The Harvey River Restoration Taskforce: a Novel Community-based Management Scheme

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Introduction

The Harvey River Restoration Trust (HRRT) was proposed in 1998 by the then Water & Rivers Commission of Western Australia (WRCWA) in its report titled "The Proposed Harvey Basin Surface Water Allocation Plan" (WRAP14 1999). The Trust's purpose would be to promote the rehabilitation of waterways while meeting water supply and drainage objectives. As part of the formal environmental approval for the construction of a new Harvey dam, the Water Corporation of Western Australia contributed $750,000 to the Trust to ensure that ecological values that may be lost or degraded from the construction of the dam would be offset through river restoration projects in other areas of the Harvey River Basin. Funds have been allocated and delivered via a strategic river restoration plan to broad-based community projects for the protection and enhancement of waterways and wetlands. This paper discusses the success of a community-based management scheme that is delivering multiple benefits. This approach to funding and managing river restoration is unique in Western Australia and will create long-term benefits for the Harvey River Basin. This paper also discusses its successes and lessons learned.

The Setting

The Harvey River Basin is about 110 kilometres south of Perth, Western Australia's capital city (see Figure 2). The Basin is approximately 2000 km^2 and includes two irrigation districts. Approximately 29% of the Basin is in State Forest and 45% has been cleared. The climate in the area is a warm temperate Mediterranean type with distinct seasons. Annual rainfall varies from 840 mm to 1200 mm. The Darling Scarp separates the Yilgarn Block (a relatively stable shield area) from the Perth Basin. The western side consists of sedimentary rocks extensively covered by Quaternary deposits (WRCWA 1998). Discharge is from the catchment areas of the Darling Range, down the Darling Scarp and westerly to the Indian Ocean across the Swan Coastal Plain through the Ramsar-listed wetlands of the Harvey River system.

The Issues

The Harvey Basin Surface Water Allocation Plan (WRCWA 1998) recognised that there would be a loss of water resource values immediately upstream of the new Dam. During the public consultation process (1997/98), the community expressed the view that there should be some replacement of the water resource values that would be lost if the development proceeded.

The Harvey River Basin also lies in the central near-coastal area of the southwest of Western Australia (SWWA). According to the Southwest Australia Ecoregion Initiative (SAEI)(n.d.), the SWWA is recognised as one of the top 25 biodiversity hotspots of the world. The SAEI also states that the SWWA has the highest concentration of rare and endangered species on the Australian continent. Climate change predictions for the SWWA include:

- decreased rainfall and runoff (see Figure 1),
- increased temperatures and evaporation, and
- increased seasonal variation and storm intensity.

This will have a significant effect on water resources, landscape, biodiversity and people. More than 90% of all potable catchment areas in the Darling Range have been harnessed for urban and agricultural purposes. The competing natural and anthropogenic demands on water are one of Western Australia's greatest challenges (Hick, P 2006, pers. comm.).

