

Rivers in the Rangelands - What's Happening in the Lake Eyre Basin

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SUMMARY: The Lake Eyre Basin is a unique system. The very different characteristics of this endoreic system mean that theories, models and management techniques can not simply be transposed from coastal systems. There is a dearth of information and understanding about the Basin, and about cooperative natural resource management and planning processes. For it to be managed well this needs to be addressed.

Those living in and interested in the Lake Eyre Basin have designed and established a catchment management framework for the Basin. This framework brings together a diversity of interest groups and stakeholders to deal with possible resource use conflicts, including water, and the long term sustainable management of the Basin. It is a framework for integrated regional natural resource management. The challenges participants face include the enormous scale of the region, a dispersed, small and remote population, lack of adequate services such as communication, and lack of an adequate information base.

THE MAIN POINTS OF THIS PAPER

- The rivers of the endoreic Lake Eyre Basin have very different characteristics to coastal flowing rivers.
- People in, and interested in, the Basin have designed and are establishing an integrated catchment management framework to achieve ecologically and economically sustainable management.
- This framework has been community initiated and driven with a wide range of involvement from the beginning and is supported by, but independent from, all levels of government.
- Challenges we face include logistical difficulties, ensuring meaningful and diverse participation, managing conflict and a lack of Basin-wide information.

1. CHARACTERISTICS OF THE LAKE EYRE BASIN

The Lake Eyre Basin covers 1.14 million km² of central Australia, approximately one sixth of the continent and equivalent in size to the Murray Darling system (See Figure 1). Lake Eyre is the terminal point of the Basin, one of the world's largest endoreic drainage basins, and sits about 15m below sea-level in arid central Australia (Kotwicki, 1986; Walker et al. 1997). The Basin contains areas of high environmental and economic value, and much cultural heritage. It comprises parts of Queensland, South Australia, the Northern Territory and New South Wales. Land uses include pastoralism, Aboriginal activities, mining, petroleum exploration and production, conservation and tourism.

The major river systems of the Basin are the Cooper, Georgina and Diamantina; the rivers west of Lake Eyre, the Neales and Macumba, are much smaller in catchment area. Desert rivers in the Northern Territory portion of the Basin, such as the Todd and the Finke, run into

the Simpson Desert. The only river entering Lake Eyre from the south is the Frome.

The three major river systems begin in the higher rainfall regions of the catchment in the north and east and travel south and south west through the arid regions of Queensland into South Australia. They originate in

the biogeographic regions of the Mt Isa Inlier, the Desert Uplands and the Mitchell Grass Downs (Thackway and Cresswell, 1995), move down into the Channel Country where, due to low topographic relief and low gradients, they disperse into huge numbers of anastomosing channels, waterholes, wetlands and floodplains. This Channel Country provides a vast natural irrigation system. In times of very high flow the rivers may reach Lake Eyre and the Simpson-Strzelecki Dunefields - the Georgina and Diamantina meeting at Goyders Lagoon and continuing on from there as the Warburton River, the Cooper flowing on from the wetlands of the Coongie Lakes. As the rivers have their catchments in higher rainfall areas they provide a moisture regime in arid regions of the Lake Eyre Basin that would not occur from rainfall alone (Purdie, 1984). The rivers of the Basin are ephemeral, with streamflow highly variable and seasonal (DNR, 1997). Some waterholes are permanent, however, providing important refugia, allowing later dispersal. Increasing aridity towards Lake Eyre, the huge dispersal system, and high transmission losses mean that the volume of flow decreases down the catchment (DNR, 1997). Although the Cooper is the largest of the rivers it rarely flows into Lake Eyre, reaching it only eleven times since 1890. The Diamantina river contributes the majority of water to Lake Eyre. Every two years, on average, the Diamantina reaches the Lake, providing sufficient flow to cover a small portion of the Lake's bed (Badman et al, 1991).

