

Economic and Cultural Values of Water to the Ngarrindjeri People of the Lower Lakes, Coorong and Murray Mouth

Report to the Commonwealth Scientific and Industrial Research Organisation (CSIRO)



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Description: Kungari (swans) in flight along the Kurangk (Coorong).

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FOREWORD

As an Ngarrindjeri man from the Lower Lakes and Coorong of South Australia, I have maintained my connection to my country. The teachings of my Elders (past and present) is not forgotten. The emphasis of our roles, responsibilities and spiritual / cultural connections to our Mother, Mother Earth, is as profound yesterday as it is today and will be tomorrow. We must not neglect these mandatory responsibilities.

Throughout my adult life the importance of our natural resources has become clearer. It is the responsibility of each of us to protect and preserve our natural environs. As a natural resource, water is critical to the First Peoples of Australia in delivering certainty for our culture, spiritual being, customs and economic rights. The lands and waters are the embodiment of life.

As young men, we farmed our lands and waters by hunting animals, birds and fish; and gathering swan, turtle and duck eggs, berries and medicine plants to feed and sustain our families and our nation.

Now as an Elder in my community, it is crystal clear that water and land cannot be separated from each other – they are one and the same.

Today, I continue to fight and strongly advocate for quality water and for the health of the Coorong, Lower Lakes and indeed the whole of the Murray-Darling Basin to be restored.

As Chairperson of the Murray Lower Darling Rivers Indigenous Nations (MLDRIN), I am constantly reminded of the strong understanding of the importance of water to all Indigenous Nations and the connections between each of us, bound up in our history, relationship to and affinity with our lands and waters.

While many will not be able to understand the depth of our connection and knowledge of country as my people do, this CSIRO report in collaboration with the Ngarrindjeri people offers a significant insight into the value of land and waters to the Ngarrindjeri.

We hope that this study is useful to all Australians and that Indigenous peoples' knowledge systems be recognised as sustainable and relevant in this and future generations as we tackle the challenges of climate change, poor water quality and land management practices. We believe that this is a way forward to repair the damage in the Murray-Darling Basin and indeed the planet itself.

SAVE MOTHER EARTH

Mr Matthew Rigney

Chairperson of the Murray Lower Darling Rivers Indigenous Nations

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ORIGINS OF THIS REPORT

This project arose from the MLDRIN meeting in Dubbo 29 October 2005. Subsequent negotiations between the CSIRO and MLDRIN provided for its development.

The original aim of the discussions was to fully engage with CSIRO to recognise Indigenous knowledge systems and Indigenous values of water throughout the whole river system for all Indigenous Nations.

WARNING

**APOLOGIES TO ANY ABORIGINAL PERSON WHO MAY BE
DISTRESSED BY THE MENTION OF THE NAMES OR
PHOTOGRAPHS OF PEOPLE WHO MAY BE DECEASED.**

CONTENTS

| | |
|--|------|
| FOREWORD..... | I |
| ACKNOWLEDGMENTS..... | II |
| ORIGINS OF THIS REPORT..... | II |
| ABBREVIATIONS AND TERMS..... | VI |
| EXECUTIVE SUMMARY..... | VII |
| Background..... | vii |
| Water and the Ngarrindjeri people..... | vii |
| Collaborative research approach..... | vii |
| Main conclusions..... | viii |
| Recommendations..... | viii |
| Report structure..... | ix |
| | |
| PART 1 RESEARCHING THE VALUE OF WATER FOR NGARRINDJERI PEOPLE..... | 1 |
| | |
| 1. THE RESEARCH BRIEF – GOALS, OBJECTIVES, LIMITATIONS..... | 1 |
| | |
| 2. INDIGENOUS WATER RIGHTS AND CULTURAL FLOWS..... | 3 |
| 2.1. Collaboration as negotiated methodology – theoretical and conceptual considerations..... | 4 |
| | |
| 3. THE CULTURAL VALUE OF WATER..... | 6 |
| | |
| PART 2 NGARRINDJERI WELLBEING AND WATER..... | 11 |
| | |
| 4. CONTEXT..... | 11 |
| 4.1. <i>Yarluwar-Ruwe</i> : The Lower Lakes, Coorong and Murray Mouth..... | 11 |
| 4.2. Economic values and wellbeing..... | 12 |
| 4.2.1. Total economic value of water..... | 13 |
| 4.2.2. Conceptual frameworks designed for integrating values..... | 15 |
| 4.3. Valuing water..... | 16 |
| 4.3.1. Approaches to valuation of non-use values..... | 16 |
| 4.3.2. Estimating the 'cultural economy'..... | 16 |
| 4.3.3. The subjective wellbeing approach..... | 17 |
| 4.3.4. Indigenous wellbeing..... | 18 |

| | | |
|--------|---|----|
| 5. | METHOD | 22 |
| 5.1. | Using the wellbeing framework..... | 22 |
| 5.2. | Focus group discussions | 22 |
| 5.3. | Method implementation..... | 23 |
| 6. | WORKSHOP RESULTS | 26 |
| 6.1. | Ngarrindjeri Wellbeing..... | 26 |
| 6.2. | Black swan (<i>Kungari</i>) and swan eggs..... | 29 |
| 6.2.1. | Values of swan eggs and swan egging | 29 |
| 6.2.2. | Enabling factors of and impediments to swan egging..... | 30 |
| 6.3. | Mulloway (jewfish)..... | 31 |
| 6.3.1. | Values of mulloway..... | 31 |
| 6.3.2. | Factors affecting abundance of mulloway and use by Ngarrindjeri people..... | 31 |
| 6.4. | Murray cod (<i>pondi</i>)..... | 32 |
| 6.4.1. | Values of <i>pondi</i> | 32 |
| 6.4.2. | Factors affecting abundance of <i>pondi</i> and use by Ngarrindjeri people..... | 33 |
| 6.5. | Cockles (<i>kuti</i>) | 33 |
| 6.5.1. | Values of <i>kuti</i> | 33 |
| 6.5.2. | Factors affecting abundance of cockles and use by Ngarrindjeri people..... | 34 |
| 6.6. | <i>Yarluwar-Ruwe</i> as the basis for improving wellbeing | 35 |
| 6.6.1. | Research | 35 |
| 6.6.2. | Employment and economic development..... | 35 |
| 6.6.3. | Care and management of <i>Yarluwar-Ruwe</i> | 36 |
| 6.6.4. | Families and community | 36 |
| 6.6.5. | Society..... | 36 |
| 6.6.6. | Health | 37 |
| 6.6.7. | Culture..... | 37 |
| 7. | DISCUSSION AND INTERPRETATION | 38 |
| 8. | CONCLUSIONS ON ECONOMIC VALUE | 40 |
| | PART 3 CONCLUSIONS AND RECOMMENDATIONS | 43 |
| | REFERENCES..... | 47 |

TABLES

| | |
|--|----|
| Table 1: The components of total economic value..... | 13 |
| Table 2: Total economic value of a coastal / estuarine ecosystem | 13 |
| Table 3: Outline of focus group discussions | 24 |
| Table 4: Participants in focus group discussions | 25 |

FIGURES

| | |
|---|----|
| Figure 1: Native Title claim area..... | 12 |
| Figure 2: Conceptual framework of wellbeing and poverty reduction adopted by the Millennium Ecosystem Assessment | 18 |
| Figure 3: Examples of expressions of the medicine wheel..... | 19 |
| Figure 4: Model of the foundations of Hawaiian family wellbeing | 19 |
| Figure 5: Wellbeing as unity and interconnectedness..... | 20 |
| Figure 6: Wellbeing diagram for Giringun tribal groups..... | 21 |
| Figure 7: Workshop participants and research team after the workshop at Camp Coorong | 23 |
| Figure 8: Competing interests on Ngarrindjeri <i>Yarluwar-Ruwe</i> | 27 |
| Figure 9: Wellbeing as the space generated by rights and livelihoods | 28 |
| Figure 10: Black swan and black swan egg | 29 |
| Figure 11: Mulloway (jewfish) | 31 |
| Figure 12: Murray cod | 32 |
| Figure 13: Cockles | 34 |

ABBREVIATIONS AND TERMS

| | |
|-----------------------------------|--|
| Kaldowinyeri | Creation |
| <i>kungari</i> | black swan |
| <i>Kungun Ngarrindjeri Yunnan</i> | Listen to Ngarrindjeri people talking |
| Kurangk | Coorong |
| <i>kuti</i> | cockles |
| LLCMM | Lower Lakes, Coorong and Murray Mouth |
| MD | Murray-Darling |
| MDB | Murray-Darling Basin |
| MDBA | Murray-Darling Basin Authority |
| MDBC | Murray-Darling Basin Commission – now gazetted as the Murray-Darling Basin Authority |
| miwi | overarching Ngarrindjeri concept of spirit and wellbeing |
| MLDRIN | Murray Lower Darling Rivers Indigenous Nations |
| NCCC | Ngarrindjeri Caring for Country Centre |
| <i>ngartji</i> | totem or special friend of the Ngarrindjeri |
| <i>Ngurunderi</i> | Ngarrindjeri creator and spiritual ancestor |
| NNRMWG | Ngarrindjeri Natural Resource Management Working Group |
| NRM | natural resource management |
| <i>pondi</i> | Murray cod |
| ruwar | body |
| <i>ruwe</i> | country; lands and water |
| <i>Yarluwar-Ruwe</i> | Sea country |

EXECUTIVE SUMMARY

Background

The value of water to Indigenous people of the Murray-Darling River Basin is an issue that seems to have been neglected in recent political and media debates about the deepening water crisis in south-eastern Australia. Rather, the commercial needs of irrigators and the related question of the reliability of water supply to centres such as Adelaide and Mildura dominate political and popular discourse and interests (see [Connell 2007](#)). Indigenous needs and rights, when mentioned at all, are usually relegated to a cultural space, archaic and quaint, removed from present-day economic and social development imperatives of Indigenous communities.

A consequence of this neglect is that Indigenous interests and needs regarding water quality and quantity are marginalised and claimed sovereign and native title rights are not addressed in water policy planning, development and implementation ([Morgan *et al.* 2004](#), [Berhendt 2003](#)). Indigenous interests are seen by default as being more ephemeral and less real than other claims and interests, which are presented as having stronger economic claims in popular and government consensus.

This project develops a 'negotiated methodology' approach with the Ngarrindjeri Nation of the Lower Lakes, Coorong and Murray Mouth to redress the lack of emphasis on Indigenous values of (and corresponding rights to) water. The Ngarrindjeri are the recognised traditional owners of the region – one of six 'icon sites' within the Murray-Darling Basin, and with a large proportion of the area also listed as wetlands of international significance under the Ramsar Convention.

Water and the Ngarrindjeri people

Water is central to Ngarrindjeri existence. It has socioeconomic and cultural value and is critical for physiological, material, community and cultural aspects of Ngarrindjeri life. The Ngarrindjeri wish to retain their connection with their lands and waters to retain and regain wellbeing. Ngarrindjeri know and take for granted, at a deep level, the cultural value of water to their lives and wellbeing.

Human-induced, environmental and institutional activities have almost obliterated some traditional food sources and degraded fresh water sources. However this has not diminished the cultural and spiritual significance of the animals as *Ngartjis* (totems) and the obligation that Ngarrindjeri people have towards caring for country.

Strategies developed through this project will improve Ngarrindjeri wellbeing by increasing non-consumptive uses and values of *ruwe*, as well as the consumptive use benefits. Any program must be holistic and long-term, and include research, employment, education/training, planning, cultural and spiritual processes.

Collaborative research approach

The basic strategy of this project has been to engage with one Indigenous nation, the Ngarrindjeri, to better articulate the essential role of water in the community's present and future economic and social development. While the project was always intended as a collaborative effort, the full meaning of this was only realised after discussion between partners over a number of months leading to the 'negotiated methodology' approach used.

Emerging from these discussions, was a workshop-based focus group approach that could combine social and cultural issues with the more formal economics methodology based on the 'wellbeing' approach.

The Ngarrindjeri people were engaged as partners both as researchers and as collaborative contributors to (and owners of) the knowledge developed. With the Ngarrindjeri as full, participating partners, the project was able to more realistically develop an Indigenous perspective on effective engagement, which is intended to set specific benchmarks for future collaborations.

Main conclusions

Research from this project adds to the understanding of the physical and spiritual connection of Ngarrindjeri people to country. It illustrates:

- the variety of social, cultural and economic values that Ngarrindjeri people derive from water and a water-based ecosystem
- how these values have changed over time
- why these values have changed over time
- how Ngarrindjeri wellbeing and survival in the environment of the Lower Murray is inextricably linked with water flows of sufficient quantity and quality to provide a basis for future economic and social development
- how detrimental changes to water quality and quantity in the Lower Lakes, Coorong and Murray Mouth have negatively affected Ngarrindjeri wellbeing
- that government policy must develop equitable long-term partnerships and pathways with Indigenous nations to rehabilitate country and establish sustainable management of lands and waters as a foundation for Ngarrindjeri wellbeing, based on a just and productive relationship with the broader Australian community, economy and government systems of management, but aware of the cultural and spiritual dimensions of wellbeing.

Recommendations

The following recommendations derive both from the Wellbeing Workshops and from project theory and interpretation in general. They reflect Ngarrindjeri points of view on how to move forward with respect to principles of Indigenous water rights and partnerships in natural resource management.

1. That the research agreement developed for this project be used as a benchmark for future projects with Indigenous Nations.
2. That funds be provided so that Indigenous people are able to obtain proper legal advice when engaging in research programs to enable development of sound research agreements that protect the interests of Indigenous people.
3. That research projects should include funding to enable Indigenous nations to properly engage with the research program. Research projects should also be designed to minimise stress on Indigenous leadership.
4. That collaborative research projects focusing on Indigenous community outcomes should always begin with discussions involving potential Indigenous nation partners.

5. That the collaborative, multidisciplinary research model developed as part of this project is used as a template for future research projects with Indigenous communities. Where possible long-term, community-based researchers should be incorporated into project teams.
6. That funding be better coordinated and directed towards Indigenous capacity building to achieve long-term positive measurable outcomes for the significant investments being made in NRM and associated Indigenous engagement.
7. That allocations of cultural water to Indigenous Nations in the Murray-Darling Basin be supported and understood as critical in the rehabilitation of the lands and waters that provide the foundation for Indigenous wellbeing. Indigenous Nations need to make their own decisions about how Indigenous allocations are used.
8. That significant investments in building the capacity of Indigenous Nations to be actively engaged in the long-term sustainable management of their lands and waters including Indigenous Caring for Country programs incorporating, research, planning, training and employment.
9. That development of regional Indigenous Caring for Country programs in the Murray-Darling Basin as recommended in the workshops be supported. This could mean the development of partnerships with Indigenous nations and a range of other non-Indigenous programs and agencies such as NRM Boards and universities. The Ngarrindjeri could be a pilot project.
10. That the principles identified in the recently ratified UN Declaration on Indigenous peoples provide the basis for collaborative projects that aim for best practice in Indigenous research, NRM and water policy development. This best practice should also be informed by Indigenous research and policy directions being taken in other Pacific Rim countries.

