Geelong Water Forum

Wednesday December 1st 1999
10am -3.45pm
National Wool Museum
26 Moorabool St, Geelong
Speaker: Loris Duclos

Personal Introduction

Following several years of involvement with a number of different community, school, sporting and other groups I first became heavily involved with community land use and environment issues about a decade ago. This led me to commence tertiary studies in Natural Resource Management at the School. of Mines Ballarat in 1993 winning the Award for Excellence that year. Since that time 1 have continued part time study at both SMB and more recently at Forestech near Lakes Entrance. Unfortunately formal studies have had to come second to my family responsibilities and my deep commitment to strengthening local community understanding and involvement in land use issues.

(1989-91) Founding member Friends of Cockatoo Creek, (1993-94) Friends of the Earth, Project Officer Melbourne Water Sewerage Strategy Review, (1994--ongoing) Wombat Forest Society Water Researcher, (1995-96) Victorian Environment Defenders Office Board member, (1997) Daylesford Water Quality Community Group, (1998--ongoing) Tambo Environment Awareness Group RFA Project Officer, (1999) Consultant to Australian Conservation Foundation RFA Working Group).

Background

Many people from Geelong and the West RFA region have raised 'water' as the key issue to he addressed during the RFA process and a major consideration for ongoing forest management. This should come as no surprise to anyone given the ever-increasing pressure being placed on the limited water resources in this region.

Today we have the cream of forest hydrology researchers together under one roof and the community will be given the opportunity to hear the latest in forest research. We will also hear about forest management and how this has evolved to the current management system that we see today.

It is my intention to discuss some of the weaknesses and failings with contemporary forest science and the forest management systems discussed by the other speakers. Focussing on soil and water issues that obviously concern this community I hope to stimulate discussion around the appropriateness and effectiveness of forest science and management on the ground, in this region.

Rainfall, Drainage patterns and Vegetation Cover

Rainfall and temperature control the broad distribution of forest types across Australia, with forests located in two distinct climatic categories tropical forests to

The Great Dividing Range of Eastern Australia tends to mark a major divide between forest types especially where the steep escarpment marks the eastern edge of the inland plateau. To the inland, the climate is distinctly drier and warmer than to the cast and south-cast of the divide and escarpment. This is partly due to the effects of increased altitude, but also to the general flow of rain bearing weather. Thus tall to very tall forests occur towards the coast and low to medium forests occur inland.(* 1)

The RFA regions virtually mimic the occurrence of temperate forests in southeast and southwest Australia.

In Victoria the West is much drier than the East of the State. this is a function of lower elevation and relief in the west combined with the influence of the warmer inland weather patterns.

The 0tways and the Wombat Forests are located in the only areas in west Victoria to receive more than 900min average annual rainfall. These two forests form the headwaters of important catchments that provide Geelong and other areas in West Victoria with vital water supplies. Population pressures on the highly fragmented islands of forest in the West of the state are far greater than in the East where the public forest estate forms a large continuum across the landscape.

Forest Hydrology Research interpretation and application in West Victoria

Historically forest hydrology research in Victoria has been focussed in the Ash type forests in the Melbourne Water, water supply catchments. The results suggest that following logging or wildfire an initial increase in runoff is expected over the first few years, then runoff reduces as regrowth establishes. Substantial reductions in streamflow have been observed and these reductions persist for a long

This research is relevant to the Ash type forests that are located in the water supply catchments in the Otways FMA. Many of the regions serviced from the Otways catchments are experiencing water shortages. It is most unfortunate that the hydrology studies in the Otways have been abandoned due to lack of funding and lack of political will.

Mixed species forests are not so well understood, only very limited research has been conducted in these forest types. Based on a small experimental area and limited research the MW Catchment Hydrology Team concluded that there was little or no impact on streamflow from wildfire in the drier mixed species forest.

These research outcomes form the basis of the Dismissive response from most foresters when concerns about the impact of log . on water yield in mixed species forest are raised

In 1995 the then Department of Conservation and Natural Resources commissioned A REPORT ON THE EFFECTS OF FOREST HARVESTING ON WATER YIELD AND QUALITY IN THE LERDEREDRG CATCHMENT Prepared by Pat O'Shaunessy, Tim Fletcher and Leon Bren for the Forest Management Branch of the Department.

This forum does not allow full discussion about this report suffice it to say that the community are concerned at many of the assumptions made in the report.

