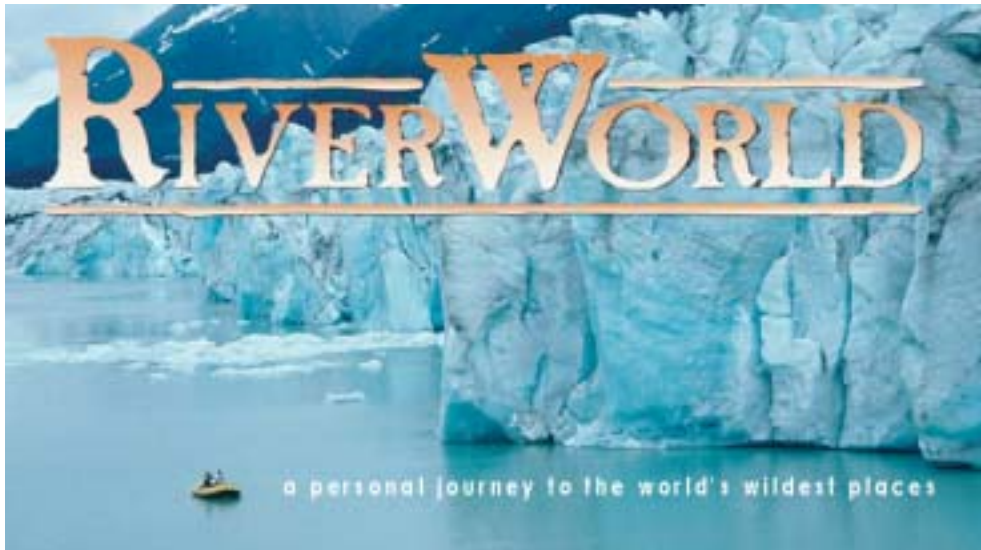
### Discussion

I have heard James Raffan speak a couple of times (at *Rivers* symposium and the 4th River Heritage Conference), and he is an excellent presenter who engages well with audiences. He has travelled across Canada in his canoe and writes about what he sees and feels in a compelling way. I think that his use of the multiple intelligences framework is one that LWA can use to support the community fellowships and some of the work being undertaken in the Social and Institutional Research Program to understand how people think and relate to their rivers. ☺☺



## CONFERENCE SPEAKERS

Another way of tapping into Raffan's work is his love of the canoe and how it enables people to get out on a river or lake to explore their natural world. It would be great for LWA to sponsor 'get to know your river' days where people could hire canoes in a safe environment and learn not only how to canoe, but what is going on in their river ecologically. This would be terrific adjunct to an LWA 'event' so that people get the sensory experience of a river or stream, rather than looking at it on a projector screen.



**Riverworld** is the title of a presentation that Mark Angelo, a white water rafter and world traveller, gives to conferences and other groups. Angelo has rafted along rivers in every continent and is a keen promoter of the recreational value of rivers and the need to protect them so that we can still have access to them. There is not a great deal in the presentation about the natural assets of rivers, but in many ways this is implicit in his message that we need to protect and maintain rivers so that we can still have recreational opportunities along them. He talked about the threats to rivers in the form of pollution, damming and the social dislocation this causes.

The other aspect to Angelo is that he was one of the instigators of the Canadian River Heritage System. He has also established a Rivers Day in Canada that has proved to be very successful in engaging the general community. Angelo is now keen to establish an event similar to the Australian Riversfestival, to reach a wider audience and raise awareness about the importance of managing Canada's rivers for the future.

### More information

<http://www.riverworld.bcit.ca/>



## Discussion

Overall, Mark Angelo provides an enjoyable talk with great pictures, and would be an excellent session for any conference or event that LWA is organising. ‘Riverworld’ is now linked to National Geographic, so a session with Wade Davis and Mark Angelo would be brilliant as a study tour concept.

Angelo is also passionate about the national Canadian Heritage River System, but in recognition that **all** rivers have special values to those that live along them, he has instigated the development of a provincial level Heritage River System. There are 20 Provincial Heritage Rivers in British Columbia, with only four to five of them going through to the National Canadian Heritage Rivers designation. This is another example of providing people with opportunities to connect with their rivers, knowing that their local river is designated a ‘Canadian or British Columbia Heritage River’ places a value and sense of pride for local communities. @@