Report structure

Part 1 introduces the project, its aims and goals, changes, challenges, methods, limitations and underlying principles. It serves as an expanded preface to Part 2.

Part 2 describes the methodology and outcomes of the on-site aspects of the project – largely centred around the wellbeing workshops conducted at Camp Coorong. It also contains a detailed discussion of focus group discussions; their philosophy, methods, procedures and outcomes.

Part 3 provides critical reflection on the material and research results and derives a list of recommendations aimed at improving wellbeing of Ngarrindjeri people from the water and water-based ecosystems that form their traditional country.

PART 1

RESEARCHING THE VALUE OF WATER FOR NGARRINDJERI PEOPLE

Jim Birckhead, Steve Hemming, Daryle Rigney, Matt Rigney, George Trevorrow, Tom Trevorrow and Romy Greiner

1. THE RESEARCH BRIEF – GOALS, OBJECTIVES, LIMITATIONS

This collaborative research project was set up to provide a comprehensive overview of the value of water to the Ngarrindjeri People of the Lower Lakes, Coorong and Murray Mouth (LLCMM), a significant ecological asset in the Living Murray Program of the Murray-Darling Basin Authority (MDBA).

Its objectives were to:

1. quantify and evaluate in welfare economics terms the uses of water, wetlands and floodplains by the Ngarrindjeri people and
2. document their cultural values to the Ngarrindjeri people.

It was considered that the project could also provide important data in support of the Water for a Healthy Country Flagship (Flagship) Water Benefits Project.

Underlying these objectives were the practical questions of:

- how a government department or agency engages and collaborates (in the full meaning of collaboration) with an Indigenous community and then
- formulates and implements policy that benefits the environment, fulfils the aims of the department involved, and contributes to the welfare of the Indigenous community.

The project can play a direct role in facilitating:

1. expansion the Flagship's capacity to account for the full range of benefits of water – in particular by augmenting the socioeconomic analyses of water benefits in the Murray region
2. increasing the capacity of Indigenous people of the LLCMM to articulate the value of their customary economy
3. raising wider community awareness of the value of water-based natural resources to Indigenous people in the River Murray region
4. providing activity complementary to the cultural mapping activities planned under the MDBA's Living Murray Indigenous Partnerships Project
5. making a sound case study contribution to CSIRO's emerging strategy to increase its engagement with Indigenous Australians

6. a new collaborative relationship between the Flagship and Flinders University, Charles Sturt University, and the Ngarrindjeri Nation and
7. contributing to the development of theories of resource economics both generally and for the Indigenous people of the LLCMM region.

This project was constrained by the available time and funding and by the dynamic complexity of the issues under consideration. A fully collaborative research partnership was developed with Ngarrindjeri, facilitated by combining an economics wellbeing approach with anthropological methodologies and theories.

The project can be seen as a pilot project that is breaking new ground in a somewhat ill-defined, emerging area of concern – the Indigenous value and cultural/economic use of water and associated natural resources, and the underlying question of Indigenous water and resource rights. Most importantly, this project has provided a case study of Indigenous engagement with NRM in the Murray-Darling Basin and argues for a greater focus on resourcing Indigenous nations and building their capacity to engage with complex and growing government programs. Indigenous leaders have recognised that in the face of climate change and massive environmental degradation they can maintain the centrality of their land and waters to their cultures through research, training, planning and employment associated with NRM (see [Ngarrindjeri Nation 2007](#)).

That this research was conducted during a time of prolonged drought with a consequent crisis in the irrigation industry, when the Australian Government assumed management of the Murray-Darling Basin, and the South Australian Government's proposed weir development on the lower Murray is looming, has highlighted the urgency and political nature of all questions about water.

2. INDIGENOUS WATER RIGHTS AND CULTURAL FLOWS

This project derives from and builds on a growing body of literature on the value of water (and other natural resources) to Indigenous people in Australia and around the world, and the moral and legal precedents for its customary use by Indigenous nations in a number of settings (Behrendt and Thompson 2003; Notzke 1995; Morgan et al. 2004; Hattam et al. 2007; Hemming et al. 2007a; Strang 2005; Toussaint et al. 2005).

It similarly draws on a wider literature of the role of Indigenous people in NRM in a number of countries and contexts and on the political implications of negotiating such arrangements (Baker et al. 2001; Birckhead and Wallis 1994; Birckhead 1996; Birckhead et al. 1996a&b; Birckhead et al. 2000; Davis 1993; Freeman and Carbyn 1988; Furze et al. 1996; Sakulas et al. 2000; Stevens 1997; Venne 1998 and Walsh 1996).

Against this background, this project can trace its lineage to groundbreaking work conducted by the MDBC in the 1990s – work that set progressive agenda with respect to Indigenous people and water, developed through wide consultation with a number of stakeholders (see MDBC 2006; Hemming et al. 2002).

The *Scoping study on Indigenous involvement in natural resource management decision making and the integration of Indigenous cultural heritage considerations into relevant Murray-Darling Basin Commission programs* (Forward NRM and Arrilla-Aboriginal Training & Development 2003) is also noteworthy for establishing Indigenous water management benchmark issues and cultural concerns. Murray Lower Darling Rivers Indigenous Nations (MLDRIN) has developed over a number of years a number of position papers that articulate the nature of Indigenous water rights.

In 2006 the Ngarrindjeri included an important definition of 'Ngarrindjeri cultural water' in the LLCMM Icon Site Environmental Management Plan 2006-2007 (MDBC 2006: p11). It provides a critical starting point for investigating the value of water, wetlands and floodplains to Ngarrindjeri people:

Ngarrindjeri lands and waters is a living body. It must be healthy for Ngarrindjeri people to be healthy. This is a human right. Ngarrindjeri people need to manage the health of Ngarrindjeri Ruwe (Country, lands and waters) according to Ngarrindjeri laws and traditions. For example, cultural flows are essential for the continued breeding and health of Ngarrindjeri Ngartjis (totems). Ngarrindjeri people believe that the Ngarrindjeri Nations' health depends on the health of our Ngartjis. This cultural flow is also essential for our Ngarrindjeri cultural heritage sites. Some areas are of high Ngarrindjeri cultural significance but have not been identified as being environmentally significant. Ngarrindjeri leaders need access to cultural flows to maintain the health of those places. Ngarrindjeri people wish to be actively supported in determining the priorities and allocations for cultural water flows and in continuing Ngarrindjeri research into Ngarrindjeri Ruwe. (MDBC 2006)

More recently Indigenous nations in the Murray-Darling Basin (MDB) have begun to refer to 'indigenous' flows rather than 'cultural' flows – an important re-naming because the term 'cultural flow' carries with it an old-fashioned and potentially limiting understanding of culture that leads to poor decisions from governments relating to Indigenous engagement. As emphasised by Indigenous leaders in Pacific Rim countries, including Australia, a sustainable culture is dependant on a sustainable economy and good governance, and for Indigenous people this relies on a healthy environment (see Dodson and Smith 2003). If a healthy environment cannot be provided through cultural or Indigenous flows then Indigenous nations such as the Ngarrindjeri require funding to develop culturally appropriate

ways of living on a degraded country and most importantly to conduct research and planning that leads to the rehabilitation of this country (Gruenewald 2003).

2.1. Collaboration as negotiated methodology – theoretical and conceptual considerations

For Indigenous people the colonisation of their social world and the loss of land, water and other natural resources have been typified by injustice, exploitation and a lack of political and economic power. Research, as a 'scientific' process for gaining and developing knowledge has been a key way to marginalise Indigenous people's knowledge. It is linked to imperialism and colonisation (Smith 1999; Pihama 2005) and as such has realised and/or maintained the advantage (profit) of some and the disadvantage (loss) of others. Struggling with research and whether the processes advantage or disadvantage people and their communities is not the outcome of some naturally selected order but the result of the social human construction of inequitable practice. This means that the approaches or paradigms that are adopted emerge from and reflect beliefs about the social world in which we live.

The ways in which knowledge about Indigenous people has been collected, classified and represented has often been to the detriment of their wellbeing, interests and ways of knowing. Maori scholar Linda Tuhiwai Smith (1999: p59) calls this 'establishing the positional superiority of western knowledge'. In this context knowledge is not value free but rather becomes disciplines of knowledge and 'regimes of truth' where researchers sanctioned by power structures affect reality and create knowledge and 'truth' (Foucault 1980: p133):

...truth isn't outside power, or lacking in power ... truth isn't the reward of free spirits, the child of protracted solitude, nor the privilege of those who have succeeded in liberating themselves. Truth is a thing of this world: it is produced only by virtue of multiple forms of constraint. And it includes regular effects of power. (Foucault 1980)

All societies and nations have their 'regimes of truth' according to their values, beliefs and morals. By developing a negotiated research methodology the partners in this project sought to take scientific discourse out of its position of superiority in an effort to reduce power imbalances between them. The Indigenous scholars and communities stressed the need to develop methodologies that offer a research framework by Indigenous peoples, for Indigenous peoples and in the interests of Indigenous peoples (Arbon 1992; Brady 1992; Rigney 1997, 2001; Nakata 1998; Moreton-Robinson 2000; Worby and Rigney 2005).

The negotiated methodology for this project follows the work of Maori scholar Linda Tuhiwai Smith in her book *Decolonising Research Methodologies* (1999):

When indigenous peoples become the researchers and not merely the researched, the activity of research is transformed. Questions are framed differently, priorities are ranked differently, problems are defined differently, people participate on different terms. (Smith 1999: p193)

Indigenous peoples were engaged in this project as partners – both as researchers and as collaborative contributors of knowledge – the wellbeing model was used to foster focus group discussions and overcome the separation of understanding and application (Gitlan et al. 1989: p250). A collaborative approach has a number of implications for how research is conceptualised, conducted, interpreted and applied.

This project was first conceptualised and developed without reference to a specific community and it was not possible to fully involve an Indigenous nation in the formative stage, beyond presenting a general overview of what was intended, and seeking feedback from MLDRIN meetings and workshops.

Employing an Ngarrindjeri person to manage the project in the community did not function as anticipated and considerable delays occurred before a workable model of collaboration and decision making could be developed.

Preliminary discussions of Ngarrindjeri research priorities agreed to:

- adopt the economic wellbeing framework and
- consider further how the approach would be implemented.

Subsequent discussions held in March 2007 agreed to:

- build as much as possible on existing information and recent documents (e.g. the 2006 Ngarrindjeri Nation Yarlular-Ruwe Plan, Ngarrindjeri Nation 2007)
- focus investigation on the regional leadership group that includes people who represent country, have thought in detail about water and other NRM issues, and are elected representatives of the nation entrusted with delivering NRM outcomes (e.g. Tendi, Native Title Management Committee, Ngarrindjeri Committee, Ngarrindjeri Governance Working Party and Ngarrindjeri Working Group on NRM)
- ensure the methodology allows comparisons of current to improved wellbeing
- consider ongoing processes (e.g. Native Title claim, agreement making, and the drought and water policy development in the Murray-Darling Basin and South Australia).

The collaborative research process resulted in a process that built research capacity within the Ngarrindjeri Nation and produced results that were immediately useful for Indigenous engagement with NRM. It has demonstrated more effective ways for agencies to engage and/or form partnerships with Indigenous communities.

3. THE CULTURAL VALUE OF WATER

A key goal of this research was ... *to document the cultural value of water, wetlands and floodplains to the Ngarrindjeri People of the LLCMM.*

Water is central to Ngarrindjeri existence. Its value encompasses both socioeconomic and cultural dimensions as water is critical to supporting physiological, material, community and cultural aspects of life. The ecosystems of the LLCMM, because of their resilience to drought, used to provide a life insurance to the Ngarrindjeri Nation prior to the modifications to the river and lake systems.

The Ngarrindjeri vision for their *Yarluwar-Ruwe* is to maintain the connection between Ngarrindjeri wellbeing, lands and waters, and the Ngarrindjeri social system as it is connected with broader social systems and economies. The meaning of the terms in the context of this research was clarified so that culture was not treated as a bounded set of traditions and practices separate from the 'natural' world (Smith 1999; Cajete 1994; Rose 2003).

Ngarrindjeri know and take for granted, at a deep level, the cultural value of water to their lives and wellbeing. They have drawn together their views on the cultural values of water for strategic planning documents involving a number of agencies and organisations. These documents form a starting point for understanding the cultural value of water and how it relates to economic values. Ngarrindjeri themselves also wish to use this information. Ngarrindjeri cultural knowledge is Ngarrindjeri property; Ngarrindjeri are as traditional owners of the lands and waters of this study region.

Experiences associated with the *Kumarangk* (Hindmarsh Island) Bridge issue have led Ngarrindjeri leaders to be particularly cautious about revealing culturally specific knowledge to non-Indigenous people (see Bell 1998; Hemming *et al.* 2002). The Ngarrindjeri research partnership was formed with the protection of a legal research agreement and a research focus aimed at providing Ngarrindjeri leaders with resources and researchers to support the investigation of key questions relating to better engagements with NRM. The agreement is modelled on a *Kungun Ngarrindjeri Yunnan* (Listen to Ngarrindjeri people talking) legal agreement developed by Ngarrindjeri leaders to form the basis of partnerships with outside organisations and government departments (see Hemming and Trevorrow 2005; Hemming *et al.* 2007b). This agreement in itself forms a significant project achievement.

The links between culture, water and Ngarrindjeri wellbeing emerge clearly from the numerous ethnographic and historical studies of the culture, as well as from a myriad of documents developed by Ngarrindjeri over the years. At the heart of this approach is a strategy that recognises the strong connection between wellbeing, caring for country, good governance and economic development. The establishment of Camp Coorong: Race Relations and Cultural Education Centre in the mid 1980s reflects this long-term recognition by Ngarrindjeri leaders (Hemming 1993).

In the past, anthropologists and other non-Indigenous researchers wrote about Ngarrindjeri culture, history and traditions in a context where Indigenous people had no power to speak back to the often racist, sexist, Eurocentric representations of 'Aboriginal' culture (see for example: Taplin 1873; Woods 1879; Tindale 1974; Berndt *et al.* 1993; Jenkin 1979). For these reasons Ngarrindjeri leaders have developed documents such as the Ngarrindjeri Nation *Yarluwar-Ruwe* Plan (2006) to clearly communicate Ngarrindjeri traditions, values and plans to the broader community. A more recent collaborative ethnography written by Diane Bell (1998) *Ngarrindjeri Wurruwarrin: A world that is, was, and will be* provided detailed discussions of the value of water, wetlands and floodplains to Ngarrindjeri people. It did so in the context of the *Kumarangk* issue, and therefore specifically addressed the complexities of the connections between Ngarrindjeri people and their lands and waters – the *ruwe/ruwar* (land/body) relationship (Bell 1998: p262–263).