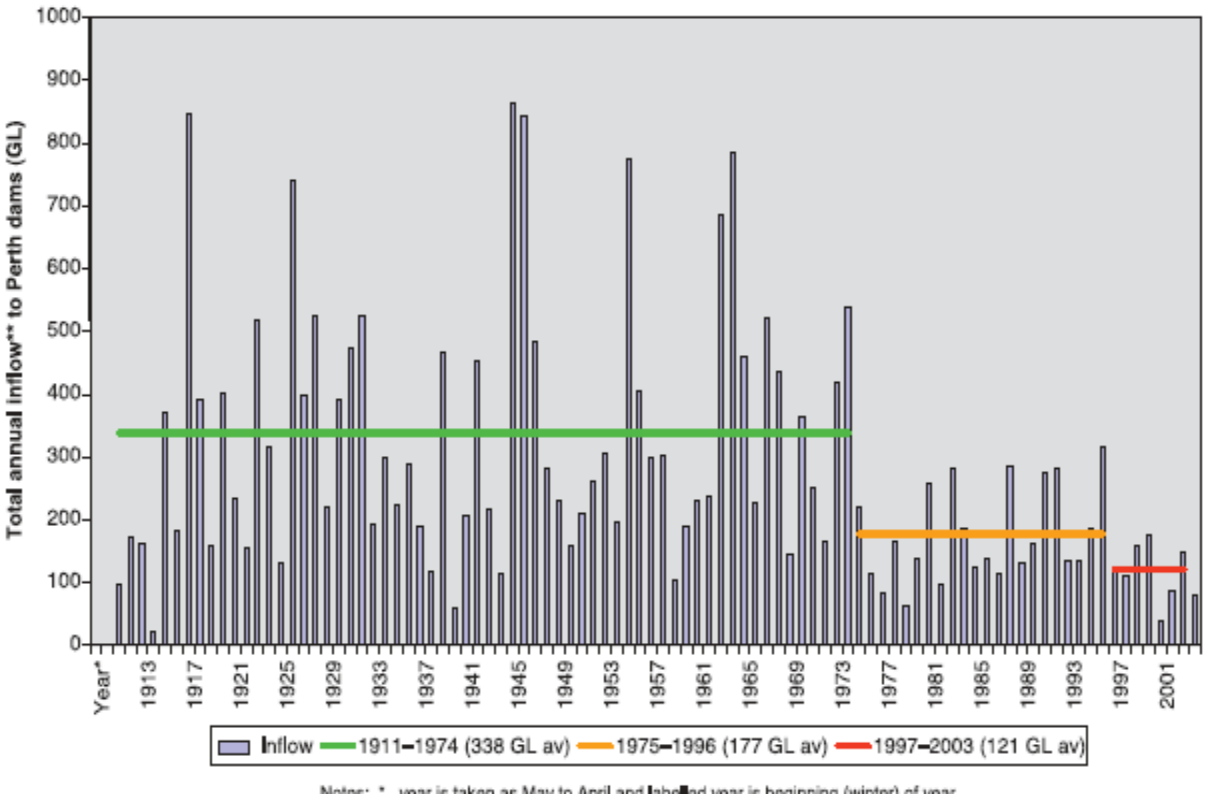

Figure 1. Annual streamflow to all Perth dams (1911 – 2004) (Water Corporation, 2003)

The Wentworth Group of Concerned Scientists in its report titled "Blueprint for a National Water Plan" (July 2003) recognised that "our southern working rivers do not have enough water to sustain their health" and also commented that "the health of our rivers, wetlands, estuaries and groundwater systems is fundamental to the future of our cities, industries, communities and agriculture across Australia" (p2).

The Wentworth Group also identified a number of urgently needed water reforms including the engagement of local communities and ensuring public funding to support community-based catchment, river and estuary management (p3). While the timing of the formation of the Harvey River Restoration Trust was triggered by the need for a new Harvey dam, evidence of climate change and anthropogenic depletion of our natural capital in the SWWA suggests that the journey did not commence too soon.