## Building on findings from study trip, ideas and recommendations

The travelling fellowship has provided me with a host of new ideas about how to bring new experiences and information about approaches to capacity building and knowledge exchange to Australian audiences. The original idea for the travelling fellowship developed out of an interest in the topic by those involved in the National Riparian Lands R&D Program. In 2002, the Program invested in a project to investigate whether capacity had been built in the communities that undertook our demonstration and evaluation projects in the mid 1990s. The results of this research have been developed into a Research Report, *Assessing Community Capacity for Riparian Restoration*, as well as a self-assessment tool for groups and individuals that is accessed via the [www.rivers.gov.au](http://www.rivers.gov.au) website. A peer review workshop was held to review these products with feedback incorporated into the final workshop. Following the workshop, a *RipRap* was produced on the topic of Capacity Building (Edition 24) that featured research projects currently being undertaken in Australia on this topic. I presented the work we have undertaken on capacity building at the 4th Canadian River Heritage Conference where it was well received and a lot of interest was generated around our idea of trying to assist communities assess their level of ‘capacity’ against a range of criteria. These products and events largely address the achievement criteria for the travelling fellowship. However, I would now like to build on this work and complement it with new approaches and ideas from Canada. I would like to propose the following mix of products and presentations as a way of raising awareness and encouraging people to learn from overseas experience.

### General awareness raising

#### ***RipRap*, Edition 27 — Connecting communities**

This upcoming edition of *RipRap* will feature articles from those organisations and people I visited in Canada who have interesting ideas that Australian audiences can relate to and learn from. The organisations I would like to feature are Cows and Fish, Pacific Streamkeepers Federation, Living by Water, Trout Unlimited, the Grand River Conservation Authority and the Credit Valley Conservation Authority. The articles would be written by the people I visited in each of these organisations, and would focus on the theme of ‘connecting communities’ and how they do this, rather than a summary of the organisation itself. I would also source Australian articles in the It’s a Wrap sections, with particular reference to some of the papers being presented at the 4th Stream Management Conference. This edition would be available in October.



## Guidelines

Callaway, C. & Kipp, S. 2004. *River and Riparian Management Technical Guideline*, Number 6, 'Conservation Marketing — Principles and Practice', Land & Water Australia.

Conservation marketing is emerging as a new discipline that LWA could learn from and promote widely. The Living by Water team of Sarah Kipp and Clive Callaway have agreed to work on a joint publication with LWA to capture the principles of conservation marketing and demonstrate how they can be applied in river and riparian restoration. This material would be produced as a *River and Riparian Management Technical Guideline*. It would be relatively simple to produce as I have already reviewed the articles from which the material will be drawn and discussed the concept with Clive and Sarah. I would try to make it available for the 4th Stream Management Conference in October. Production of a guideline would support a condensed article on the same topic in the proposed *RipRap 27* on Connecting Communities.

## Presentations

Lovett, S. 2004. *Capacity building and knowledge exchange methods for community-based river and riparian management — Canada and Australia compared*. Presentation to the 4th Stream Management Conference, October (see Appendix 3 for abstract).

I am also happy to give presentations to the staff at Land & Water Australia, the National Rivers Consortium Board and the Land & Water Australia Board.

## Promoting LWA overseas and establishing links

I visited a range of different organisations and provided presentations to all of them about the work of LWA. I wore my River Landscapes or LWA polo shirt and represented the organisation in a professional manner. Each of the 'snapshots' presented in this Final Report represent an organisation that was keen to stay involved with LWA and participate in knowledge exchange on a regular basis. I have made a commitment to these organisations to keep in touch, as the development of strong relationships will be beneficial for all involved.

I provided formal presentations to:

- ▶ 4th Canadian River Heritage Conference. Guelph, Ontario (see Appendix 2 for abstract)
- ▶ Credit Valley Conservation Authority Board and staff. Mississauga, Ontario
- ▶ Grand River Conservation Authority staff, Cambridge, Ontario
- ▶ Trout Unlimited Canada, Calgary, Alberta



## Ongoing

In the ‘snapshots’ section of this Final Report I have made several recommendations and ideas about ways in which we can capitalise on the ideas and organisational links I have made in Canada. I am happy to discuss and develop any of these ideas further. ☺☺



Vancouver Island



# Appendix 1

## People and organisations visited (formally)

Person	Organisation
Zo Ann Morten	Pacific Streamkeepers Federation, Vancouver, British Columbia
Sandie Hollick-Kenyon	Fisheries and Oceans Department, Vancouver, British Columbia
Jack Imhof	Trout Unlimited Canada, Guelph, Ontario
Owen Williams	Ministry of Natural Resources, London, Ontario
John Fitzgibbon	Geography Department, University of Guelph, Ontario
Mark Angelo	BCIT Fish, Wildlife and Recreation Program, Guelph, Ontario
Hazel Breton	Credit Valley Conservation Authority
Robert Morris	
David Beaton	
Barbara Veale	Grand River Conservation Authority
Tracey Ryan	
Anne Loeffler	
Martin Neumann	
Paul Emerson	
Crystal Allan	
Lorne Fitch	Cows and Fish, Calgary, Alberta
Greg Shyba	Trout Unlimited Canada, Calgary, Alberta
Ralph Strother	
Clive Callaway	Living by Water, Okanagan Valley, British Columbia
Sarah Kipp	
Bob Newbury	Newbury Hydraulics, Kelowna, British Columbia
Don Gibson	Parks Canada, Ottawa (met at conference) Canadian River Heritage System Secretariat