Ngarrindjeri are, and have always been, people of the sea, Lower Lakes, Coorong, and Murray River. They are inextricably bound up with and reliant on water. This is reflected in spiritual belief and cultural practice, as well as in the most mundane aspects of everyday life:

The great River Murray that dominated the Ngarrindjeri people was significant not only because of the Ngurunderi myth which was known all over its territory. As it was put to us, the River was like a lifeline, and immense artery of a living 'body' consisting of the Lakes and the bush and over the southern plains and undulating land. This 'body' also included country to the east, most of which was only partially relevant to the Narrinyeri. Its 'legs' spread south-eastwards along the Coorong and south-westwards along Encounter Bay and beyond. The 'body' symbolic of Ngurunderi himself, embraced five different environments which merged into one another: salt-water country, riverine, lakes, bush (scrub) and desert plains (on the east) – a combination that had particular relevance to the socio-economic life of the people. (Berndt et al. 1993: p13)

This understanding of Ngarrindjeri lands and waters and the relationship between people, land, culture and economy has been communicated by Ngarrindjeri people to non-Indigenous researchers and others since the invasion of Ngarrindjeri lands in the early 1830s (see for example accounts from 1846 by the missionary Heinrich Meyer of the Ngarrindjeri Creation stories).

Water was considered to be central to Ngarrindjeri culture, livelihood, and wellbeing:

The Ngarrindjeri possessed a magnificent country which enabled them to settle in semi-permanent villages and, for a hunting people, to populate their area very densely. The dominant feature of their country was the Lower Murray and its lakes; and, although they exploited the hinterland to the full, it was this great stretch of water that afforded them security in the form of food, clothing, and other necessities of life. Even in times of severest drought, the Murray never dried up, and there were always fish in the lakes, and birds around their shores... (Jenkin 1979: p13–14)

The LLCMM gave a high level of security to the Ngarrindjeri ... *Before the arrival of the Europeans the area around the Murray lakes was one of the most densely settled in Australia (Simons 2003: p19).*

In the context of Ramsar planning, in the 1990s, the Ngarrindjeri leadership was asked by non-Indigenous people to explain the importance of the lower Murray, lakes and Coorong to Ngarrindjeri people. The community-endorsed statement that was produced sums up the centrality and meaning of water and its relationship to Ngarrindjeri wellbeing:

Through culture, history and spirituality the Ngarrindjeri are bounded with, in fact are part of, the river, Lower Murray Lakes and Coorong.

Maintaining (looking after) the environment is something that Ngarrindjeri must do. It is the same as, or an extension of, looking after oneself.

Ngarrindjeri have responsibilities to their Elders and ancestors to look after the country and the burial sites and other culturally significant places that still exist.

Ngarrindjeri, through multi-generational association with particular camping and fishing sites, have an ongoing, living association with the planning area, including the Coorong National Park.

Certain families have connection to specific places.

The sense of feeling, sense of belonging, sense of responsibility for the River, Lakes and Coorong experienced by Ngarrindjeri people has survived occupation, dispersal and attempted assimilation. It continues to exist irrespective of where Ngarrindjeri people currently live...

Many Ngarrindjeri people still retain a special spiritual relationship with specific wildlife species occurring within the planning area. This totemic relationship is deeply embedded in Ngarrindjeri culture and spirituality... (Ngarrindjeri/Ramsar Working Group 1998)

The Ngarrindjeri vision for country set out in the *Ngarrindjeri Nation Yarlular-Ruwe Plan* also articulates these underlying principles of wellbeing and connection:

Our Lands, Our Waters, Our People, All Living Things are connected. We implore people to respect our Yarlular-Ruwe (Country) as it was created in Kaldowinyeri (the Creation). We long for sparkling, clean waters, healthy land and people and all living things. We long for the Yarlular-Ruwe (Sea Country) of our ancestors. Our vision is all people Caring, Sharing, Knowing and Respecting the lands, the waters and all living things.

Our goals are:

For our people, children and descendants to be healthy and to enjoy our healthy lands and waters.

To see our lands and waters healthy and spiritually alive.

For all our people to benefit from our equity in our lands and waters.

To see our closest friends – our Ngartjis – healthy and spiritually alive.

For our people to continue to occupy and benefit from our lands and waters.

To see all people respecting our laws and living in harmony with our lands and waters. (Ngarrindjeri Nation 2007: p13)

The recent Ngarrindjeri Nation plan states::

The waters and the seas, the waters of the Kurangh (Coorong), the waters of the rivers and lakes are all spiritual waters...

The land and waters is a living body...

We the Ngarrindjeri people are a part of its existence...

The land and waters must be healthy for the Ngarrindjeri people to be healthy...

We say that if Yarlular-Ruwe dies, the water dies, our Ngartjis die, the Ngarrindjeri will surely die. (Ngarrindjeri Nation 2007: p13)

Grave concern has been expressed for the state of Ngarrindjeri lands and waters:

The fresh water used to come from the southeast, from the next town down at Kingston, right through to Mount Gambier. And that water kept the Coorong alive. Now, when we look at the Southern Lagoon of the Coorong today, it's dying. It's going stagnant because of what happened in the southeast, a part of the Coorong has been damaged very severely. And to us, as Ngarrindjeri people, it's like, it's damaging us. It's like cutting one of your arms off, or one of your legs off.

In the end you start losing the full capacity of your body. We look upon the land in the same way. And what has happened down the southeast is slowly affecting the land here today. Because all through this lagoon down here, the water would flow through and it would freshen up the Coorong, make it a combination of fresh and salty water which kept the fish here and all the bird life. And that was all part of survival of the waterways and the land. That is a part of the survival of the people. (Bell 1998: p252)

Part of the Ngarrindjeri strategic response to NRM issues is to link this project with the recent *Caring for Ngarrindjeri Sea Country and Culture (2006)* project as part of a strategy to further

implement the goals of the Sea Country Project. This new research project recognises Ngarrindjeri engagement in a complex array of related projects, responses to government legislation, policies and agendas, Ngarrindjeri negotiations with state bodies regarding native title, and other issues as constituting the larger cultural context of this project.¹

¹ It is interesting to note here that a Google search for 'Ngarrindjeri cultural water' listed 16,500 sites that dealt with aspects of this central topic of Ngarrindjeri existence and wellbeing.

PART 2

NGARRINDJERI WELLBEING AND WATER

Romy Greiner, Jim Birkhead, Steve Hemming, Daryle Rigney, Matt Rigney, Tom Trevorrow and George Trevorrow.

4. CONTEXT

4.1. *Yarluwar-Ruwe*:

The Lower Lakes, Coorong and Murray Mouth

Ngarrindjeri Vision for Country from *Kungun Ngarrindjeri Yunnan* (Listen to what Ngarrindjeri people have to say)

Our Lands, Our Waters, Our People, All Living Things are connected. We implore people to respect our Yarluwar-Ruwe (Country) as it was created in the Kaldowinyeri (the Creation). We long for sparkling, clean waters, healthy land and people and all living things. We long for the Yarluwar-Ruwe (Sea Country) of our ancestors. Our vision is all people Caring, Sharing, Knowing and Respecting the lands, the waters and all living things. (Ngarrindjeri Nation 2007: p5)

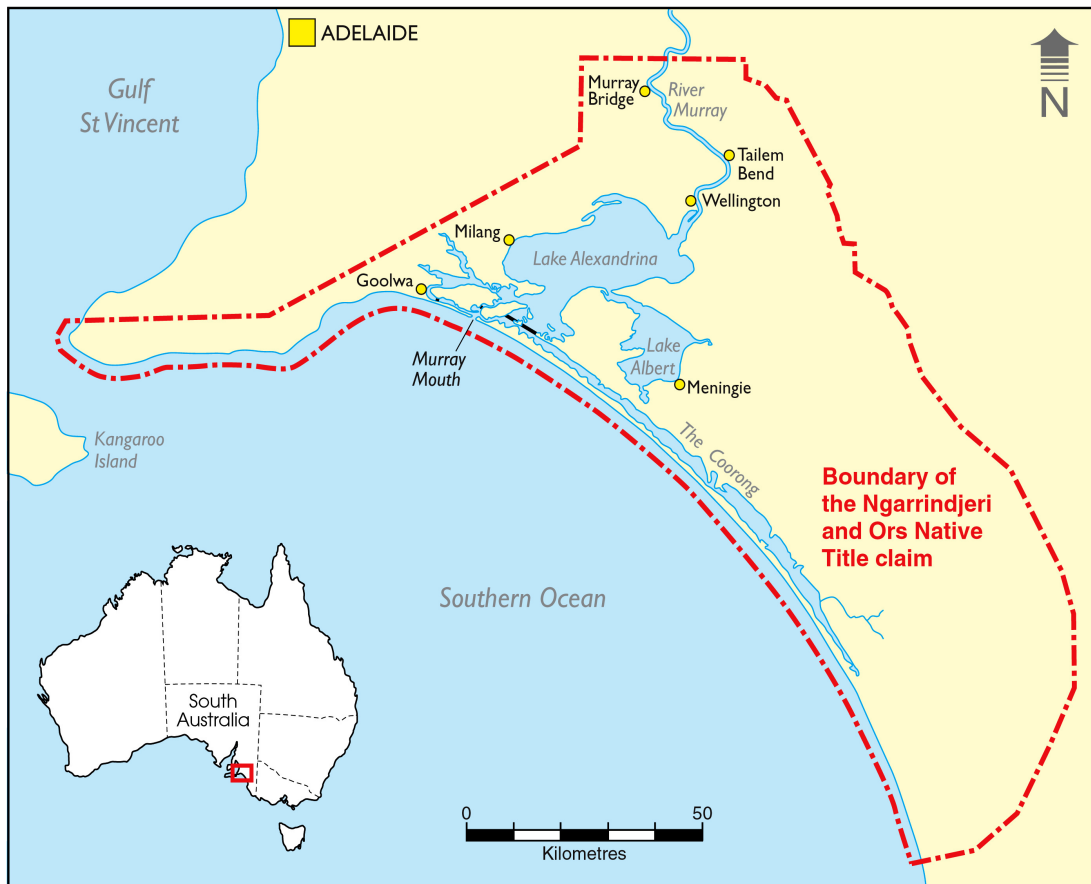
The area encompassing the LLCMM is one of six 'icon sites' within the Murray-Darling Basin ... because of its unique ecological qualities, recognised both nationally and internationally, and its hydrological significance (MDBC 2006: piii). This is the *Yarluwar-Ruwe* of the Ngarrindjeri Nation and its significance is encapsulated in the Ngarrindjeri Vision for Country. It also has ... social, cultural and economic values for local and state communities including the Ngarrindjeri, the traditional owners of the region, for whom the lands and waters (or *Ruwe*), are a living body (MDBC 2006: piii).

Along with the Alexandrina Council, the former Murray-Darling Basin Commission acknowledged the Ngarrindjeri Nation as the traditional owners of the country that includes the Lakes, *Kurangk* (Coorong) and Murray Mouth (see Hemming and Trevorrow 2005; MDBC 2006: piii). The Ngarrindjeri people refer to the region – including the coastal and marine areas – as *Yarluwar-Ruwe* (Ngarrindjeri Nation 2007). It is shown in Figure 1.

The LLCMM covers an area of about 140 000 hectares. A large proportion of the area is registered as Ramsar wetlands of international importance. In nominating the area in 1985, the Australian government made an international commitment to maintaining the ecological character of the site as it was in 1985 (MDBC 2006: p29). The Ngarrindjeri nation has contributed directly to MDBC research and reporting on the region and support the recommendations contained in *The Lower Lakes, Coorong and Murray Mouth Icon Site Environmental Management Plan 2006-2007* (MDBC 2006).

Figure 1: Native Title claim area

The Ngarrindjeri & Ors Native Title claim covers the the Lower Murray, Lakes, Coorong and Encounter Bay regions of South Australia



4.2. Economic values and wellbeing

Economic value, in microeconomic terms, is the ability of an asset to generate income <http://www.investorwords.com/>. At the macroeconomic level, the ... *value of a good [is] expressed as its exchangeability for other goods, taking into account all relevant costs of the good and social benefits provided by it* www.answers.com. The value of a good is consequently not limited to the monetary payoffs it generates for individuals – it includes other aspects which either contribute to or detract from the benefits that society derives from it.

For the purpose of this research, we define the economic value of a good to mean its ability to generate wellbeing for people.

The Ngarrindjeri do not conceptualise the natural environment as a separate entity. Rather, a connectedness with the natural environment is at the centre of the Ngarrindjeri conceptualisation of wellbeing and access to natural resources is critical for a healthy and sustainable Ngarrindjeri way of living (Ngarrindjeri Nation 2007; Bell 1998).

Various definitions of wellbeing exist (Alkire 2002), but it fundamentally includes the satisfaction of (basic) material needs, health, personal security and good social relations; and the experience of freedom. In combination, these elements provide physical, social, psychological and spiritual fulfilment. Ngarrindjeri leadership supported this understanding of wellbeing in discussions and during workshops, but the centrality of the lands and waters,

the subject of this research project, to the wellbeing of the Ngarrindjeri people was always reinforced. The Ngarrindjeri have a social system based on access to 'country'.

Wellbeing is systematic – in the sense that a set of factors (including the natural environment and human-made environments, social arrangements and human consciousness) interact within a given culture to generate wellbeing. Aspects of wellbeing can be seen (and measured) as a state of health or sufficiency in various aspects of life ([ABS 2002](#)).

Wellbeing provides a holistic view of economic value – it includes the fulfilment of physical, emotional, psychological and spiritual needs, and desires at individual, family, community and social levels.

4.2.1. Total economic value of water

Water supports a suite of uses and values that are associated with water-based ecosystems and the biodiversity and lifestyle they support, and therefore generates wellbeing across physical, social, psychological and spiritual domains of human life ([Hattam et al. 2007](#); [Hemming et al. 2007a](#)). Water provides a range of ecosystem, commodity, amenity, social and cultural services at any point in time. We take 'economic value' to encapsulate all these services and apply the notion that (environmental) goods provide different types of welfare contributions (or total economic value) and that these can be based on private and public benefits. The total economic value approach (Table 1 and Table 2) can be applied to identifying and stratifying the values that people put on the environmental condition (or change).

Table 1: The components of total economic value

Source: Adapted from [Hodge and Dunn \(2001\)](#)

| TOTAL ECONOMIC VALUE | | | | | | | | |
|-----------------------|---------------------------|--------------------|-----------------------|--------------------|--------------|-----------------|---------------|---------------------|
| USE value | | | | | Option value | NON-USE value | | |
| Direct use value | | | | Indirect use value | | Existence value | Bequest value | Philanthropic value |
| Consumptive use value | Non-consumptive use value | | | | | | | |
| | Aesthetic use value | Recreational value | Educational use value | Distant use value | | | | |
| | | | | | | | | |

Table 2: Total economic value of a coastal / estuarine ecosystem

Source: based on a Danish fjord ([Atkins and Burdon, 2006](#))

| Use values | | Option values | Non-use values |
|--|---|---|--|
| Direct use values | Indirect use values | | Existence values |
| Recreation Commercial fishing Agriculture/industry Drinking purposes Biodiversity value Landscape Research/education Tourism/ecotourism Human health | Recreation Landscape Biodiversity value Aesthetic values Tourism/ecotourism Research/education Human Health | Future uses as per direct and indirect use values | Estuary and coastal zone as an object of intrinsic value, as a gift to others, and as a responsibility (stewardship) |

Despite nuances in the application and stratification of the total economic value concept, the principal differentiation across use and non-use values is fundamental. Value items may not be discrete and frameworks used to identify values have been themselves historically been

socially and culturally constructed – predominantly western/non-Indigenous (Langton 1981; Smith 1999).

