

## **Session 5A:            *The development and use of GIS in the Woody Yaloak***

### ***Catchment Project***

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#### **People, production and the environment:**

##### **The development and use of GIS in the Woody Yaloak Catchment Project**

The Woody Yaloak Catchment Group has for the past six years been actively involved in the practical development of a GIS for use in at the farm and group level. The culmination of this effort has been the use of the GIS within the catchment for planning, monitoring and sharing information. It has also resulted in Woody Yaloak creating a not-for-profit company with the help of the Corangamite CMA called Landscapes for the Future, to share our experiences, expertise and products with other catchment and network groups.

We see this tool as putting a lot of 'power' back in the landholder's hands. For as little as \$230 an individual can have a copy of the software on their home computer, with base data including a satellite image, contours, road and waterways. They can create data layers to store and retrieve their own natural resource, enterprise and quality assurance details. Training is also available for \$50 (if eligible for Farmbiz).

The GIS greatly assists members of our catchment group to plan integrated, across farm boundary activities whilst incorporating regional, state and even federal priorities in their planning considerations and report on the outcomes. We believe the GIS should also give Authorities and Agencies more confidence that priorities are being considered in the planning and actions of a group or individual and that the results are being recorded. But does this type of GIS have application of others in Landcare? Before addressing this question, it is worth thinking about the history of GIS development as seen from a landholder's perspective.

GIS has largely been the domain of the Agencies and Authorities, who's interest with this tool is not serving the individual but taking a more strategic regional, state or national approach. Whilst we don't criticise this position, what existed when we started had very limited application for the farmer. There were a number of issues. The software was too expensive, the program impossible to run unless you had a PHD in computers, data access was a minefield, the scale of data was inappropriate and there was no ongoing help. We were very lucky to have the persistence and vision of Rick Pope from Land Victoria in Ballarat, otherwise I doubt if the Woody Yaloak Catchment Group would ever had succeeded.

The Woody Yaloak Catchment Group continually puts the individual landholder as number one priority. The reasoning to us is very simple. In our catchment they control 85% of the land. If they don't implement actions on their farms, we won't achieve landscape change. Therefore we need high levels of sustained participation. The past decade of landcare activity by the Woody Yaloak Catchment Group clearly shows we can influence some of what an individual will do on their own farm. But we have learnt our success in influencing individual action is not simply dependant on the size of the grant, the awareness raising activities or the technical advice available (although this all helps a bit). It is about meeting and marrying their individual priorities with wider priorities, rather than imposing those wider priorities on them.

The Woody Yaloak Catchment Group has received funding of close to \$1.4 million from a variety of sources, mainly Alcoa and this has been matched by \$2.4 million in landholder cash and in kind support. In a 10 year audit we conducted last year (Woody Yaloak Annual Report, 2001), it revealed that these figures were less than half of the actual investment made by landholders in NRM in the past decade.

A tool that allows us to work with individuals and their neighbours to plan works, provide them with information about the NRM issues relevant to their farm but then also give them the capacity to 'do their own thing' is very attractive. It is taking a bottom up approach to build a catchment picture from the individual, rather than try to distil a regional picture down to meet an individual's needs.

The Woody Yaloak Catchment Group use the CIS system in three major ways.

## **Group planning**

The first is to support group planning. Woody Yaloak works on the concept of neighbourhood groups. These are groups of between two and 10 landholders, often neighbours who want to address NRM issues in their local area. The Catchment Group provides a facilitator to help plan what works they wish to do. They develop a five-year, multi issue, integrated plan. It takes about half a day sitting around the kitchen table. The plan is recorded on the GIS as individual projects, with separate dates, quantities of works, likely costs etc. The GIS provides the opportunity to look at cross boundary issues by projecting the image on the wall, to 'click on and off various layers and to draw on the image. It also provides a fantastic opportunity to make landholders aware of their neighbours issues as well as the regional priorities. Most importantly it allows these considerations during the planning phase.

The implications are obvious. Each individual plan can be amalgamated into a neighbourhood group plan. Then each neighbourhood group plan can be amalgamated into a catchment wide plan. To date Woody Yaloak has 32 neighbourhood groups and as we record more five-year plans on the GIS, we get a good picture of what works are anticipated in the future, where they are located and therefore what funding source may be useful to target. We also aim to leave a copy of the software with one member of each neighbourhood group.

The executive committee of the Woody Yaloak Catchment Group has a policy that we will make every attempt to support the implementation of group plans. This means the executive committee needs to apply to various parties for technical advice and funding. This tool is invaluable in aggregating these project bids as part of the application process.