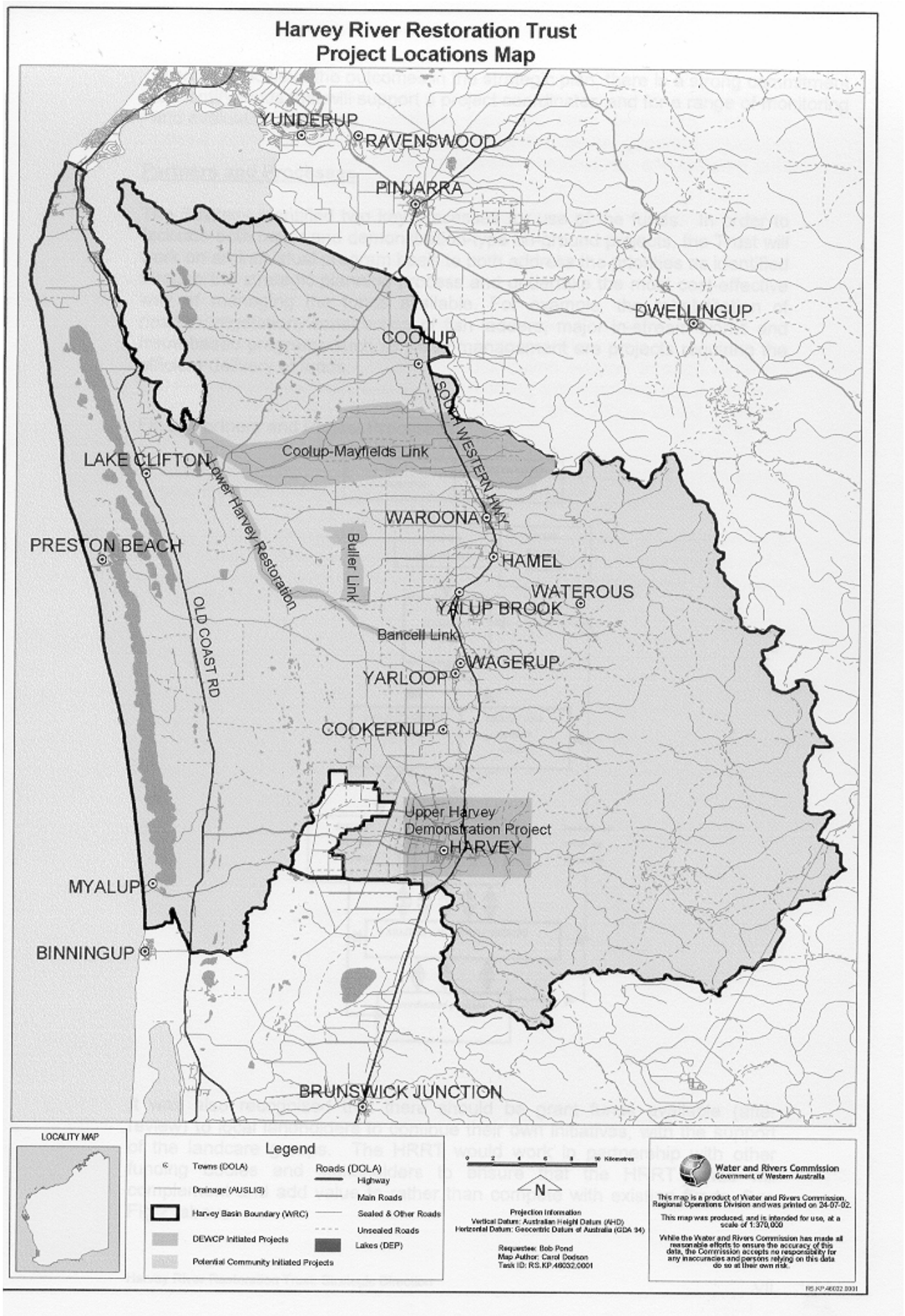

Figure 2. Harvey River Basin (WRCWA, 1999)

The Planning

In 1999, the WRCWA prepared a second report titled "The Harvey Basin Stream Restoration Trust – a Proposal for Funding Stream Restoration Works in the Harvey Basin (WRP14)". The Report set out the rationale for establishing a Harvey Basin Stream Restoration Trust, its aims and recommendations and structure (see Figure 3). It also identified the need for a Harvey River Restoration Trust Community Panel (the Community Panel) to be constituted with membership as follows:

- the WRCWA (now the Department of Water)
- the Water Corporation of WA
- local government (the Shires of Harvey & Waroona)
- the Harvey & Coolup Land Conservation District Committees (LCDCs)
- the Department of Agriculture (now the Department of Agriculture & Food)
- representatives from the Harvey Basin community

There was a deliberate decision to ensure that government agency representatives did not dominate the Community Panel and this is reflected in the make-up of the membership.