Direct use values, specifically those of a consumptive nature, generally tend to attract most attention and be more accepted as they are most easily quantified and costed. Consumptive use of water includes water for industrial processes, irrigation, stock water and human consumption. Non-consumptive use values include swimming, fishing, sailing and other activities that are fundamentally supported by but do not consume water.

Non-use (or passive use) benefits are those that society derives from the landscape without actually using or intending to use it. Examples include:

- the benefits of preserving the environment for possible future use (option value)
- the benefits derived from simply knowing that the landscape is there and in good health, even if there is no intention of ever using it (existence value) and
- the satisfaction derived from being able to pass the landscape on to future generations (bequest value)
- the satisfaction derived from 'caring for water' and knowing that other people derive benefits from it (philanthropic value).

Option value is the amount of money society would be willing to pay for retaining an option to use a good (e.g. an area, facility, species) that would be difficult or impossible to replace, or for which no close substitute is available (Smith 1983.) Such a demand may exist even when there is no current intention to use the good in question and the option may never be exercised (Henry 1987).

Existence value is the amount society would be willing to pay to know that a particular natural good exists (e.g. a native fish exists in its natural habitat) (Loomis 2002, Sharp and Kerr 2005).

Bequest value is the amount society would be willing to pay today so that future generations will have a good (e.g. water quality or native fish in their natural habitat) (Loomis 2002).

Philanthropic value is the amount society would be willing to pay today as a result of individuals' desire to improve the material, social, and spiritual welfare of humanity through the preservation of a good (e.g. water quality or native fish in their natural habitat).

The importance of non-use values

While non-use benefits are often quite small per person, the non-rival nature of public good benefits (such as high water quality or preservation of species) results in simultaneous enjoyment by millions of people (Loomis 2002). Hence, the total social benefits of non-use values can be quite large, outweighing those of the use values –individual values provide insufficient indicators of total economic value (Bishop 1982).

Non-use values may be disregarded or undervalued because they are not expressed in the market (Beare et al., 2003), and this can cause misallocation of resources. Inappropriate institutional arrangements or poorly defined property rights can further cause misallocation of resources (ABARE 2001). Markets fail to allocate resources efficiently when the private costs and benefits of an individual's actions diverge from those that accrue to the rest of the community – common when dealing with natural resources.

Non-use values of environmental goods are often expressed politically (Richards and Aitken 2005), but political positions typically do not take account of the full realm of viewpoints surrounding environmental goods (Bellamy 2005). In many cases sophisticated non-market valuation techniques are needed to translate them into quantitative value estimates. Quantitative estimates can be weighed more easily against use values that have been determined in the market or administratively (e.g. valuing mangroves against aquaculture [Gunawardena and Rowan 2005]).

Wetlands have a diversity of non-use functions and non-consumptive values (DEH 2006) by:

- protecting shores from wave action
- reducing the impacts of floods
- absorbing pollutants
- providing habitat for animals and plants
- purifying inflowing water
- being important for recreational activities
- providing nurseries for fish and other freshwater and marine life and, because of this, they are critical to Australia's commercial and recreational fishing industries.

These values and functions are well understood by Ngarrindjeri. They are incorporated into the teachings of Creation Ancestors such as *Ngurunderi* and passed on by the Elders (Ngarrindjeri Nation 2007). The lands and waters are a living body; the wetlands are nurseries for Ngarrindjeri *ngartjis* (totems) and they are the parts of the system that cleanse the *Ruwe/Ruwar* – the land/body. Wetlands also bear historical significance and some have high cultural value.

The connection between particular water-related resources, their specific Ngarrindjeri uses, the practices and traditions associated with them, and the broader impacts and values of these on the Ngarrindjeri social/cultural system enables us to think about the value of water-based ecosystems such as wetlands to the Ngarrindjeri people in the context of Ngarrindjeri wellbeing.

4.2.2. Conceptual frameworks designed for integrating values

One way of understanding the values of environmental systems and landscapes is by looking at the types of ecosystem services that these landscapes (or their elements) provide, how they contribute to human wellbeing and how changes to them affect human wellbeing (MEA 2006). Ecosystem services can be grouped into:

- provisioning services – providing sources of food, fibre, employment and income
- regulating services – maintaining the environmental conditions that support life including, for example, water flow regulation
- cultural, spiritual and recreational services – providing non-material benefits including tourist and recreation facilities, sense of place, inspiration, aesthetic appreciation and educational value
- supporting services – underpinning all other categories (e.g. soil formation and pollination).

The way in which ecosystems impact on people's lives provides , i.e. the services they provide the link between values and ecosystem services².

² For consistency of terminology and ease of integration of frameworks, this report uses the terminology of 'values' rather than 'ecosystem services'.

4.3. Valuing water

4.3.1. Approaches to valuation of non-use values

Non-use values must be estimated using different methods to those used for use-values. Economists have developed a diversity of tools and techniques that can provide estimates of the full range of values being generated by environmental goods. These include revealed preference methods such as contingent valuation and willingness to pay (Allen and Loomis 2006; Atkins and Burdon 2005) and choice modelling (Álvarez-Farizo et al. 2006; Hein et al. 2006; Christie et al. 2005; Mogas et al. 2006; Richards and Aitken 2005; Bishop 1982; Smith 1983; Henry 1987).

Three categories of tools are used (Bennett 2003):

- market-based techniques for benefits generated and bought and sold in markets and completely embedded in the markets for goods and services
- revealed preference techniques rely on specific relationships between the biodiversity values under investigation and goods and services that are marketed – people's preferences for environmental protection are revealed through their actions in related markets
- stated preference techniques, where people state the strength of their preferences and hence reveal the values they enjoy through structured questionnaires and do not rely on market data but ask people to make choices based on predefined scenarios.

These techniques are all democratic in nature since they rely on individuals expressing through the market or other choices their personal values rather than a government determining 'what is best' for society (Bennett 2003).

The more value people derive from a good across the various types of uses the more the good supports human wellbeing.

4.3.2. Estimating the 'cultural economy'

Indigenous activities that contribute to social and economic wellbeing – including hunter-gather activities, fishing, land management, ceremonial business, art and craft manufacture – are often considered to lie outside the 'traditional' economy and are therefore not quantified or taken into account in policy decisions (Daly 1992; Taylor 2003). Some methods of data collection used for policy development may not adequately recognise – and may even devalue – the types of work people do in their communities (Morphy 2002).

However ... *case studies have shown that with access to land and coastal resources Indigenous Australians have reconstituted production systems which exploit wildlife both for subsistence and commercial purposes* (Altman et al. 1995: p1). Harvesting wildlife both for consumption and as a method of engaging in economic activity provided significant economic benefits to some Indigenous communities (Altman and Whitehead 2003). For Aboriginal outstations specifically ... *subsistence hunting remains of great economic significance* (Altman and Allen 1992).

Indigenous contributions to socioeconomic wellbeing remain unquantified unqualified and unrecognised (Altman 2001). Altman (2003; 2005) advocates a hybrid economy model. He illustrates different ways in which the customary sector has potential to expand in the Native Title era and how the use of wildlife resources – marine and terrestrial – and the provision of Indigenous NRM services can form integral parts of a hybrid economy. The gross value of subsistence output (nationally) for outstations was estimated at \$25 million in 1986 (Altman et al. 1995). Customary activity for an average Kuninjku³ outstation of 25 people was

³ Kuninjku are an Aboriginal clan group in Arnhem Land, northern Australia

estimated to amount to \$72 800 worth of food each year. This not only generated imputed income but indirectly generated cash, enhanced people's diet, nutrition and health status (Altman 2004).

4.3.3. The subjective wellbeing approach

'Wellbeing' is an inclusive concept and offers an alternative perspective to more typical economic concepts of utility and welfare, which tend to be applied in a narrow sense dealing with monetary measures and preferences (Dyack and Greiner 2006).

There are many examples in the wellbeing literature of the relationship between human wellbeing and environment. Prescott-Allen's (2001) *Wellbeing of Nations* links human wellbeing with ecosystem wellbeing, both of which are characterised and evaluated through a series of domains. This model provides a description and evaluation of human and ecosystem condition and the linkages between them.

- The concept of 'livability' (Pacione 2003) directly relates the conditions of the environment in which people live (natural and man made) to health and social indicators such as education.
- Newman (1999, in: van Kamp et al. 2003) notes that livability includes both individual and community wellbeing and is about the human requirement for social amenity, health and wellbeing.
- Mitchell (2000) examines a combination of measurable spatial, physical and social aspects of the environment and a person's perception of and personal relations with these.

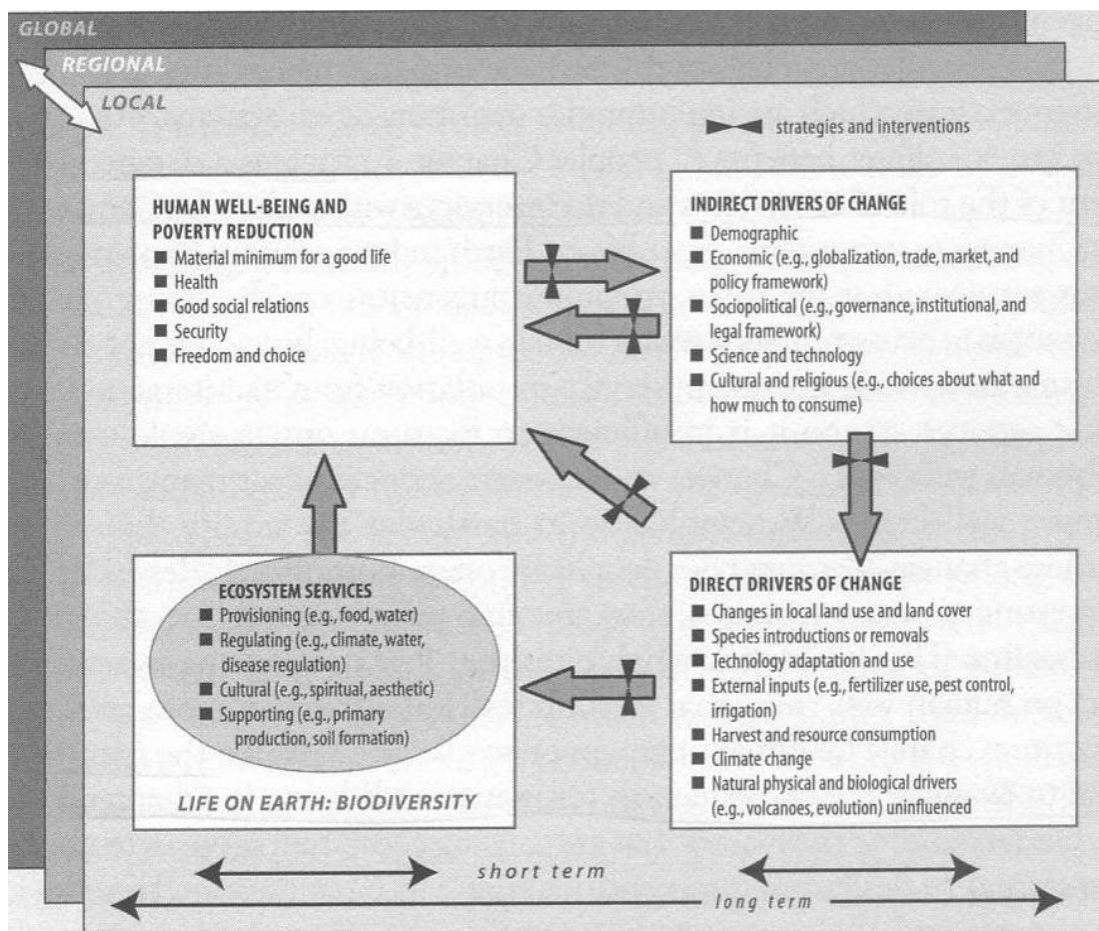
A large degree of conceptual commonality exists between the models despite superficial differences in terminology and disciplinary focus. The core issue addressed by all models is that people see themselves as individuals, members of communities, and parts of the natural system – and all three perspectives need to be considered in a comprehensive wellbeing framework. Ngarrindjeri worldviews conceptualise the relationship between human, animal and natural in different terms: *Our Lands, Our Waters, Our People, All Living Things are connected* (Ngarrindjeri Nation 2007: p5).

Another way to approach wellbeing is through the conceptual framework adopted by the Millennium Ecosystem Assessment that has at its core human wellbeing and poverty reduction (MEA 2003; Figure 2). It defines five core dimensions of wellbeing:

- material minimum for a good life – secure and adequate livelihoods, income and assets, enough food at all times, shelter, furniture, clothing and access to goods
- health – being strong, feeling well, and having a healthy physical environment
- good social relations – social cohesion, mutual respect, good gender and family relations, and the ability to help others and provide for children
- security – secure access to natural and other resources, safety of person and possessions, and living in a predictable and controllable environment with security from natural and human-made disasters
- freedom and choice – having control over what happens and being able to achieve what a person values doing or being.

Figure 2: Conceptual framework of wellbeing and poverty reduction adopted by the Millennium Ecosystem Assessment

Source: MEA (2003: p37)



4.3.4. Indigenous wellbeing

Because of its inclusiveness of values and descriptive-analytical qualities, Greiner *et al.* (Greiner *et al.* 2005; 2007) the subjective wellbeing approach was chosen to identify and scope the values that traditional owners in Australia attribute to various goods. The approach engaged Indigenous research participants, fostered focus group discussions, painted system linkages and enabled a prioritisation of values across use and non-use values.

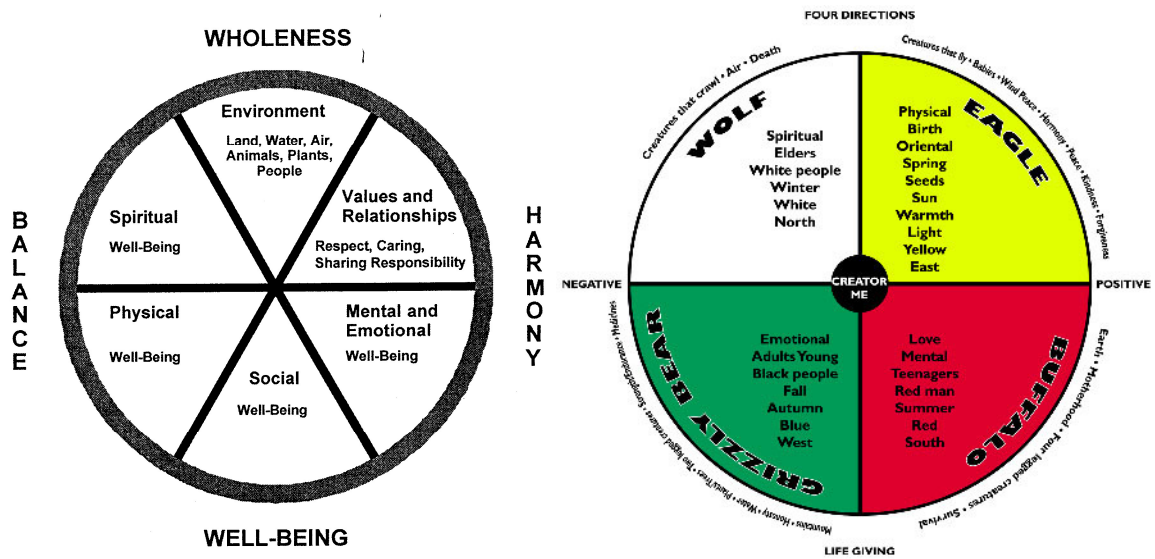
The Australian Indigenous people's holistic notion of health and wellbeing as a whole, not only of the individual but the whole community can be illustrated by two international examples – the 'medicine wheel' and 'piko'.