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Birdsville meeting. They included that the group will:

- Promote ecological and economic sustainability in the Basin
- Develop and communicate a shared strategic vision across the Basin
- Provide a forum for Basin-wide issues
- Provide a communication channel with governments
- Integrate priorities for action plans and funding
- Facilitate knowledge flow and development for the Basin
- Apply social justice principles so that diverse views are respected and considered

The meeting agreed that the Coordinating Group would be constituted of an independently appointed chair, nominated members of catchment groups, other selected individuals to fill required knowledge/skills gaps, and up to 5 government observers (QLD, SA, NT, NSW, Federal). Catchment group representatives must form the majority on the group. The independent Chairperson has been appointed to the Coordinating Group which has met and is finalising its membership.

Following another round of public meetings in the first half of 1998 two catchment committees have so far been formed - the Cooper Creek Catchment Committee and the Georgina/Diamantina Catchment Committee. The committees represent a wide range of stakeholders (though there is room for improvement), predominantly from within each catchment. They include upstream and downstream interests, various industry groups such as pastoralists, mining and petroleum, and tourism, local and State government, Aboriginal groups, Landcare, and so on.

The two catchment committees have held 'Working in Groups' workshops, writing visions and missions, developing group skills and planning their first year. They are proceeding with the development of catchment management strategies basing them upon issues identified (discussed below) and information gathered to date. The issues will be prioritised and actions identified. These will be distributed for further public input before being finalised.

Other regions are exploring ways they can participate, perhaps without forming catchment committees if not appropriate.

3. NATURAL RESOURCE MANAGEMENT ISSUES

At the public meetings participants were asked what they thought the major natural resource management issues are for the Lake Eyre Basin. The responses helped identify the issues to be considered in determining the most suitable option for future management of the Basin.

Examples of major issues raised and how they relate to catchment management include:

- Weeds and pests. These were identified as issues at every meeting. Developing regional strategies would help to coordinate and implement policies and on-ground work and activities, making individual efforts more effective.
- Surface water management. This was another major issue, particularly in Queensland and South Australia. Once again, catchment management may help by providing a process for: long term planning; ensuring all points of view are heard; ensuring that decisions are based upon adequate information; and avoiding multiple ad hoc decisions that result in long term negative impacts on the catchment and its people.
- Security of tenure. This is a vital issue to people in the rangelands and was voiced at meetings throughout the Basin. It is an issue that we are less able to deal with directly through catchment management. What we may be able to do is provide a forum for communication between groups.

Other issues raised at the public meetings included: uncontrolled tourism, economic viability, grazing pressure and pasture management, the Great Artesian Basin, climatic variability, chemical contamination, education and awareness, biodiversity conservation, salinity, and diversification (Lake Eyre Basin Steering Group, 1997).

4. CHARACTERISTICS OF THE LAKE EYRE BASIN FRAMEWORK

Lake Eyre Basin catchment management is in its infancy. The framework is in the process of being established, and there are likely to be many changes in the early period as we learn what does and doesn't work. Looking at the process so far, however, there are lessons to learn. Several factors contributed substantially to the credibility and acceptability of the process to stakeholders. It is a community initiated and driven process, there has been a range of involvement from the very beginning and it has independence from, but links with, all levels of government. It is an example of the move towards pluralist planning. Limitations and constraints with the process include logistical difficulties and a lack of understanding of those, resourcing, ensuring meaningful and diverse involvement, and managing conflict.

4.1 Community initiated and community driven process

As this process was initiated by some members of the community within the Basin (with government support) it was less frequently seen as a measure being imposed from outside, or by government. For some the motivation to establish community catchment management was as an alternative to the imposition of a management framework by government that they

would have no control over, specifically World Heritage listing. The establishment of a catchment management framework was not a *fait accompli* but a choice. And through consultation stakeholders could create an appropriate model for themselves.

A Heads of Agreement for the management of the Lake Eyre Basin which the Commonwealth, South Australian and Queensland governments are signatories to, is in the process of being negotiated by these governments in parallel to the establishment of the catchment management framework. This will hopefully ensure, particularly through the establishment of a Ministerial Council, that the catchment management framework is not operating in a vacuum but has direct access to the policy makers.