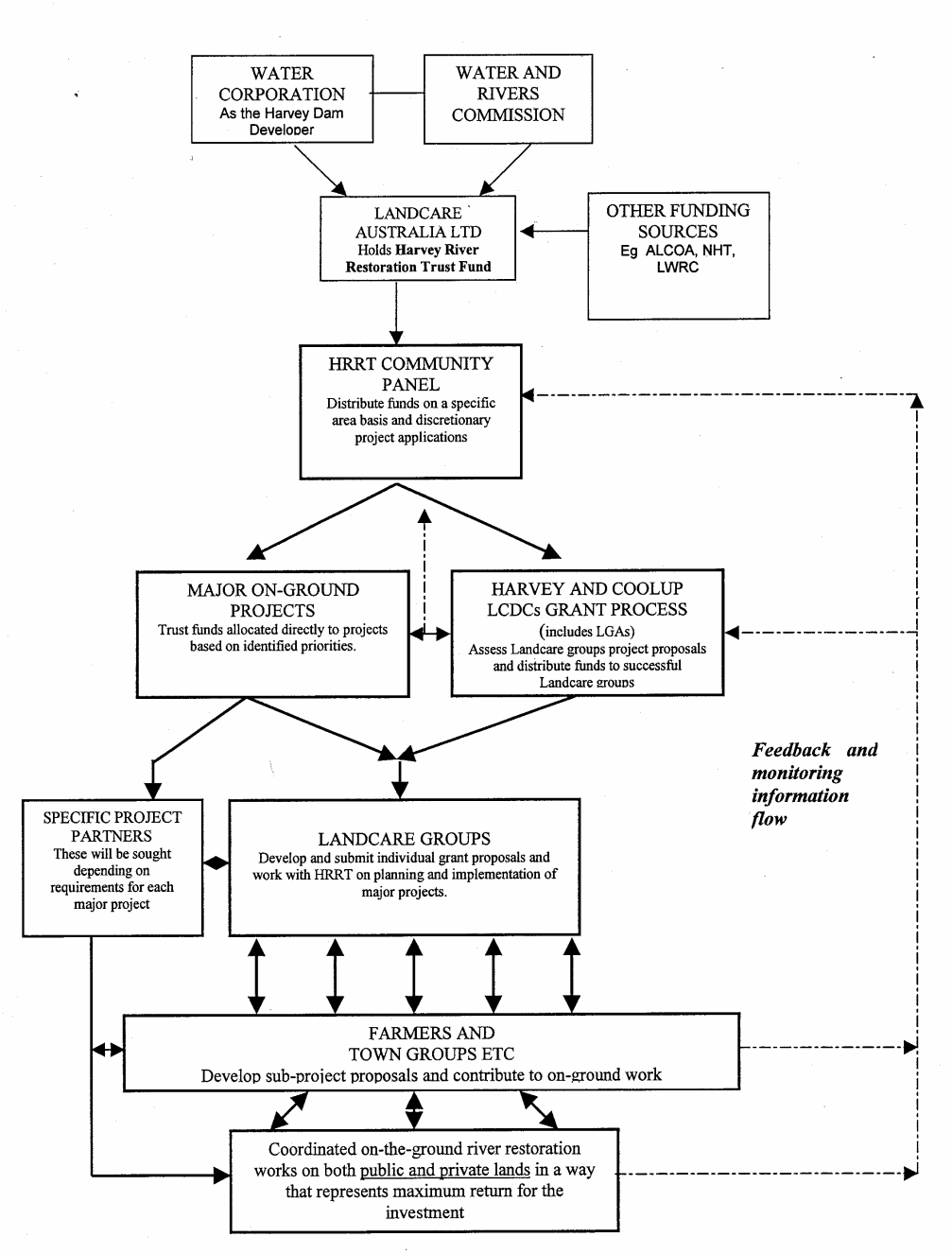

Figure 3 The Harvey River Restoration Trust & its relationship with stakeholders

The Timing
The Community Panel met for the first time in May 2000. At about the same time, the Water Corporation made the first of five annual payments of $150,000 to the newly established Trust Fund set up under the auspices of the Western Australian Landcare Trust (WALT). A Memorandum of Understanding was drawn up to formalise the arrangements between the Water Corporation, the WRCWA and the WALT.

In 2003, the funds were transferred from the WALT to Landcare Australia Limited (LAL) and have been held in trust by LAL since then. In 2005, the Community Panel received legal advice that the Harvey River Restoration Trust was not set up as a "trust" in the legal sense and should modify its name so that it did not include the word "trust". To retain the widely accepted acronym, the HRRT became the Harvey River Restoration Taskforce (Inc.).

The total amount that the Water Corporation had committed to the Trust Fund was $750,000. This amount was based on an estimate (by the WRCWA) of the cost to restore the equivalent of 188 ha of riparian zone that would be inundated by the new Harvey Dam when filled to capacity (see Table 1).