The medicine wheel is an ancient symbol used by many indigenous nations in north and south America to provide guidance and direction for the understanding of life and for striving to achieve wellbeing (Nabigon & Mawhiney, 1996). While details of expression vary between First Nations, each expression demonstrates the deep connections between human wellbeing and the natural environment (Figure 3).

Figure 3: Examples of expressions of the medicine wheel

Left: Findlay et al. 2000-2003.

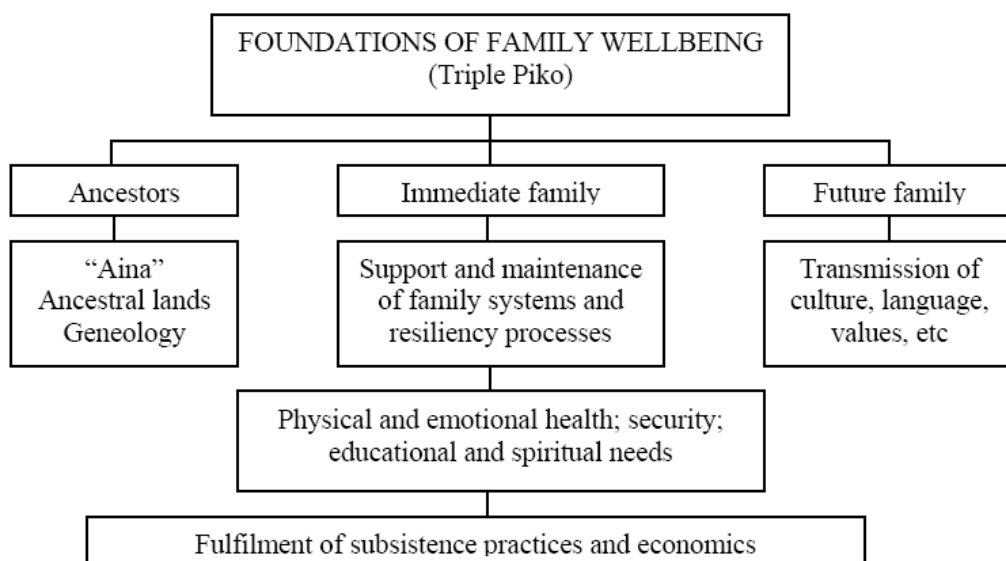
Right: illustration by Francis Whiskeyjack <<http://www.sd76.ab.ca/FNMI.php>: accessed 11 August 2010



McGregor *et al.* (2003) implemented an experiential wellbeing approach with a multi-layered model to illustrate wellbeing for people in Hawaii (Figure 4). The model differentiated wellbeing at five levels: individual, family, community, nation and *Aina*. *Aina* encapsulated a holistic conceptualisation of the natural system. The notion of *Aina* governed the life of the Hawaiian people. Family wellbeing is based on 'triple piko' or a relationship with past, current and future family.

Figure 4: Model of the foundations of Hawaiian family wellbeing

(after McGregor *et al.* 2003)



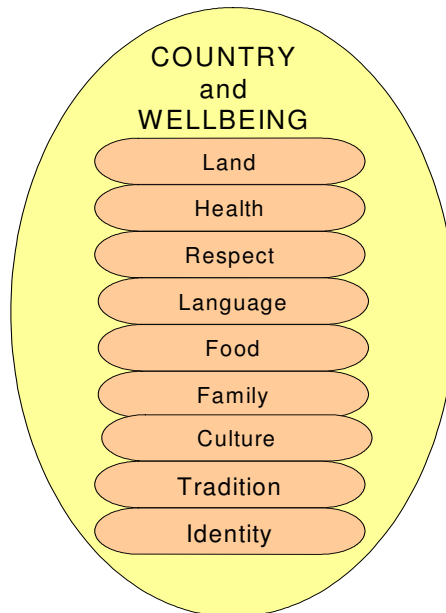
Family wellbeing is enhanced when:

- *Aina* reaffirms the sense of place and relationship to ancestral land and genealogy
- activities, processes and resources that support and enhance the present, including extended family, are maintained and
- transmission of culture, language and values are being sustained and carried forward to future generations.

Greiner et al. (2005) in their research with the Australian Nywaigi people and subsequently by Greiner et al. (2007) in their research with Giringun traditional owners demonstrated that wellbeing fundamentally relates to the embedding of human beings in the natural world and looks at the way in which people relate to each other, at any given time as well as through time, and how they see themselves (Figure 5). The wellbeing approach differentiates various domains of wellbeing – each in isolation as well as their linkages.

Figure 5: Wellbeing as unity and interconnectedness

Note: This diagram was developed in focus group discussions with Nywaigi traditional owners (Greiner et al. 2005: p45)



The domains that affect traditional owner wellbeing for the Giringun tribal groups of north-east Queensland include a range of factors (Figure 6) including access to and use of country, and the state of the environment on traditional owner wellbeing.

Atkinson et al. (2002) illustrate the holistic concept of wellbeing for the Ngarinman people of the Northern Territory. Their language includes the word *punyu*. *Punyu* encompasses person and country, and is associated with being strong, happy, knowledgeable, socially responsible, beautiful, clean and safe – both in the sense of being within the law/lore and in the sense of being cared for.

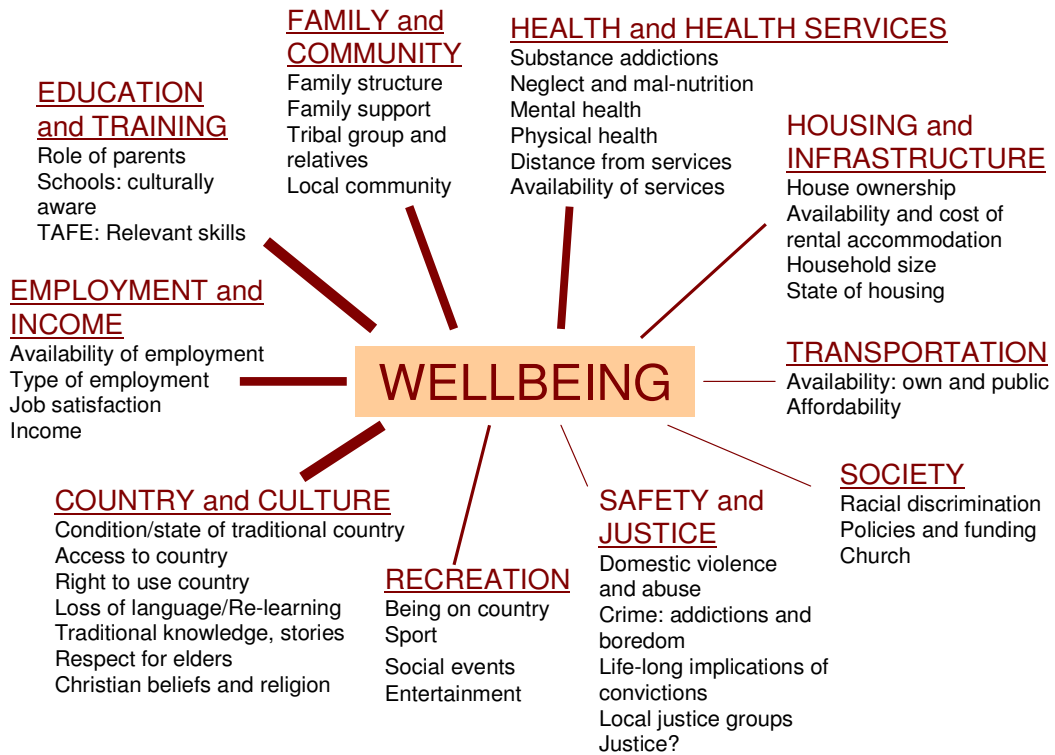
There is increasing scientific recognition and empirical evidence to suggest that health and wellbeing are complex matters with strong social determinants that are multi-layered and have strong systems characteristics (e.g. Tsey et al. 2003; Eckersley 2001; Najman 2001; Mobbs 1991).

This research draws a causal link between the state of connection to country and culture, the psychological state of individual and communities, and broad health and wellbeing indicators.

Figure 6: Wellbeing diagram for Girringun tribal groups

Source: Greiner *et al.* (2007)

Note: width of lines represents relative importance of domain to wellbeing



5. METHOD

5.1. Using the wellbeing framework

The wellbeing framework provides a robust and engaging method for conveying an understanding of what constitutes wellbeing for a group of people. It can be customised to focus on the particular scope of questions ([Greiner *et al.* 2005, 2007](#)).

The wellbeing framework also represents an economic approach of gauging the utility that people derive from life matters and things that are not easily quantifiable in dollar terms ([Dyack and Greiner 2006](#)) and to quantify relative benefits or costs. It can be customised to provide a way to identify the different types of values associated with water and describe the way these values contribute to the wellbeing of Ngarrindjeri people:

- How do Ngarrindjeri people use water and water-related ecosystems in the LLCMM? What is the 'cultural' or traditional economy?
- What other (non-use) values to Ngarrindjeri people attribute to water and water-related ecosystems in the LLCMM?
- How do these uses and values generate wellbeing benefits for individuals and the community/nation as a whole?
- How have changes in water flow/availability impacted uses/values and therefore wellbeing (minimal analysis)?
- What changes to management could improve wellbeing benefits?

In the context of this research, 'wellbeing' seeks to encapsulate and communicate what really matters to Ngarrindjeri people. An economic wellbeing approach and an assessment of cultural values are intrinsically linked, and anthropological expertise and local Indigenous cultural knowledge combine to bring relevant cultural issues into the discussion of economic/wellbeing implications.

The project provides a 'map' of the connections between water and associated resources, wellbeing and government policies, plans and processes. It serves as a tool that can guide policy, planning and research; and therefore lead to improved wellbeing for Ngarrindjeri people in particular and Indigenous people in general.

5.2. Focus group discussions

A combined focus group approach is efficient in that it produces an immediately useful project outcome. It also represented a more efficient use of time for the Ngarrindjeri participants as they confronted a number of urgent challenges (see [Hemming *et al.* 2007b](#)).

The focus-group approach provided all research participants with the opportunity to contribute by sharing individual experiences, stories, ideas and concerns. It provided information that could not be obtained through quantitative methods, even though quantitative methods could provide useful data for triangulation of the qualitative research results ([Greiner *et al.* 2005; 2007](#)).

Participation in focus group discussions created potential benefits to the participants – through being involved in the research, being valued as experts and being able to work collaboratively with other researchers. It also developed trust between group members and skills in identifying issues. Ngarrindjeri leaders were central in directing discussions and providing community participants with assurance about the research process. Participants

felt empowered through active participation in a process that could make a difference to the Ngarrindjeri community in the future.

5.3. Method implementation

The proposed research approach gained approval by the Ethics Committees of Charles Sturt and Flinders universities.

The conduct of focus group discussions was designed in a meeting between Daryle Rigney, Steven Hemming, Jim Birkhead and Romy Greiner on 13 June 2007. Ngarrindjeri leaders further shaped these plans during the workshops themselves (see Table 3).

Focus group discussions continued over the course of two days (14–15 June 2007) at Camp Coorong, with 21 Ngarrindjeri representatives (Figure 7) from across the Ngarrindjeri Nation (Table 4).

Figure 7: Workshop participants and research team after the workshop at Camp Coorong



Discussions were moderated mainly by Romy Greiner and Steve Hemming and supported by other team members – Jim Birkhead, Daryle Rigney, George Trevorrow, Tom Trevorrow and Matt Rigney. Key discussion points, sketches and verbal quotations were recorded on paper. No recordings and transcriptions were made. Verbal quotations were attributed to the meeting, not to individual participants. Photographs were taken to document the event. Verbal approval was given by all who were photographed.

Table 3: Outline of focus group discussions

| |
|---|
| <p>DAY 1 (11:00 – 16:30)</p> <p>Introduction</p> <ul style="list-style-type: none">▪ Welcome (George Trevorrow – Rupelli)▪ Introductions▪ Presentation of Caring for Country (Daryle Rigney and Steve Hemming)▪ CSIRO Project: History, objectives, partnership agreement, introduction to wellbeing concept and economic values (Team)▪ Workshop structure and objectives – for the research and for Ngarrindjeri▪ Formalities: photographs, records, letters of introduction▪ Comments and responses. <p>Morning Tea</p> <p>Developing a wellbeing framework</p> <ul style="list-style-type: none">▪ Reflections on the Giringun model▪ Brainstorm wellbeing domains and elements, connections, including historical context▪ 'Country and Water' as a wellbeing domain▪ Prioritisation – on behalf of Ngarrindjeri Nation▪ Consolidation <p>Lunch</p> <p>The economic value of country and water</p> <ul style="list-style-type: none">▪ Reflections on uses and non-use values (direct use, indirect use, intrinsic, bequest and option)▪ Commentary on the Model: Ngarrindjeri value system▪ Policy supporting Ngarrindjeri values of country and water <p>Summary</p> <p>DAY 2 (10:00 – 15:00)</p> <p>Ngarrindjeri principles relating to wellbeing, water and NRM</p> <p>Continue: the economic value of country and water</p> <p>Lunch</p> <p>Ngarrindjeri experience with NRM and preferred models</p> <p>Big issues for Ngarrindjeri Leadership with NRM</p> <p>Summary of workshop outcomes and process from here (Daryle Rigney, Steve Hemming, Tom Trevorrow, George Trevorrow, Matt Rigney)</p> |
|---|

Table 4: Participants in focus group discussions

| Name | 14 Jun | 15 Jun | Information about expertise and formal positions/roles (only an indicator only of the level of Ngarrindjeri expertise) |
|-------------------|---------------|---------------|--|
| Colin Koolmatrie | √ | | National Parks Ranger, Ngarrindjeri NRM Working Group (NNRMWG) |
| D M Wilson | | √ | |
| Derek Gollan | √ | | Former National Parks Ranger, NNRMWG |
| Derek Walker | √ | | Chair, Raukkan Council, Member of Murray-Darling NRM Board, NNRMWG |
| Devon Karpany | | √ | |
| Eileen McHughes | | √ | Chair, Lower Murray Nungas Club |
| Ellen Trevorrow | √ | √ | Secretary of Ngarrindjeri Land and Progress Association, Cultural Educator, Camp Coorong |
| George Trevorrow | √ | √ | Rupelli of Ngarrindjeri Tendi, Chair of Ngarrindjeri Regional Authority & NNRMWG |
| Gerald Sumner | | √ | |
| Grant Rigney | √ | √ | Ngarrindjeri Heritage Committee, Coordinator of Ngarrindjeri Reclaimed Irrigation Areas Project, Representative on 4 Nations Group, Adelaide/Mount Lofty NRM Board |
| Isobelle Campbell | | √ | Chair, Mannum Aboriginal Community Association |
| Jerry Kartinyerli | | √ | |
| Luke Trevorrow | √ | √ | Ngarrindjeri Heritage Committee |
| Major Sumner | √ | √ | Darpung Talkinyeri, Cultural Educator |
| Malcolm Aston | | √ | Kalparrin Farm |
| Matt Rigney | √ | √ | Chair, Ngarrindjeri Native Title Management Committee, Chair, MILDRIN |
| Neville Gollan | | √ | Cultural Educator, Camp Coorong, NNRMWG |
| Rita Lindsay Snr | | √ | Cultural Educator, Camp Coorong |
| Shirley Trevorrow | | √ | Cultural Educator, Coorong Wilderness Lodge |
| Steve Walker | | √ | Ngarrindjeri Coordinator, Coorong and Lakes Icon Site |
| Tim Hartman | √ | | Chair, SE Indigenous NRM, Senior Ranger, Coorong National Park |

6. WORKSHOP RESULTS

6.1. Ngarrindjeri Wellbeing

"There was a time when Wellbeing was Ngarrindjeri and Ngarrindjeri was Wellbeing."