4.2 Range of involvement from the beginning

It was far sighted of those who initiated the very first meeting that they organised for a cross section of stakeholders to be involved. A lot of work went into making the contacts, encouraging attendance, employing a professional facilitator and planning the meeting. This ensured that it was not seen as a power grab by one particular group and that participants were able to move on to the next stage if they chose - which they did by forming the steering group and preparing its terms of reference. Various groups contributed funds, an indication of their commitment, and have since contributed substantially in kind. Having a steering group comprised of the various stakeholders encouraged their constituents to work with the process rather than to undermine it. It opened up channels for broader communication, for example organisational newsletters, and, most importantly, the various stakeholders had a chance to be involved in determining the outcomes.

4.3 Pluralist planning

Dale and Bellamy (1998) discuss the trend away from rationalist views of regional resource use planning towards pluralist views. Rather than constituting only a technical, managerial approach Integrated or Total Catchment Management now attempts to encompass diversity - of stakeholders, of values and of resource use requirements - and to deal with the conflict this may generate. The Lake Eyre Basin process is consistent with the pluralist views of planning "that encourage negotiations among diverse interests in the community within the bounds of law and government bureaucracy" (Dale and Bellamy, 1998, p25).

4.4 Logistical difficulties

Admittedly the Lake Eyre Basin has a small population, approximately 57,000, however there are the increased difficulties of distance, accessibility (roads can be cut regularly), and lack of communication infrastructure (eg. inadequate infrastructure for internet access, mail deliveries once a week). These present obvious challenges in running effective consultation and make community participation unusually difficult. To attend

a steering group meeting last year two members drove over three thousand kilometers. Additionally the consultation process over the last two years has been constrained through having only one person (with a 4WD) employed to cover the region. Until people have contended with the logistical difficulties of outback Australia themselves it seems impossible to gain an understanding of the time and resources required for these processes. There has been a constant need to balance the pressure applied by government time frames for funding and the time required for adequate and informed consultation and involvement.

4.5 Encouraging meaningful and diverse participation

Despite having a wide range of representation on the original steering group this has not always constituted meaningful participation. Nor will it ensure that the established committees continue to capture the diversity of interests involved in the Basin.

Positions were made available for ATSIC representation on the steering group but there has been little involvement by Aboriginal interests in the Lake Eyre Basin process so far. The conventional forums for public consultation do not attract wide Aboriginal participation. To consult more fully would require the time to build trust and share information and views in less threatening or public ways. It is difficult to have adequate Aboriginal involvement in a body that covers huge regions except through ATSIC as it is not appropriate for individuals to speak for another's country. This point was made clear in an informal (and not public) get together. In fact many outback people prefer to talk one to one rather than in public forums and prefer to have information verbally conveyed rather than reading substantial amounts.

It is possible to address this problem through establishing mechanisms for participating in different ways. Examples of this include involving local people in any on-ground projects, establishing partnerships with local communities to initiate projects, taking the time to talk to people informally, collecting local knowledge as appropriate and using it in decision-making processes, and ensuring access to any information produced. These options are relevant to any community in the rangelands but should be targeted to those less likely to participate otherwise.

4.6 Managing conflict

One of the motivations for establishing catchment management in the Basin was to develop constructive methods for dealing with resource use conflict; methods that involved the community and encouraged the diversity of opinions to be taken into account.

The first two catchment committees recently established in the Basin are already very different. The major reason for this is that the Cooper catchment has a history of conflict over a single issue, water

management. People in the Georgina and Diamantina catchments are not divided by a dominating single issue yet, but see that the potential is there. It provides impetus to establish the catchment committee and develop a catchment management strategy - a possible way of preempting and managing conflict over natural resource use.

Unfortunately as Dale and Bellamy (1998, p123) state "...we have found that regional resource use planning in Australia remains a largely centralised process of governance, often with only limited mechanisms for facilitating equitable negotiation among key resource users." The individuals and committees in Lake Eyre Basin catchment management have a steep learning curve ahead with few precedents to use regarding equitable negotiation.