Item	Cost $
Fencing both sides at $4510/km for 24.6 km	110 950
Manual noxious weed removal and follow up control at $330/ha for main streamline riparian zone of 100.49 ha	33 162
Revegetation at 3000 plants/ha $3000/ha for 188 ha	56 400
Battering and small riffles $2500/km for 2 sites every 1 km	50 000
Major riffle restoration $16 000/sequence for 10 sequences	160 000
Major woody debris sites $12 000/site for 10 sites	120 000
Crossings $2500/crossing for 15 sites	37 500
Watering points $2500/ point for 15 sites	37 500
Foreshore condition surveys $550/km x 2 sides for 24.6 km	27 060
Project management	75 000
Monitoring and evaluation	50 000
Total cost	**757 572**

Table 1. How the $750,000 was calculated

The first major task for the Community Panel was to identify a river restoration scientist and a social scientist who would work together to prepare a strategic plan based on local knowledge, community priorities, and scientific input. The plan became known as the "Harvey River Restoration Trust – Strategic Directions (2002 – 2007)".

The brief to the river restoration planning consultants was to “ensure that the Trust’s funds would be invested where the most beneficial impact would be achieved”. The plan took several years to prepare and was subjected to a technical review and a range of meetings and forums with key stakeholders and the community. The consultation process enabled the HRRT to develop a Mission Statement on how the Vision would be achieved:

Vision

The Harvey River Basin, from the (Darling) scarp to the (Harvey) estuary, is valued as an ecological, recreational, productive asset and is supported and maintained in terms of clean water, native fauna and flora, and sustainable ecosystems.

Mission

The Harvey River Restoration Trust is a community-owned organisation acting as a catalyst both within and beyond the Basin for restoration and protection of in-stream and riparian values.

Key Objectives

- Restoration of riparian (streambank) and in-stream values.
- Protection and enhancement of natural assets: existing areas of ecological value.
- Improved water quality and environmental flows.
- Ensure sustainability of program impact.

Strategic Approaches

- Development of a five-year operations plan.
- Leverage additional resources for similar and/or complementary projects using HRRT funds as partnership funding.
- Use existing networks with relevant agencies (eg Crossing the Boundaries Project, the Peel-Harvey Catchment Council, Alcoa World Alumina Australia) for policy and information support.
- Use an adaptive management process based on Adaptive Environmental Assessment and Management Principles (AEAM).
- Research and monitoring aimed at improving future river restoration efforts as a key plank in the implementation of the Plan.

Key Strategies include

- Identify and highlight areas of highest potential for successful and cost-effective restoration.
- Restore channel form and function within existing streams and drains.
- Establish ecological corridors, building connectivity between existing work and remnant vegetation.
- Conserve areas with high ecological value, particularly at the top of the catchment to ensure increased downstream benefits.
- Promote work in the middle reaches of the basin to restore in-stream habitats.
- Encourage erosion and sedimentation control measurers.
- Control livestock access to waterways.
- Promote the value of Landcare and river restoration to all stakeholders in the Harvey River basin.
- Support local LCDCs and other Landcare groups
- Use a range of cost-effective tools to closely monitor HRRT activities to measure, identify and promote best practice.

Priorities

Six high priorities emerged from the technical reviews and subsequent community consultation. They were:

- Revegetation and in-stream works on Bancell Brook.
- A major ecological corridor linking the scarp to the Buller Road Reserve and the lower Harvey River.
- Revegetation and streambank stabilisation in the lower Harvey River.
- Extension of ecological links through Coolup and along the Mayfield Drain
- Demonstration projects close to the town of Harvey.
- Maintain the existing demand driven approach for individual landholders, particularly linking previous work or adding value to the major projects proposed.