The workshop participants expressed a strong sense of unity in the belief that Ngarrindjeri wellbeing relies on the foundational and ongoing spiritual connection between *Ngurunderi* (the Creator and Spiritual Ancestor), *Ruwe* (Country, Lands and Water) and the Ngarrindjeri Nation.

Ngarrindjeri leaders have been attempting to explain this Ngarrindjeri philosophy of life to non-Indigenous people for generations (see [Taplin 1879](#), [Tindale 1936](#), [Hemming *et al.* 1989](#), [Berndt *et al.* 1993](#), [Bell 1998](#)). The *Ngarrindjeri Nation Yarlumar-Ruwe Plan* (Caring for Sea Country and Culture) (Ngarrindjeri Nation 2007: p8) summarises this philosophy:

Ngarrindjeri respect the gifts of Creation that Ngurunderi passed down to our Spiritual Ancestors, our Elders and to us. Ngarrindjeri must follow the Traditional Laws; we must respect and honour the lands, waters and all living things.

Ngurunderi taught us our Miwi, which is our inner spiritual connection to our lands, waters, each other and all living things, and which is passed down through our mothers since Creation.

It was the intention of Ngarrindjeri leaders that the *Yarlumar-Ruwe* plan would provide an agreed, public version of Ngarrindjeri traditions and law/lore, available to non-Indigenous people, in particular government agencies. This excerpt explains some of the principles inherent in *Ruwe/Ruwar* (land/body).

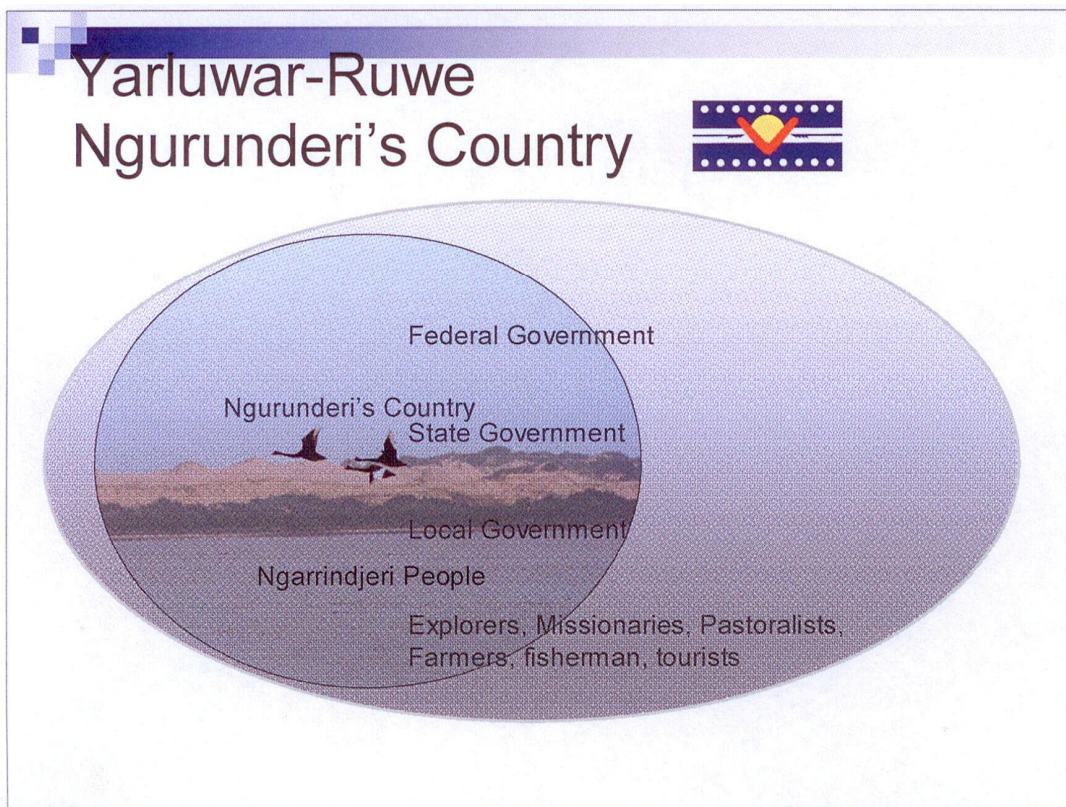
Ruwe (country, lands and water) or *Yarlumar-Ruwe* (sea country) forms a necessary foundation of Ngarrindjeri wellbeing through a diversity of uses and values. People – families, communities, society – are inseparably connected to it. Health is an expression of the state of wellbeing – ill-health is the result of a disturbance in the system.

Many matters directly or indirectly affect Ngarrindjeri wellbeing. For example, improved education leads to improved employment and consequently income. This, in turn, supports families directly by reducing stress and indirectly by supporting better health outcomes, with people looking after themselves better as well as being able to afford better health care. This means greater capacity to afford better housing and transportation. All these benefits mean there are also fewer issues with crime and a reduction of the holistic impact that imprisonment was having on Ngarrindjeri people. This, in turn improves individual, family and social conditions and wellbeing.

To introduce discussion of Ngarrindjeri wellbeing during the workshops, the facilitators used models developed in other settings. A preliminary model of Ngarrindjeri wellbeing drawn on butcher's paper acted as a focus for lengthy discussions.

Emerging in these discussions was the Ngarrindjeri *Ruwe/Ruwar* concept and the importance of *Ngurunderi* as the Creator and Law Giver. Additionally, Ngarrindjeri leaders such as Matt Rigney, Tom Trevorrow, Eileen McHughes and George Trevorrow made the strong connection between wellbeing and the loss of control, power and decision-making resulting from the non-Indigenous invasion of Ngarrindjeri *Yarlumar-Ruwe* (Figure 8 and Figure 9).

Figure 8: Competing interests on Ngarrindjeri *Yarluwar-Ruwe*



They emphasised that Ngarrindjeri people needed cultural, social and economic security based on a significant return of authority over Ngarrindjeri lands and waters. Ngarrindjeri leaders had identified a strategy for ensuring a healthy future for Ngarrindjeri people based around a Caring for Country Program that involved research, training, employment, economic development, good governance and strategic partnerships with government and non-government agencies.

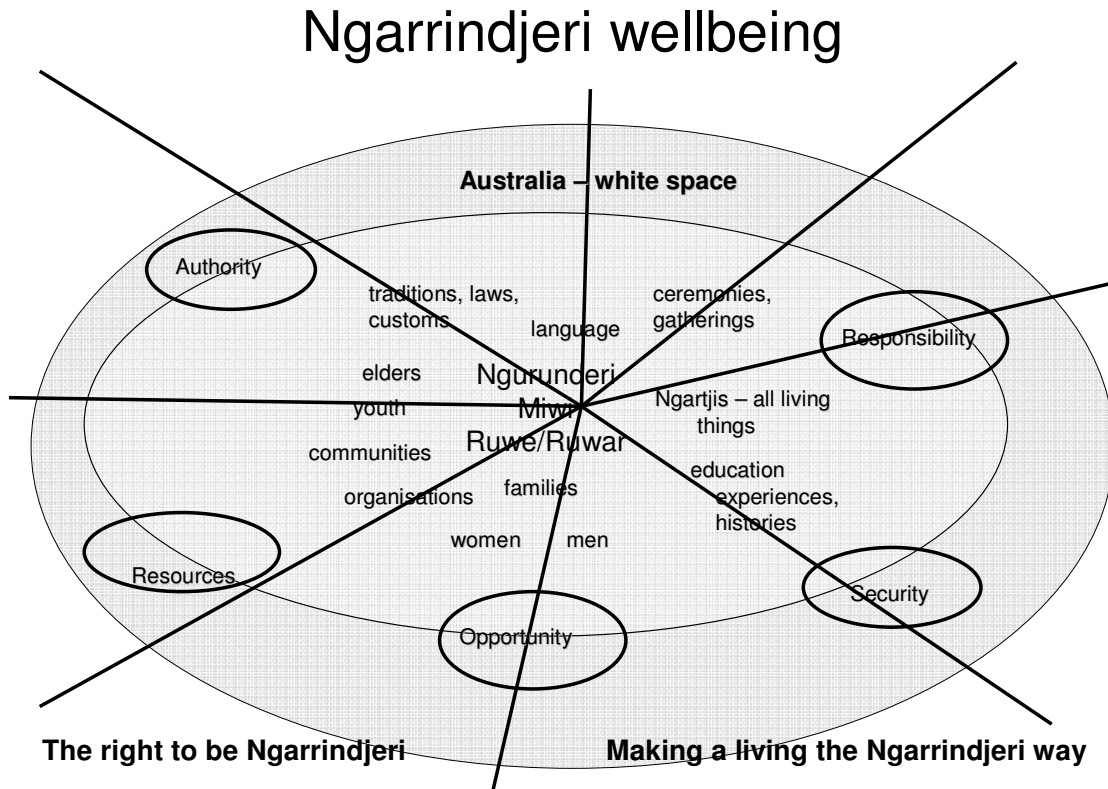
Thinking about a Ngarrindjeri model for wellbeing continued after the workshops were over and the Ngarrindjeri leadership has been using these models to inform their planning processes. These models do not have full Ngarrindjeri community endorsement, but they are a starting point in a broader community discussion.

Workshop participants identified as the principal source of ill-health the inequality that Ngarrindjeri people were enduring. Inequality resulted from a legislatively entrenched denial of rights and racism within society. Denial of rights was specifically in relation to use and management rights to *Ruwe*, over which Ngarrindjeri have lost much of their power and control. Re-gaining these rights was seen as a critical first step for improving wellbeing, providing a sense of 'security' and enabling improved education and employment – Ngarrindjeri cultural as well as mainstream – to Ngarrindjeri young and old.

The values and associated wellbeing benefits of various aspects of *Yarluwar-Ruwe* were illustrated through case studies of uses of water and water-related resources. Ngarrindjeri people derived value from water through direct and indirect use and non-use values.

Figure 9: Wellbeing as the space generated by rights and livelihoods

Ngarrindjeri wellbeing and the weakened threads of authority, security, opportunity, resources and responsibility. This diagram has at its centre: *Ruwe/Ruwar* (land/body), the Creation Ancestor *Ngurunderi* and the overarching Ngarrindjeri concept of spirit and wellbeing *Miwi*. The lines moving out from the centre refer to the symbolism contained in Ngarrindjeri weaving.



Direct use was through drinking water. From the Creation until recently, when Ngarrindjeri used to live in fringe camps, people would rely on water from wells, seeps or soaks that were reliable and contained water of potable quality. Ngarrindjeri monitored and maintained soaks and wells for their own use (and still do in some cases) and for the use of the animals, birds and other living things they relied on. This form of animal husbandry ensured the availability of these animals for food. This point was emphasised during the workshops because many of the freshwater soaks along the Coorong and in the Lower Murray have become saline as a consequence of land degradation and decreased inflow. This is one of the many markers Ngarrindjeri use to monitor the long-term degradation of *Yarluwar-Ruwe*.

The workshop participants decided to use a series of case studies of Ngarrindjeri use of water and water-related resources to think about their economic, social and cultural values in relation to wellbeing.

6.2. Black swan (*Kungari*) and swan eggs

Black swans (*Cygnus atratus*) are found throughout Australia with the exception of Cape York Peninsula, and are more common in the south. Males can reach a total (head, neck and body) length of up to 1.42 m. Swans prefer larger salt, brackish or fresh waterways and permanent wetlands. The breeding season in the south is typically June to September. Up to ten eggs are laid in an untidy nest made of reeds and grasses. The nest is placed either on a small island or floated in deeper water. Outside the breeding season, black swans travel quite large distances <www.amonline.net.au/factsheets/black_swan.htm>.

6.2.1. Values of swan eggs and swan egging

The eggs of the *Kungari* (black swan,) are a regular part of the diet of many Ngarrindjeri people. Eggs are large, possibly five times the size of a chicken egg. Family members collect swan eggs when the *Kungari* are breeding and look for particular signs to know when to collect the eggs. A typical harvest entails enough eggs for each person to receive three of four eggs per season – with elders having first choice and preferring eggs that are showing signs of turning into chicks.

Some swan eggs have also been sold to bakeries in the district, thus contributing to the cash economy.

Due to climate change, land degradation, the impacts drought and over-use of water in the Murray-Darling River system, the opportunities for swan egging have been significantly reduced.

Figure 10: Black swan and black swan egg

Source of photos: swan: <www.australianfauna.com/blackswan.php>, egg: © Australian Museum



Swan eggs have nutritional benefits; swan egging has indirect health benefits as an extensive outdoor activity.

A suite of cultural and social values are associated with swan egging:

- bringing eggs for elders means showing respect and reinforcing social bonds
- swan eggs are further shared within and between families

- those who find swan eggs can be proud and
- swan egging maintains Ngarrindjeri laws and traditions.

Important spiritual and cultural values are associated with collection methods and practices (e.g. cleansing nest sites after removal of an egg). The *Kungari* is a *Ngartji* (totem or special friend) of the Ngarrindjeri people. Important existence and bequest values are associated with *Ngartji*, with totem bearers having special responsibility to care for their *Ngartji* as part of caring for country.

