

## Riverwise: Educating the Community About River Management

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**ABSTRACT:** *The NSW Department of Land and Water Conservation has implemented the "Riverwise" program for educating people about rivers. This has been done to help meet the long-term goal of getting the community to look after their own rivers. The Riverwise program complements the Rivercare program of incentive grants to community groups. These programs serve to get people interested in "owning" the problem of management of their local streams and experienced in doing river restoration. It is hoped that, armed with this new knowledge, experience and interest, the community will carry on without major government funding and without frequent technical advice. This paper reveals the details of the strategies in the Riverwise program.*

### 1. INTRODUCTION

A long-term goal of the Department of Land and Water Conservation (DLWC) is to have land owners and community groups managing all the streams in New South Wales in an ecologically sustainable way without major government funding or frequent technical advice. This assumes that the present relatively low level of government funding and staffing in this area will not be significantly increased. It is expected that the situation of "seed" money grant schemes and a few staff giving advice will continue indefinitely. This concept of the community managing its own rivers will require a major change in attitudes for many people. It will also require that "river carers" be empowered with the knowledge they need to carry out their task. Riverwise is the name of the DLWC program for educating the community about ecologically sustainable river management.

Other similar DLWC programs have similar aims. For example, the Streamwatch program is concerned with educating the community about water quality.

The Riverwise program runs in parallel with the Rivercare program of incentive grants. This is the main force for sowing the seeds of change in attitudes and getting community ownership and involvement in river management. It is a way of encouraging community groups to work together to plan their river restoration and construct works. These can be for erosion or sediment control, revegetation of the riverine corridor, artificial

wetlands and other nutrient control works. In addition, there is a Rivercare 2000 Award Scheme. This is a way of rewarding community groups and individuals for their work on streams, especially those who do things for themselves.

### 2. OBJECTIVES

The objectives of the Riverwise program are to educate the "river caring" people in the community to:

- understand the behaviour of rivers and identify the causes of problems
- successfully obtain Rivercare grants and other funding
- successfully obtain permits for river restoration works
- assess the effects of proposed developments and land use changes on rivers
- be aware that mismanagement on one property can affect many others upstream and downstream
- control accelerated river erosion and sedimentation
- revegetate the riverine corridor
- control stock access to rivers
- strike a balance between flood mitigation and erosion control
- control the input of nutrients
- consider the big picture when planning river restoration projects
- counter the popular misconceptions about rivers
- use legislation to stop river damage by the ignorant and exploitative

### 3. COMMUNITY EDUCATION STRATEGIES

The Riverwise program includes a full range of community education strategies. These are implemented whenever the resources of staff and funds are available.

#### 3.1 Workshops

Workshops on river erosion control are often conducted by DLWC advisory staff for localities where erosion is a major problem. All people in the local area who are interested in the problem are invited to attend. The people who attend can be diverse, including Landcare groups, Landcare coordinators, local government engineers, gravel extractors and teachers. These people learn about the

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main fluvial processes and the various options for erosion control. They also learn how to apply for grants and how to start making a plan for the restoration of their river.

### 3.2 River Walks

A river walk is conducted by a community group which has invited a technical adviser from the DLWC. The group walks along their stream bank with the adviser. Problem sites are marked on a map or air photo. The cause of each problem is determined and a range of options is listed for solving the problem at each site. This is the best way of educating the community about rivers. However, it requires a high level of DLWC resources.

### 3.3 Construction Days

Many river restoration works are now constructed by the members of community groups during a construction day organised by the group. They invite a DLWC adviser to show them the best construction techniques and advise on any design details that come up on the day. The group can then continue to build similar works without the adviser attending every time.

### 3.4 Field Days

A field day is organised by a community group that wants to show off their completed river restoration works to other invited community groups. A DLWC adviser is usually invited along to help explain why each particular type of work was selected to suit the erosion cause at each site. This strategy expands the number of people educated by the adviser.

### 3.5 School Talks

DLWC advisory staff have been invited to give talks on caring for rivers at many different schools at all levels throughout NSW. This is one of the most effective ways of changing the attitudes of future land managers. In addition, the young people are educating their parents to some extent if they discuss the topic at home.

### 3.6 Displays at Public Events

The DLWC has several high quality multimedia displays which are erected at public events such as agricultural shows, fairs and fetes. Staff attend the displays to answer any questions, show videos, organise activities and hand out printed material in show bags.

### 3.7 Water Week Activities

Many DLWC regions run river tours during Water Week (held during October). For example, the Sydney South Coast Region organises an annual canoe "discovery" tour of the Nepean River in

conjunction with the Hawkesbury Nepean Catchment Management Trust. During this tour, experts show people all the various features of the riverine environment and evidence of changes.