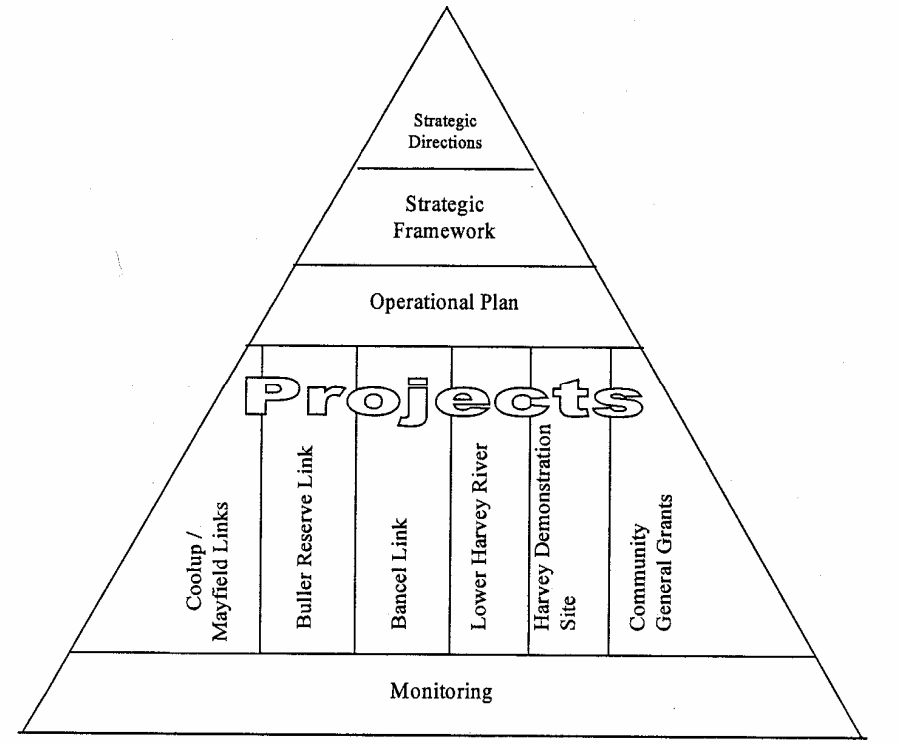

Figure 4. The Strategic Framework showing how the priorities are linked with the overall strategic directions of the HRRT

The Implementation

Landholder Projects

Landholders are able to apply for funding for fencing and revegetation of wetlands and waterways. Applications are made to the HRRT Community Panel and are assessed to ensure that the key objectives will be met. Applications must be matched 50:50 between the HRRT contribution and the landholder's contribution. However in-kind contributions such as labour can be used.

A total of $2,200 per km is available from the HRRT for fencing if it is erected by the landholder as their in-kind contribution of labour is deemed to also be $2,200. The above funding rate is higher than previously available through LCDC's or Envirofunds because the HRRT has introduced minimum fencing standards. From previous experience, projects funded by others often had poor quality fencing installed. This was not sustainable and caused problems if the land ownership changed, or if the fencing became degraded. The HRRT has taken this step to ensure that fencing will remain for at least 10 years.

As part of waterways and wetland protection projects, applicants are able to receive funding towards weed control, seedlings, off-stream watering points and stock crossings. They also need to be matched in-kind as discussed above. The HRRT has a number of minimum requirements for "Rivercare" projects. They are:

- Stock needs to be permanently excluded from the planting area, with both sides of the watercourse fenced.
- Revegetation needs to be at least 3 rows with 2-3 metres between each row.
- Composition needs to be at least 65% shrubs and must include a wide range of species.
- Species must be indigenous to the region and provenance correct seed and seedlings used.
- Weed control prior to planting is compulsory.
- Landholders are responsible for all ongoing care and maintenance.

Once the project is completed, it is assessed by the HRRT's Rivercare Officer before payment is authorised. Occasionally on large projects a 'part-payment' will be made on satisfactory progress.

Community Projects

Funding is also made to groups for strategic community projects that are proposed by community groups. These may be schools, LCDCs or Landcare groups. Groups and landholders are able to apply for funding for fencing and revegetation of wetlands and waterways. Applications for funding are made to the HRRT Community Panel and are assessed on the following criteria:

- Restoration of riparian values (stream bank) and in-stream values
- Protection and enhancement of natural assets: existing areas of ecological value
- Improved water quality and environmental flows
- Sustainability of program impact.

Funding for fencing is on the same basis as for landholder projects. However applicants for waterway and wetland protection proposals are able to receive funding towards weed control, seedlings, off-stream watering points and stock crossings. Community projects have similar "in-kind" requirements to landholder projects; ie. the same minimum requirements apply and assessment by the Rivercare Officer before payment is authorised.