Once a year each neighbourhood group reflects on their past work and revisits their future plans. It is very easy to change planned activities in the light of changing priorities by the individual and/or new knowledge. Yet immediately the plan is altered on the GIS, the catchment plan is updated.

The individual gets a print out of their plan and if they wish can purchase a copy of the software. This entitles them to the data free of charge and allows them to add personal information to their GIS. Adding things such as fertiliser use, crop yields, stock movement, spray records etc are common. This data is the property of the individual and only shared if the individual wishes to do so. Similarly the neighbourhood group data is retained by the Woody Yaloak executive committee and only amalgamated data is included in funding applications and group plans.

## **Managing information**

The GIS is an excellent tool for record keeping. Every project that is completed in the Woody Yaloak Catchment has to be inspected before payment is made. At this point photographs are taken and details of quantities and costs are adjusted to reflect the actual work done. A GPS and digital camera is used. Once loaded onto the GIS, reports can be generated to show where works have been done and can be filtered to isolated information pertaining to a certain funding source, location or activity.

Through a recent NHT project, we have also historically catalogued the 400 plus projects conducted since the Woody Yaloak Catchment Project started in 1992. The results of a decade of activity, which can be displayed quite quickly, is extremely satisfying and useful in future planning.

## **Sharing information**

The Woody Yaloak Catchment Group encourages innovation. We often fund projects that might not be mainstream but have potential to allow us to learn how to solve some issues we face. As projects are inspected any outcomes that are unusual or unexpected are documented and loaded onto the GIS and made available when the data is loaded with the next lot of software. Although we haven't done this yet there is real opportunity to link technical information with the data and through the web.

## **Challenges & opportunities**

Despite our application of the GIS in the catchment we face a number of ongoing challenges.

The first is the ability to provide facilitation support that makes the CIS a useful tool. Without the small group gatherings, the annual reflection sessions and the recording of completed projects, the GIS would be close to useless for us. Yet we constantly encounter the view that the planning activities were funded a few years ago, so why do we need to continue supporting them? This is short sighted in the extreme and shows the woeful understanding about what sustains voluntary participation.

The second is access to regional priority data at a scale that is meaningful at an individual farm level. Currently this is totally inadequate and disappointingly to us as we find those that hold the data don't have a strong desire to want to improve the scale because it doesn't fit their priorities. But regional priorities only make sense to a landholder when they are presented on a paddock or farm scale. If we can't deliver priorities at a local scale, why would we ever expect an individual to embrace regional priorities?

The dilemma of differing priorities is one we have grappled with since 1992. Our experience from the past decade would suggest the response of program managers to this lack of interest in regional priorities is to increase the financial incentive available. Sadly it is not that simple because it's tough to buy interest from someone who really wants to do something else. We see the GIS as a tool to help us recognise and acknowledge an individual's priorities and THEN we marry these with regional priorities. We have found this sustains voluntary participation.

We are attempting to overcome the data scale issue with a pilot project conducted on waterways in the Woody Yaloak Catchment. In partnership with the Corangamite CMA, the Authority has trained up one of our local landholders to conduct stream condition index surveys in the catchment. We collect the data to a standard protocol, using GPS and digital photography, and load it onto our GIS. We then share this data with the CCMA. It is of value to our Catchment Group and it provides a way of generating local data that can be scaled up to the regional level.

Trust is a key element of making this work. We trust that those in the CCMA we use this information in the form it is intended. This does not mean using information we provide that can be traced to an individual and at some later stage approaching them directly. If it is misused, it will lead to the demise of any future partnership.

**The new privacy act has further compounded this data-sharing dilemma. We are yet to fully appreciate the ramifications of the act but the initial signs are not good.**

The final challenge relates to our business Landscapes for the Future. We have already sold base packages, which consist of software, a GPS, data and training to three network Groups in Victoria. We have had many more enquires but the difficulty these potential purchases face is convincing the funding bodies and policy makers it would be a useful tool. There is simply no recognition of the value of having a GIS that works at the individual farm and small group level.

Despite these challenges it would be worth deflating some myths that seems to surround GIS, computer and landholders. Firstly landholders will embrace the technology and for some in our group the GIS was the first time they have ever confronted their computer! They can and do learn how to use the software. For most this level of comfort is achieved within two hours of commencing the training. They are comfortable using it as a planning tool if you have a good facilitator. Finally they will purchase the software and 'do their own thing'. There is a lot of talk about the need to build capacity within catchment and network groups. In our experience most of the good intention doesn't lead to increased capacity. We believe this tool does. It gives us ownership of the data, the ability to manipulate it and the information to make strategic decisions.