## Appendix 2

### The 4th Canadian River Heritage Conference Submission of abstract

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<b>Title</b>	The Australian experience of linking science and community — using research to build capacity
<b>Presenter</b>	Dr Siwan Lovett
<b>Affiliation</b>	Program Coordinator National Riparian Lands Research and Development Program Land & Water Australia
<b>Mailing address</b>	GPO Box 2182 CANBERRA ACT 2601 AUSTRALIA
<b>Email</b>	siwan.lovett@lwa.gov.au
<b>Telephone</b>	+61 2 6263 6042
<b>Facsimile</b>	+61 2 6263 6099
<b>Type of presentation</b>	Concurrent session
<b>Category</b>	Building community capacity
<b>Biographical sketch</b>	Siwan coordinates a program of research and development focusing on river and riparian zones for Land & Water Australia. Biophysical, social and economic research is funded through the program, with Siwan having particular skills in the translation of scientific information into useful, attractive and accessible products for day-to-day river management.

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Full copies of the paper are available from Siwan Lovett.



## **The Australian experience of linking science and community — using research to build capacity**

Australia is a land of contrasts, with vast floodplain river systems, ephemeral arid rivers and rushing rainforest fed streams. The one constant in the face of this diversity is the passion people have for ‘their rivers’ and a growing recognition that something needs to be done to protect and restore these living systems from the negative impacts of agricultural expansion, water extraction and urbanisation. Having passion is a key ingredient for success, however it needs to be matched with skills and knowledge to enable change to be effective. Many a well-intentioned restoration project has been thwarted because of an incorrect diagnosis of the problem, poor planning or a lack of leadership. Australia, like many other countries, faces the difficulties of small number of agencies trying to help a large number of community groups. This paper reports on the findings of a recent study into the key factors that assist and impede groups undertaking river restoration activities. It looks at what is meant by the term ‘building community capacity’ and reports on a new self assessment tool that enables groups to consider the range of social, economic and environmental factors that need to be covered prior to undertaking a river restoration project. It also discusses how one research and development agency, Land & Water Australia, is attempting to make research relevant and accessible for people living and working along our rivers. @@





# Appendix 3

## The 4th Stream Management Conference, 2004 Submission of abstract

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<b>Abstract title</b>	Capacity building and knowledge exchange methods for community-based river and riparian management — Canada and Australia compared
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<b>Author details</b>	Dr Siwan Lovett National Riparian Lands R&D Program Land & Water Australia GPO Box 2182 CANBERRA ACT 2601 Tel: 02 6263 6042 Fax: 02 6263 6099 Email: <a href="mailto:siwan.lovett@lwa.gov.au">siwan.lovett@lwa.gov.au</a>
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<b>Preferred theme</b>	Education and change — putting ideas into practice
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<b>Key words</b>	Capacity building, knowledge exchange, river, riparian, community, Canada
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<b>Presentation format</b>	Oral presentation
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<b>Biography</b>	Siwan coordinates a Land & Water Australia program of research and development focusing on river and riparian management issues across Australia. Biophysical, social and economic research is funded through the program. Siwan has particular skills in the translation of scientific results and data into practical information readily understood and adopted by both technical and lay audiences for day-to-day river management.
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Full copies of the paper are available from Siwan Lovett.



### **Capacity building and knowledge exchange methods for community-based river and riparian management — Canada and Australia compared**

In Australia, we are placing increasing emphasis on the level of region or catchment as the planning and management unit for land and water resources. It is the communities that live in these regions that are experiencing first-hand the problems of environmental degradation and the impact that is having on their long-term economic and social sustainability. Commonwealth, State and Territory governments are now charging regions with the responsibility of developing investment plans to address these issues, as well as to provide guidance to their local communities about how to manage the trade-offs between environmental, economic and social priorities that will necessarily have to occur. This shift in responsibility to the regional level provides communities with potentially more power than they have ever had before in managing their natural resources. However, it also brings with it considerable challenges. Asking a community to come together (largely voluntarily) and develop a technically competent catchment land and water management plan, with detailed analyses of problems and priorities, requires that the regions have good access to scientific data and its interpretation, and to people skilled, willing and able to participate. However, in many parts of Australia this is not the case. Different groups may have quite different visions for the catchment, the process of collating data and reaching agreement on priorities is often ill-defined, and people with the requisite skills hard to find. This paper examines the role of capacity building and knowledge exchange in equipping these communities with the resources they need to take on the responsibility for natural resources management. It will draw on work being undertaken in Canada to engage local communities, and compare and contrast the strategies being used overseas, with Australian approaches. Recommendations on how we can learn from overseas experience will also be made, with some suggestions as to how we can better support our regional communities in this exciting, but challenging, time. @@







Finn at Bow Lake, Rocky Mountains



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