Community Project Uptake

Community project funding uptake has been decreasing in recent years although the reasons for this are not entirely clear. However, it has been suggested that it may be due to:

- Exhaustion of landholders willing to complete landcare type activities.
- Greater percentage of high value, high cost (per unit area) irrigated land.
- Restrictive nature of funding (specific funding objectives and conditions).
- Inability for funding objectives to produce economic gains on-farm.
- Labour intensive fencing work particularly where rivers tend to meander.

The Achievements

Since late 2003 the HRRT has delivered almost $55,000 in community project funding. This has resulted in 16.7 km of watercourses and wetlands being fenced and more than 37 ha of riparian land being rehabilitated or restored. More than 20,500 native seedlings have being planted and a demonstration site has been established on the outskirts of the town of Harvey.

The Lessons Learned

- The strategic river restoration plan took much longer to prepare than anticipated. Originally it was thought that it could be done in one year. It took nearly three years and this caused a loss of interest by some landowners and was a source of frustration for Community Panel members who were anxious to commence on-ground works.
- The uptake was slower than expected and some attributed this to the HRRT commencing at the end of a Decade of Landcare. It is possible that landowners who were willing to carry out landcare and rivercare work did so with funding from the earlier NHT schemes.
- Establishing the Community Panel was not as easy as first thought. Identifying and retaining community members on the Panel was initially frustrating. Monthly meetings on Thursday evenings can involve considerable travelling for some members as well as conflicts with work, Council and Landcare meetings. On occasions, the Community Panel was inquorate and could not effectively transact business.
- The need for a Rivercare/Project officer was not identified for several years. However, once the Strategic Directions Plan was adopted, it became evident that it could not be implemented by the Community Panel alone. Funding for one full-time equivalent (FTE) officer was arranged and a suitable person was recruited for the position. This made an immediate difference to the implementation of the Plan.
- As mentioned previously, the Harvey River basin includes two drainage districts. The drainage assets are owned and maintained by the Water Corporation. The Corporation has a legal obligation to ensure that agricultural land in the drainage districts is not inundated for more than 72 hours at a time. This means that the drains are maintained in such a way that compliance is assured. This has created some difficulties for river restoration treatments being applied to many of the drains. The Community Panel is negotiating with the Corporation to establish ways of restoring some drains in such a way the Corporation will still meet its legal obligations. A trial has been suggested and will be pursued.
- Partnerships have been invaluable. To date, the most successful projects have involved partnerships with a local high school and agricultural college, two universities and Alcoa World Alumina Australia. The Community Panel will continue to seek partnering opportunities.

Concluding Remarks

The concept of funding a river restoration trust as an offset for constructing a large dam was unprecedented in Western Australia, and possibly Australia. There was no model to follow and from the outset, there was a lack of confidence that the initiative would succeed. Indeed, some still question whether the funding of a river restoration trust is a valid offset in the case of a new dam.

The perception at the outset of the HRRT was that the funds would be fully expended after five years. At the time of writing, the HRRT has just commenced its seventh year and has only expended a fraction of the funds held in trust by LAL. Part of the reason for this can be attributed to the time taken to commence implementation. During this time, the interest earned was compounding while only a minimal amount was being expended. The authors expect that it may take at least another five years to fully expend the available funds.

Finally, the authors have not attempted to determine whether the HRRT concept has succeeded or failed nor has there been an attempt to benchmark this against other river restoration schemes. It is pioneering with respect to river restoration in Western Australia and possibly Australia. This paper has attempted to document the steps along the way and comment on progress to date. The Community Panel holds a shared vision that it is steadfastly working towards. There is a lot of interest and goodwill among the Harvey Basin community and this is increasing as successful projects are completed and demonstration sites are established. The optimistic view is that the HRRT will meet and possibly exceed expectations. While some evidence is here, only time will tell.

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The authors also wish to acknowledge the late Dr Luke Pen, whose work on river restoration in Western Australia, and in particular, the Harvey River will continue to improve our natural environment for the enjoyment of future generations.

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