5. INFORMATION AND CATCHMENT PLANNING

Now that the first catchment committees have been established in the Basin and are embarking upon developing catchment strategies we are more clearly confronted with the need for information. It is important for these planning processes not to be driven to collect information for information's sake but to identify what their goals are and what information is required to fulfill them. It may be interpretive information for tourists to help them understand and care for the area (a good example of this is the document "More than the eye can see" produced by the Maree Soil Board), or it may be more complex, such as determining safe grazing capacity.

It is clear in many of our meetings that there is not a shared understanding of information - what it is or how it can be used. When confronted with complex problems and divergent views the easy option is to see information as taking the role of Solomon. All we need is the right information and the problem will be solved. Even if it does not provide The Answer, it is believed to be something objective and outside of our political realm - the religion of information. Yes, we do need a solid foundation of information for our strategies and projects, but when it comes to the resolution of resource use conflict in particular, we will need a range of skills and tools, of which information will be only one.

5.1 Lack of information

One of the immediate problems facing our catchment committees, and which different interest groups and government departments have been contending with for some time, is the lack of information about the catchments and Basin.

The Queensland Department of Natural Resources has been developing a Water Management Plan for the Cooper Creek. The Cooper travels 1 523 km and has a catchment area of 306 000 km² (Kotwicki, 1986). Of the ten stream gauging stations originally on the

Cooper only four are still operating. The majority were decommissioned in about 1988 (Wiggins, pers com). At that stage they were being serviced from the coast so it would have seemed a sensible economic decision to do so.

Rivers of the rangelands have been the poor cousins to coastal catchments in the way of research and production of information. Frequently we receive catchment management leaflets and posters for public education purposes that have pictures of a river stretching from mountains down to the sea with green and distinct banks and only one channel. (As committee members say we should also be educating the 'fringe dwellers', the majority of Australians who live on the edge of the continent, about our rivers and catchments and how different they are.)

An incredibly frustrating deficiency is in Basin-wide information. Each State holds some information about their portion of the Basin, such as land systems, however the classifications and scale are different, making border matching difficult. In many cases data sets just stop at the border. Accessing and standardising the relevant data of the States is a time consuming hurdle.

There are a number of solutions to the above problems, some of which are underway in the Lake Eyre Basin process. They include the following:

- Identifying areas of insufficient knowledge in the region;
- Developing a research strategy;
- Negotiating research partnerships with organisations, governments, students, locals, or industry;
- Lobbying for increased research funding for arid rivers systems and ecosystems; and
- Establishing cooperative processes between States to develop inter-State information systems.

5.2 Ability to use and interpret information

Individuals on catchment committees and other regional planning groups are dealing with increased quantities of information, about an array of different topics and in a range of forms. And they have a range of capacity to manage and interpret information. As Andrew Campbell (1996) says, "All over Australia we are expecting cobbled-together groups of people with varying levels of formal education, many of whom are part-time or voluntary, all of whom are busy, to collectively develop strategic approaches to managing change." His description is certainly accurate of our groups, though cobbled-together sounds rather ad-hoc. This is not an argument to disband the groups or cast aside their work, however. Rather it emphasises the need to provide people with the resources, including for capacity building, to manage information. In the last round of Natural Heritage Trust funding the Lake Eyre Basin groups were successful in gaining funds to

support the two existing catchment committees, including funds for capacity building.

Suggestions for addressing the above problems include:

- Allocating resources to develop people's capacity to handle large quantities of diverse and complex material;
- Ensuring that information is available in accessible forms;
- Creating research partnerships with community groups and individuals so that they can participate, learn and help to direct outputs so they are relevant to, and able to be used by, natural resource management groups.

6. CONCLUSION

Through a participatory process involving residents, government representatives and interest groups a catchment management framework has been designed and initiated for the Lake Eyre Basin. Many different people and organisations have put an enormous amount of time, effort and resources into the process. Encouraging wider involvement will continue to be a key part of catchment management in the Basin.

As catchment committees develop and implement their catchment strategies we will see results in on-ground outcomes; increased participation, and capacity to participate, in natural resource decision-making by a range of groups; and an increase in the availability of information. To achieve this we need to learn how to manage conflict, ensure meaningful and diverse participation and maintain this as a community driven process.

7. REFERENCES

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