Under section six of the report the authors assume that retained overwood trees with the Shelterwood system limits the influence of the regrowth canopy by reducing the radiation load on the regrowth crowns and therefore transpiration. In fact the overwood trees that are supposed to have a dampening effect are removed a few years after the first harvest, the coupe is effectively completely converted to regrowth the exact scenario described in the worse case scenario.

The Lerderderg Report also puts forward the conclusion that land use patterns during the period have not caused important changes in water yield and quality. A forest hydrology student has however found that using the same data sorted in a different way it is possible to show that predicted runoff is lower than expected runoff

The community must have confidence in the science which forms the basis for forest management decisions.

The NRE Forest Planning processes, and institutional biases

The State Forestry Agency have in place a system of managing our forests which is supposed to include measures to protect soil and water values. There is much evidence that forest planners are focussed most strongly on timber production and other important environmental consideration are paid cursory lip service only.

The Forest Management Plan Process has failed to deliver community confidence or industry security, Portland still does not have a Forest Management Plan. The Code of Forest Practices for Timber Production Revision 2 watered down the recommendations for soil and water protection and is often poorly implemented on the ground.

Resource equity or 'all' Users pay

If farmers are being made to pay for water they withhold on their land then timber royalties should reflect the uptake of water they use grow commercial forests in the headwaters of catchments.

Water values in the West RFA region are poorly understood and the CRA process has failed to deliver the expected depth to information. 1 am very disappointed that the CRA process in the west has not sought to represent the value of water to the same degree the timber resource has been documented.

There is a current push to increase plantations and under the 2020 Vision, areas close to the Port of Geelong are being targeted. A question one of the other speakers might like to follow up on

What would the expected combined impact on streamflow be if the headwaters forest in a catchment was predominately regrowth 30yrs or less and the cleared originally grassed or tightly wooded middle catchment areas were converted to intensive plantation management?

The water catchments of West Victoria belong to our children we do not have the right to take away their options for water in the future

Location	Vegetation	annual rainfall (mm)	annual ET (mm)	**ET as % of rainfall**	Reference
Parwan (1-6) VIC	native & improved pastures some grazed	538	491	**91%**	Nandakurnar and Mein 1993
Lidsdale 1, NSW	grass weeds pine seedlings with little LA1	688	567	**82%**	Pilgrim 1982
Mt Gambier SA	grass	670	580	**87%**	Holmes and Sinclair 1986
Kylies Run, Tumut, NSW	improved pasture, grazed	944	691	**73%**	NSW State Forests (unpublished data)
Pomaderris, Eden, NSW	mature, dry eucalypt forest	973	775	**80%**	NSW State Forests (unpublished data)
Peppermint, Eden, NSW	mature, dry eucalypt forest	1103	826	**75%**	NSW State Forests (unpublished data)
Sassafras. Karuah. NSW	mature. moist eucalypt forest. rainforest	1434	1128	**79%**	Cornish 1993
Crabapple, Karuah, NSW	mature, moist eucalypt forest, rainforest	1639	1190	**73%**	Cornish 1993
Picaninny, Maroondah. V1C	old growth mountain ash forest, rainforest	1180	848	**72%.**	Vertessy 1996
Myrtle 1, Maroondah, VIC	old growth mountain ash forest, rainforest	1598	882	**55%**	Vertessy 1993
Picaninny, Maroondah, VIC	regrowth mountain ash forest (age 15-25), rainforest	1245	1061	**85%**	Melbourne Water (unpublished data)
Ettercon 3, Maroondah, VIC	regrowth mountain ash forest (age 33-44), rainforest	1631	1250	**77%**	Melbourne Water (unpublished data)
Reefton (1-6), Vic	mature mountain ash and mixed eucalypt forest	1298 1	1022	**79%**	Nandakumar and Mein 1993

Table above from the ***Impacts of Forestry on Streamflows: A Review*** *R.A.* Vertessy CSIRO Land and Water presented at Second Forest Erosion Workshop, May 1999 CRC for Catchment Hydrology. The column 'ET as % of rainfall' added by author, this column enables comparison of evapotranspiration as percentage of annual rainfall, the assumption is the some of the volume of water left over becomes stream flow. Regrowth mountain ash shows the highest percentage loss of the forest types, grass and pasture types also lost a high percentage of rainfall to evapotranspiration however this is probably due to low rainfall.