Educational values are derived by developing young people's environmental literacy – there are rules as to how many eggs can be collected and where and how to read the developmental stage of eggs. Swan egging also reinforces Ngarrindjeri literacy and language. Today, *Kungari* – and swan egging – are a key part of the education program offered at Camp Coorong and thus form part of Ngarrindjeri intellectual and cultural property, and tradable knowledge.

Kungari generate cultural values through art and dance, education, sport, and spiritual enrichment, all of which generate important economic opportunities and income for Ngarrindjeri people.

Environmental values are still associated with swan egging as it is a way to manage *kungari* numbers, balance food sources, and monitor and manage habitat. Today, people are fully aware of the low swan numbers that, in combination with water-based changes to breeding seasonality, make it harder to find eggs.

6.2.2. Enabling factors of and impediments to swan egging

The workshop identified two key factors that act as impediments to swan egging: namely loss of access to *Kungari* breeding grounds and environmental changes.

Loss of access to breeding grounds has been caused by a loss of land ownership of Ngarrindjeri people and of management control, including the declaration of national parks. This has been further exacerbated by physical restrictions, including agricultural fences and residential developments.

A diversity of environmental changes have caused swan numbers to plummet. Farming of crops and grazing have caused the destruction of swan habitat, including breeding and feeding grounds and shelter areas. Introduced pest species including dogs, cats and foxes, as well as non-Indigenous people are swan predators. Over-allocation of water to irrigators throughout the Murray-Darling Basin means that there is less water available to support *Kungari* habitat, with areas drying up and reed islands becoming accessible to cattle. This has been compounded by a decline in water quality and increasing salinity. Other grazing animals such as rabbits and cows compete for the swans' food resources. There is also an increased level of disturbance of swans through recreational water sports and other recreational activities.

The key to changes in water and water quality is the loss of seasonal water flow caused by water regulation of the River Murray, the barrages between the Lower Lakes and the Coorong⁴, and extraction of water for irrigation – from the River and the Lower Lakes. Wetlands have been drained. These factors have resulted in *Kungari* breeding less frequently and without seasonal predictability. Associated with the loss of natural seasonality is a loss of Ngarrindjeri indicators for swan egging. Ngarrindjeri workshop participants pointed out that seasonal markers are felt directly by Ngarrindjeri people. For example, at the time of the workshops it was the season for *Congolli* (*Pseudaphritis urvillii*) and one participant made the point that he was 'hungry for a feed' of these fish. This is one way of understanding the Ngarrindjeri concept of *Ruwe/Ruwar*.

⁴ Five barrages separate the freshwater of the Lower Lakes from the more saline waters of the Coorong and Murray Mouth estuary

While boat technology is an option for Ngarrindjeri to access swan eggs, widespread ill health among community members means that few people can now participate.

6.3. Mulloway (jewfish)

Mulloway (*Argyrosomus hololepidotus*) are found around the southern half of Australia from Carnarvon in WA to Brisbane in QLD. Mulloway are a long strong robust fish with large scales and a convex tail fin. They can grow up to 59 kg in weight and up to 2 m in length. They are a prized sport and excellent eating fish. They are a predatory fish, which hunts in deep offshore reefs, coastal beaches and river systems.

6.3.1. Values of mulloway

Mulloway continues to be an important food source for Ngarrindjeri people. Elders prize the liver. Mulloway used to be plentiful in the Coorong but today most are caught from the southern ocean beach. Before the barrages were installed mulloway were speared from sandbars in Lake Albert near Meningie.

Ngarrindjeri people continue to dry and smoke fish and trade it among other traditional owner groups in exchange for other goods.

Figure 11: Mulloway (jewfish)

Source of photo: Fisheries Research and Development Corporation



The former abundance of mulloway in the Coorong was recounted at the workshop by one participant who told how in approximately 1980 a boat was sunk following a single cast with a net and a catch that overfilled the boat to the extent that it sank.

Ngarrindjeri for generations used spears and nets to catch mulloway for personal consumption and sale. In earlier years Ngarrindjeri held fishing licences and participated in the commercial fishing industry. They also earned money by repairing nets for other fishermen.

At present, Ngarrindjeri do not have a commercial fishing licence. Camp Coorong holds a one-net licence for fishing for 'cultural purposes'. It is a very small net.

6.3.2. Factors affecting abundance of mulloway and use by Ngarrindjeri people

The abundance of mulloway and size of the fish have declined dramatically. Reasons for this include:

- Lack of fisheries management has led to overfishing due to excessive take by both the commercial and recreational sectors. Young mulloway are also a by-catch in the mullet fishery.
- Fundamental changes have occurred to the mulloway habitat. The mouth of the Murray River is now frequently closed due to reduced water flow, which prevents the mulloway from entering the Coorong for breeding during summer months. The barrages further impede the movement of mulloway (and other fish) into the lakes.

Environmental changes have also reduced the opportunity for Ngarrindjeri people to use traditional fishing methods for catching mulloway. Stone fish traps have been rendered ineffective because the Coorong is no longer tidal. Traditional areas for spear fishing (e.g. sand bars) have been destroyed.

A series of institutional issues have compounded the loss of opportunity particularly since no Ngarrindjeri person holds a commercial fishing licence. Camp Coorong would like to hold a licence, but a licence must be held in a single person's name and that person has to be present in the boat during fishing. Buying a licence on the market is expensive and beyond the reach of individuals with one licence selling recently for approximately \$75 000.

6.4. Murray cod (*pondi*)

Murray cod (*Maccullochella peelii peelii*) are the largest Australian native freshwater fish species and are reported to grow to 1.8 m (113 kg). They are the iconic fish of the Murray-Darling Basin, which defines its natural distribution. They are sexually mature at three years of age (at around 370 to 380 mm in length). Murray cod is no longer common in vast parts of its natural system (Kerney & Kildea 2001).

Figure 12: Murray cod

Source of photo: Fisheries Research and Development Corporation



6.4.1. Values of *pondi*

Pondi hold a special place for Ngarrindjeri people as *Ngartji*. It was the first fish in the *Kaldowinyeri* (the Creation).

One workshop participant stated that the last known catch of a (small) *pondi* in the LLCMM occurred approximately 12 years ago. Some of the older workshop participants who had lived in the Lower Murray most or all their lives spoke of catching *pondi*. *Pondi* had been abundant until the 1960s.

Several of the Elders attending the workshops would not speak of their experiences in a public forum such as this. Even when encouraged by other Ngarrindjeri (younger) leaders who well-knew the Elders' knowledge and experiences of *pondi*, they did not feel

comfortable sharing this knowledge with the gathering. This reticence has its origins in a number sources and is common in Indigenous communities.

Pondi formed an important part of the Ngarrindjeri diet. Being a large fish, one typical fish would 'feed an entire family for a week'. It was mostly men who caught *pondi* because of their size. The preferred method of catching was with cord lines.

Important cultural and spiritual values are associated with *pondi*. When Ngurunderi was chasing *pondi* in the Creation, *Pondi* created the bends and wetlands along the River Murray in South Australia. Elders examine the fish guts, which contain information as to where the fish came from. (*The guts show the tree in them*). Social and cultural values are expressed through sharing the harvest according to Ngarrindjeri laws.

After the arrival of European settlers, Ngarrindjeri people also caught *pondi* for sale and trade to the newcomers. Ngarrindjeri used traditional methods of storing live fish such as tethering them with a rope through the bottom of the nose on the roots of a tree. Ngarrindjeri people would sell these fish to traveling buyers or take fresh *pondi* to the towns in the region for sale or barter.

6.4.2. Factors affecting abundance of *pondi* and use by Ngarrindjeri people

Pondi are uncommon today in the LLCMM region. Contributing factors are:

- the introduction and spread of European carp causing competition and habitat change
- habitat change through introduction of locks and weirs along the Murray River
- effluent from residential and industrial developments as well as house boats reducing water quality
- salinity
- loss of wetlands through drainage and reduced flooding leading to fewer breeding grounds for *pondi*.
- overfishing predominantly by commercial fishers but also the recreational sector
- Ngarrindjeri people catching fish in excess of subsistence needs to sell to white traders.

Even when *pondi* was still plentiful, Ngarrindjeri people were restricted in gaining access to former fishing grounds through private land.

Workshop participants expressed a strong ambition to develop aquaculture which would bring *pondi* back from the brink of extinction in certain parts of the river system and increase the abundance of mulloway – for people to enjoy and for the benefit of the natural system.

6.5. Cockles (*kuti*)

6.5.1. Values of *kuti*

A high direct use value is associated with cockles (Figure 14)⁵ in contrast to swan eggs, mulloway and Murray cod. Ngarrindjeri people continue to harvest and eat cockles during the warmer months of the year.

⁵ Another continuous use of *Yarluwar-Ruwe* is harvesting of fruits, berries, medicine plants and rushes for weaving (see for example: Hemming *et al.* 1989, Bell 1998) This activity takes

Cockles (*Donax detoides*) are collected on the beach/shore, where they are dug up out of the sand. Harvesting cockles is a cultural and family activity that families undertake typically three to four times per week during summer. Cockles are commonly shared between families. They are not sold but there is some trade with other Indigenous peoples.

Figure 13: Cockles

Source of photo: Ngarrindjeri Nation Sea Country Plan 2007



Harvesting cockles provides an opportunity for education, knowledge sharing, storytelling and social activity. It is an integral part of many cultural and educational programs run by the Ngarrindjeri community such as programs run at Camp Coorong: Race Relations and Cultural Education.

The presence of traditional owners on the Younghusband Peninsula provides monitoring of other users and uses (e.g. illegal berry and seed collectors from Adelaide have been observed and reported).

6.5.2. Factors affecting abundance of cockles and use by Ngarrindjeri people

Cockle collection remains a key on-country activity for Ngarrindjeri people for a number of reasons including:

- beaches are open access places and Ngarrindjeri – or anyone else – have not been excluded
- there is little public pressure on the resource as most of the beaches are difficult to get to, requiring a boat and walking.

However, commercial cockle fishers using rakes and digging up beaches are of concern. Other unlicensed harvest is illegal.

In terms of environmental factors, water quality on the seaward side of the coastline is not dependent on the same factors as in the Coorong or Lower Lakes although closure of the Murray River mouth does have an impact.

place on Ngarrindjeri lands, national parks, some private properties, reserves and roadsides, and forms an important part of personal and cultural activities on country.

6.6. *Yarluwar-Ruwe* as the basis for improving wellbeing

Among workshop participants, the idea of a Caring for Country Centre, as proposed in the Ngarrindjeri Nation *Yarluwar-Ruwe* Plan (2007), was accepted and seen as a critical milestone for Ngarrindjeri.

Workshop participants expressed a strong desire to use the connection that Ngarrindjeri traditional owners have with *Yarluwar-Ruwe* to take increased ownership of natural resource management and environmental outcomes – in the process generating meaningful educational and employment opportunities for members of the Ngarrindjeri community, providing choice and addressing socioeconomic disadvantage and health issues.

It was thought that the Centre could provide economic opportunities that would improve income and in turn support better lifestyles, education, individual and community health, and environmental health.

Workshop participants indicated that Ngarrindjeri people had a "... strong willpower from seeing light at the end of the tunnel".

The focus group worked through the values, which an Ngarrindjeri Caring for Country Centre (NCCC) could generate – for Ngarrindjeri and society as a whole, including:

- necessary space and place for Ngarrindjeri to think about, discuss and research caring for country in context with the new Ngarrindjeri Regional Authority and following the Ngarrindjeri Nation *Yarluwar-Ruwe* Plan
- 'mainstream science' as well as Ngarrindjeri history, traditions and knowledge, the Centre making a significant contribution to the sustainability of Ngarrindjeri culture and society and the better management of Ngarrindjeri lands and waters
- providing a place where Ngarrindjeri people could teach Ngarrindjeri and non-Ngarrindjeri including language programs, and singing and dancing classes
- providing formal education activities targeted at and tailored for different levels, including primary, secondary and tertiary students
- psychological benefits that could include improved pride and self-esteem of young Ngarrindjeri as well as recognition of Elders' roles in training and education
- conducting research programs, monitor research being conducted on Ngarrindjeri *Ruwe* and developing a statistical information/data base of Ngarrindjeri social, economic and other matters
- honouring people and celebrating excellence in areas such as sport and academic achievements
- providing a space to 'do positive stuff' and focus on constructive and progressive matters.

6.6.1. Research

The NCCC could have the financial resources and people with skills and training to collaboratively work with universities and other research providers. It could govern research and ensure that research was appropriate. Education could be two-way bringing together the research and publications produced by Ngarrindjeri researchers and Ngarrindjeri-related projects, and becoming a centre of Ngarrindjeri publishing.

6.6.2. Employment and economic development

The NCCC has the potential to generate new broad-ranging jobs for Ngarrindjeri people, including on-ground work, research, administration, business-related work and training. As

well as providing direct employment, the jobs could serve as spring boards for Ngarrindjeri to move into mainstream jobs by building expertise and confidence.

The NCCC could provide an opportunity to consolidate into one location existing but fragmented NRM-related positions. It could provide a chance to expand NRM capacity and build career paths.

The NCCC could be a catalyst for new business opportunities (e.g. through self-employment and establishment of commercial partnerships).

6.6.3. Care and management of *Yarluwar-Ruwe*

The NCCC could undertake on-ground activities, including re-vegetation, pest and weed control (terrestrial, aquatic, coastal), wetland restoration and management, nursery activities, and water quality monitoring. Non-Indigenous partners such as local councils could work closely with the NCCC to rehabilitate Ngarrindjeri lands and waters.

6.6.4. Families and community

The NCCC could be a place where discussions about important issues relating to Ngarrindjeri *Ruwe* take place. It could be a place to seek advice, with expert advice available.

It could also have a large existence value. Ngarrindjeri could have peace of mind to know that the NCCC existed. It could provide acknowledgement of the Ngarrindjeri point of view (as having a valid voice in the broader environment debate).

The NCCC could reinforce Ngarrindjeri traditions, law/lore and values. It could engender respect by caring for country, caring for *Nartjis*, caring for people.

"Caring for country is caring for people."

"Strong healthy country supports strong healthy people."

The NCCC could function as a meeting place much like Camp Coorong, but with a specific focus on Caring for Country. The NCCC could manifest a shared vision and be attractive to young and old.

6.6.5. Society

With regard to society the NCCC could:

- provide for increased collaboration between Ngarrindjeri people and other indigenous peoples, in Australia and overseas and foster exchange
- provide legal advice, support the rights of Ngarrindjeri people and seek to increase rights of Ngarrindjeri
- provide benefits for the wider community by providing economic spin-offs, and generating jobs and economic activity – the beneficial flow-on effects on personal and social health (e.g. less crime), could result in reduced costs to the public health and justice systems
- support strong Ngarrindjeri institutions (e.g. the regional authority) and represent a case of applied reconciliation through people and partnerships for shared responsibility for country.

6.6.6. Health

The workshop participants saw a suite of health benefits arising from the implementation and operation of the NCCC that could result in improved life expectancy and reduced incidence of disease of Ngarrindjeri people.