### 3.8 Videos

Three educational videos have been produced by the DLWC and are available for purchase by institutions or available for loan to community groups:

- Rivercare - For the Good of Your Country
- Rivercare 2 - Restoring the River Corridor
- River Processes in Action

### 3.9 Riverwise Advisory Notes

The following Riverwise Advisory Notes have been published to date for free distribution:

- Rivercare - Community Groups Looking After Our Rivers
- Extractive Industries on River Bars - Best Management Practices
- Extractive Industries on Floodplains - Best Management Practices
- Livestock Control Near Rivers
- Controlling Willows
- Restoring Urban Streams - Treatment Option: Reconstructing Vegetated Meander Bends in Straightened Channels
- Works to Control Stream Bank Erosion - Treatment Option: Planting the Common Reed, *Phragmites Australis*
- Works to Control Stream Bank Erosion - Treatment Option: Recycled Tyres and Revegetation
- Works to Control Stream Bank Erosion - Treatment Option: Log Wall and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Rock Revetment and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Car Body Revetment and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Brush Groynes and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Rock Groynes and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Timber Groynes and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Jacks and Vegetation
- Works to Control Stream Bank Erosion - Treatment Option: Heavy Duty Mesh Fencing and Vegetation

- Works to Control Stream Bank Erosion - Treatment Option: Gravel Mesh Sausages and Vegetation
- Works to Control Stream Bed Erosion - Treatment Option: Boulders
- Works to Control Stream Bed Erosion - Treatment Option: Log and Rock Bed Control and Road Crossing
- Works to Control Stream Bed Erosion - Treatment Option: Log/Timber V Weir (Horizontal or Vertical Logs)
- Buffer Zones Along Rivers and Creeks
- Wetlands On Your Farm
- Small Farms and Septic Tanks
- Blue-Green Algae in Farm Dams
- River Recreation
- Disposal of Farm Chemical Containers
- Filter Zones for Farm Dams

Several more are scheduled for publication in 1996, depending on funding:

- Restoring Native Riverine Vegetation
- Weed and Pest Control in the Riverine Corridor
- Management of Large Woody Debris (Snags) and Willows in Rivers
- Guidelines for Small Stream Crossings, Causeways and Bridges
- Controlling Sediment in Rivers by Vegetation Management
- Creating Pump Holes in Rivers Using Flow Jumps
- Fish Habitat Restoration
- Constructing Farm Dams and Small Weirs on Streams
- Works to Control Flood Scour on Floodplains
- Works to Control Stream Bank Erosion From Overbank Drainage
- Works to Realign River Channels
- Prevention and Control of Saturated River Banks
- Protecting Streams During Housing and Drainage Construction
- River Fill and Reclamation - Best Management Practices

Most of the Riverwise Advisory Notes are written by several DLWC staff along with external staff from other agencies and universities where additional expertise is required.

#### 4. STAFF EDUCATION STRATEGIES

The DLWC staff who educate the public and provide technical advice on river problems must be educated themselves. This is a highly specialised field and no university provides the level of practical training to enable a recent graduate to proceed straight out to

advise a Rivercare group. Accordingly, the Riverine Corridor Branch of the DLWC runs the following in-house courses for new staff.

- Policies, Procedures and Legislation (with manual)
- River Processes and Behaviour (with manual)
- River Restoration Works Design Principles
- Riverine Vegetation
- On-Site Design and Works Construction Practice
- Group Facilitation

Staff who have taken the courses are kept up to date by means of regular additions and revisions to their manuals along with a newsletter, Rivercare Update.

#### 5. QUALITY CONTROL

The quality of the community education and technical advice produced by the DLWC is audited internally by senior staff in the Riverine Corridor Branch. This involves annual visits to all the DLWC's regions and extensive field visits to accompany regional staff during their work.

#### 6. FUTURE ACTION

##### 6.1 Performance Measurement

The Riverine Corridor Branch will be monitoring the level of community education and stakeholder input in each region by maintaining a database of the river restoration works carried out each year. (Permits are usually required for works). This will be analysed to determine the ratio of works funded and designed partly by the government to those funded and designed solely by the community group or landowner/manager. An increase in the proportion of works done without government aid should indicate:

- that the community knowledge of rivers and river restoration works is increasing and
- that there are more people with the attitude that they own the problem and that they should be doing something about it themselves.

This database has only recently been established and there is insufficient information from previous years to allow any conclusions to be drawn about trends. However, the nominations for Rivercare 2000 awards and anecdotes from newspaper clippings indicate that many groups and land owners have recently designed and funded works themselves.

A typical example is Mr David Suttor, owner of a grazing property, "Brucedale", on Winburndale Rivulet and Clear Creek near Bathurst, NSW. He has fenced off eight kilometres of bare creek bank. This was done to control stock access and allow

regeneration of native vegetation. Although he started with a small grant from the former Green River Banks program (the predecessor of Rivercare), most of the work was done using his family's resources. He saw the benefits from the effects of the first fencing work and plans to fence off all of the riverine corridors through his property. The benefits he mentions include:

- a reduction in the bank erosion rate and loss of land (4 to 6 hectares in the last 2 floods)
- streamlined stock management with a cell system using the creek fences as boundaries
- improved look and value of the property
- a filter for water running off the paddocks, improving water quality in his creeks and in Burrendong Dam (on the Macquarie River near Wellington) if everybody followed his example
- a filter for flood water "so that we won't have to pick up sticks from the lucerne paddock every time the creeks overflow"

#### **6.2 Internet Access**

The DLWC intends to have much of its community education material and public-access data available to internet users by the end of 1996. This will also include newsletters, newsgroups and email addresses for "River Wizards" (expert staff who can answer technical questions). Some of this information is already available through the DLWC home page (<http://www.dlwc.nsw.gov.au/>). The Streamwatch home page is coming soon.

#### **7. CONCLUSION**

A program is in place for educating the New South Wales community about river management. If it is a success, we should see a gradual increase in the proportion of river management works designed and carried out by community groups and land owners themselves.