Taking more control of the management of Ngarrindjeri lands and waters was a key point. It could be achieved through the further development of Ngarrindjeri NRM and cultural heritage programs. Research, education and employment could provide economically sustainable futures for Ngarrindjeri people on Ngarrindjeri *Ruwe*.

Health could improve with more access to traditional foods, education about foods, being able to choose traditional foods and the physical activity of gathering/catching.

Health could also be improved with the removal of mental stress caused by:

- lack of power and control and therefore security
- denial of traditional foods
- traditional activities being illegal in the eyes of the non-Indigenous legal system and the associated fear of getting caught when harvesting native foods
- racism, disadvantage and contemporary neoliberal mythologies and
- knowledge that the lands and waters are dying and the *Nartjis* are ill.

"Healthy country means healthy people."

The NCCC could further build understanding and consciousness of self, thereby enabling Ngarrindjeri individuals to be positive in their outlook and effect change. It could build a shared vision and honour Ngarrindjeri achievements and celebrate Ngarrindjeri excellence. The NCCC could be positive, constructive and progress whilst respecting Ngarrindjeri traditions and values.

6.6.7. Culture

The NCCC could be a place that supported and developed a Ngarrindjeri way of life – a way of life that included ways of acting, thinking and feeling, of reclaiming language, traditions and institutions; and of shared values and attitude to people, places and things, including land, sea, and all living things. This follows the philosophies and visions identified in the Ngarrindjeri Nation *Yarluwar-Ruwe* Plan.

Two core principles identified during the workshop were (Figure 9):

- the right to be Ngarrindjeri
- the right to make a living the Ngarrindjeri way.

7. DISCUSSION AND INTERPRETATION

The Ngarrindjeri concept of wellbeing is holistic. It encapsulates the connections between people, their health and the natural environment. This conception is entirely consistent with notions of wellbeing by other Indigenous peoples.

The unity of people, health and country, is encapsulated by the word *Ngarrindjeri*. The link between these domains is inseparable.

Matters such as security, education, income, employment, housing, and transportation are seen as part of a diversity of enabling factors that, through a web of direct and indirect influences, support or affect the key domains and therefore Ngarrindjeri wellbeing. However, it is *Ruwe* 'Country', and *Ruwe/Ruwar* 'Land/Body' that combine lands and water and living things – that ultimately hold the key to health and wellbeing.

The land and waters is a living body. We the Ngarrindjeri people are a part of its existence. The land and waters must be healthy for the Ngarrindjeri people to be healthy... (Ngarrindjeri Nation 2007: p5).

The land and waters must be healthy for the Ngarrindjeri people to be healthy. We say that if Yarlumar-Ruwe dies, the waters die, our Ngarrindjeri die, then the Ngarrindjeri will surely die. (Ngarrindjeri Nation 2007: p13)

The current state of Ngarrindjeri wellbeing is low and people long to reclaim their previous wellbeing.

"There was a time when wellbeing was Ngarrindjeri and Ngarrindjeri was wellbeing."

The core for the ill-health of Ngarrindjeri people is attributed to the ill-health of the lands and water, of *Yarlumar-Ruwe*, compounded by the Ngarrindjeri loss of power and control on *Yarlumar-Ruwe*. Ngarrindjeri seek a just settlement with non-Indigenous people and the capacity to build a sustainable future on Ngarrindjeri *Yarlumar-Ruwe*.

Ngarrindjeri culture and economy ... *have always depended on the resources of our Yarlumar-Ruwe (Ngarrindjeri Nation 2007: p11)*. Resources used to be plentiful and support a settled lifestyle for the Ngarrindjeri people. The social and cultural values of the *Yarlumar-Ruwe* to the Ngarrindjeri nation are starting to be recognised (MDBC 2006), as have the Ngarrindjeri as traditional owners of the Lower Murray, Lakes, Coorong and Murray Mouth.

This research project has demonstrated, through a series of examples, how a number of factors – human-induced, environmental and institutional – have combined to almost obliterate some traditional food sources and degrade sources of fresh water, thus reducing their present direct use value for Ngarrindjeri. The workshop results demonstrate that – on one side of the scale – there has been a reduction of direct use value to virtually zero for Murray Cod, while – on the other side of the scale – harvest and use of cockles continue largely undiminished because its habitat remains largely intact and access to the resource has not been diminished. The examples of swan eggs and mulloway lie between those extremes.

However, physical decline and in some cases the destruction of the resources has not diminished the cultural and spiritual significance of these species as *Ngarrindjeri* and the obligation that Ngarrindjeri people have towards caring for country.

There is formal recognition that Ngarrindjeri social and cultural values are under threat, ... *primarily due to diminished and altered flows reaching the [Lower Lakes, Coorong and Murray Mouth]. Extensive river regulation and excessive water extraction have degraded habitats, reduced water quality and constricted the Murray Mouth (MDBC 2006: piii).*

The observations, stories and explanations that workshop participants shared about the state of the environment in the LLCMM matched the results of various scientific studies that show ... *that the environmental health of the Icon Site has greatly declined since European settlement, particularly since the 1940s under the combined influences of river regulation, increasing water extraction and barrage operation* (MDBC 2006: p29).

Observations shared in the workshop thus add further evidence to the existing knowledge of the impacts of the degradation on species and further demonstrate the intimate knowledge of the Ngarrindjeri Nation of this ecosystem.

Ngarrindjeri people feel a strong sense of obligation and responsibility towards their traditional country based on the Creation.

Ngarrindjeri respect the gifts of Creation that Ngurunderi passed down to our Spiritual Ancestors, our Elders and to us. Ngarrindjeri must follow the Traditional Laws; we must respect and honour the lands, waters and all living things. Ngurunderi taught us our Miwi, which is our inner spiritual connection to our lands, waters, each other and all living things, and which is passed down through our mothers since Creation. (Ngarrindjeri Nation 2007: p8)

Water is absolutely central. Water availability and quality are critical to supporting the health of *Yarluwar-Ruwe*. To achieve a healthy *Yarluwar-Ruwe*, sufficient water flows into the water-dependent systems is a necessary condition. Ngarrindjeri tend to consider such water flows as socioeconomic and cultural flows rather than environmental flows. The difference being that in determining these flows consideration is given in the timing and extent of these flows to the direct use values and intrinsic values of the traditional owners of the country. For example, increased water flows that did not follow seasonal patterns and the environmental conditions of the region generated since the establishment of the barrages, would not support the breeding of black swans and would therefore not be able to support social and cultural objectives of increasing availability of swan eggs for Ngarrindjeri harvest and consumption.

Use values are at the heart of Ngarrindjeri valuing of water, wetlands and floodplains (e.g. the need to have seasonal markers for organising Ngarrindjeri activities and for giving Ngarrindjeri a clear feeling of health and a direct connection to lands and waters). The environment is therefore text to be read, and a set of markers that produce feeling and therefore a sense of wellbeing (Hemming *et al.* 1989; Bell 1998; Ngarrindjeri Nation 2007).

8. CONCLUSIONS ON ECONOMIC VALUE

This collaborative, community-based, multidisciplinary research applies a subjective wellbeing approach to consider the social, cultural and economic values that Ngarrindjeri people derive from water and water-based ecosystems in the Lower Lakes, Coorong and Murray Mouth region of the Murray-Darling Basin.

The Ngarrindjeri are the recognised traditional owners of the region, which is one of six 'icon sites' within the Murray-Darling Basin, with a large proportion of the area also listed as wetlands of international significance under the Ramsar Convention.

This research adds further to the understanding of the physical and spiritual connection of Ngarrindjeri people to country. It illustrates:

- the variety of social, cultural and economic values that Ngarrindjeri people derive from water and water-based ecosystem
- how these values have changed over time
- why these values have changed over time and
- how these changes have negatively affected Ngarrindjeri wellbeing.

Most importantly the research identifies a pathway to regaining Ngarrindjeri wellbeing through rehabilitation of country, based on a just and productive relationship with the broader Australia's economy and society, but being aware of the cultural and spiritual dimensions of wellbeing.

Ngarrindjeri have a clear sense as to how Ngarrindjeri wellbeing can be improved in combination with improving the state of *Ruwe*: through the strategic and increased participation of Ngarrindjeri in the NRM industry. The focus of this strategy is on improving Ngarrindjeri wellbeing predominantly through increasing non-consumptive uses and values or *Ruwe*, with added direct and consumptive use benefits.

A Caring for Country Centre is a key part of the Ngarrindjeri strategy of engagement with the natural resource management industry. Ngarrindjeri regard NRM as a critical space in which to build a sustainable future for the Ngarrindjeri on Ngarrindjeri *Ruwe*. It would enable Ngarrindjeri to continue to fulfil Ngarrindjeri laws and responsibilities as passed down by the Elders from the Creation. A healthy Ngarrindjeri Nation with an active Caring for Country program will make a major contribution to the regional economy and the care and management of the LLCMM region. Educational, employment and income benefits could be complemented by psychological and social benefits, all of which would combine to strengthen people, their health and therefore wellbeing.

At the same time, the environmental improvements that a Caring for Country Centre could generate could re-create some of the use opportunities of the natural resources that existed in the past. Increased direct and consumptive use is seen as a cultural-spiritual activity to support Ngarrindjeri health – individual and social. Importantly, given the international ecological significance of the LLCMM, such activities could also see Ngarrindjeri looking after this country on behalf of the Australian people and the international community.

The Ngarrindjeri Nation Yarluwar-*Ruwe* Plan ([Ngarrindjeri Nation 2007](#)) provides detail on a variety of other contributions that Ngarrindjeri are offering, all of which can work towards achieving environmental, social and economic improvements for the region and the Murray-Darling Basin. In the process, physical, social, political, psychological and spiritual wellbeing benefits can be achieved for Ngarrindjeri.

During the workshop, some participants did not feel comfortable sharing detailed knowledge with the gathering. This reticence has its origins in a number of sources and is common in Indigenous communities. This is one reason why a collaborative research methodology is so vital to working with Indigenous communities, and why long-term research relationships cannot be replaced by short-term consultancies. As identified in this project the relations of power produced by colonisation require long-term relationships for trust to be developed resulting in more reliable data and better research outcomes. The collaborative research approach taken was able to address at least some of the discomfort.

The collaborative nature of this research project has provided the Ngarrindjeri leadership with the opportunity to participate as researchers in a project that has produced practical suggestions for improved relations between Indigenous and non-Indigenous people in NRM. The broad expertise of the research team, incorporating recognition of Ngarrindjeri expertise and experience, has enabled the results of the project to provide practical solutions to central questions that face government agencies charged with the management of the Murray-Darling Basin. This project tracks the creative engagement of the Ngarrindjeri Nation with the NRM industry in one of Australia's most threatened environmental icons. Enormous resources are being applied by governments to the better management of this region – only a small proportion of these resources produce positive outcomes for Indigenous communities such as the Ngarrindjeri. We suggest that long-term collaborative partnerships need to be created and the visions and strategies being developed by Indigenous people themselves need to be supported and valued.

PART 3

CONCLUSIONS AND RECOMMENDATIONS

Jim Birckhead, Steven Hemming, Daryle Rigney, Matt Rigney, George Trevorrow, Tom Trevorrow and Romy Greiner

Governments have recently begun to use the terms cultural economy and cultural flows in reports associated with NRM. In these documents there is a recognition of the uniqueness of Indigenous knowledge associated with water, wetlands and floodplains (see [MDBC 2006](#)). Whilst this recognition is important, a potential problem with arguing for Indigenous interests in water using a discourse of culture is that these interests may fall victim to reductionist thinking and past-oriented stereotypes (see [Hemming 2006](#); [Hattam et al. 2007](#)). This often leads to governments reducing Indigenous knowledge to commodities that are alienated from their original contexts and then applied by non-Indigenous interests to achieve what are perceived as better outcomes for the management of the region. Outcomes of this nature rarely produce positive transformations for Indigenous communities.

In the Ngarrindjeri context national, state and local governments recognise certain rights and interests to lands and waters through native title, heritage, NRM, and international treaties and declarations such as Ramsar. This recognition is important, but for the Ngarrindjeri it has produced variable, limited, uncertain and unpredictable outcomes. In response, Ngarrindjeri have attempted to strengthen the recognition of rights, interests and value through a strategic process of research, planning and agreement making (see [Hemming et al. 2007b](#)). Governments, however, are more responsive to established non-Indigenous interests and the possible financial and political costs of addressing Indigenous concerns. More often they seek to manage and minimise Indigenous rights and interests through a process of identification and re-definition.

In this project we have tried to recognise the challenges faced by the Ngarrindjeri leadership in their attempts to improve Ngarrindjeri wellbeing. We argue that attention might be more strategically focused on the socioeconomic value of the resources directed towards environmental areas identified as under threat. The LLCMM is recognised internationally as ecologically significant but is under enormous stress from drought, over-allocation of water and more broadly climate change. A significant proportion of investment in Ngarrindjeri country comes via research and management associated with NRM.

To pursue Ngarrindjeri wellbeing, therefore, there has to be a strategy for maintaining the connection between Ngarrindjeri wellbeing, lands and waters, and the Ngarrindjeri social system as it connects with broader social systems and economies. Isolating Ngarrindjeri wellbeing and so-called 'cultural' significance of water from the real world of globalised economies does not provide solutions for the better management of the Murray-Darling Basin, or a healthy and sustainable future for Ngarrindjeri people on Ngarrindjeri lands and waters.

Ecological educationalist David Gruenewald has written about a process of ethical transformation and engagement:

If re-inhabitation involves learning to live well socially and ecologically in places that have been disrupted and injured, decolonisation involves learning to recognise disruption and injury and to address their causes.
([Gruenewald 2003](#): p9)

Ngarrindjeri have a clear sense as to how Ngarrindjeri wellbeing can be improved in combination with improving the state of *Ruwe*: through the strategic and increased

participation of Ngarrindjeri in the NRM industry. The focus of this strategy is on improving Ngarrindjeri wellbeing predominantly through increasing non-consumptive uses and values of *Ruwe*, with added direct and consumptive use benefits. The costs of supporting a long-term Ngarrindjeri Caring for Country program can be understood as a critical element in the rehabilitation of Ngarrindjeri *Ruwe*. Ngarrindjeri leaders want to see benchmarks established identifying the costs of running programs that seek to achieve levels of access to water and water-related resources that were experienced by Ngarrindjeri people in the 1960s, 1970s and 1980s. This will produce improved Ngarrindjeri wellbeing through greater access to lands and waters and through engagement in research, planning and management programs aimed at achieving these benchmarks. In an era of global warming, climate change and drought, this long-term planning is considered essential by Ngarrindjeri leaders to ensure the cultural security and survival of the Ngarrindjeri Nation in a degraded Ngarrindjeri *Ruwe*.

It is clear that significant investments are being made in NRM, and in relation to Indigenous engagement, but to achieve long-term, measurable outcomes for these investments funding needs to be better coordinated and directed towards Indigenous capacity building.

We argue that because Ngarrindjeri water, wetlands and floodplains are so intimately tied to Ngarrindjeri wellbeing there must be a holistic, long-term program for Ngarrindjeri to address the impacts of extensive environmental degradation of Ngarrindjeri lands and waters. This means developing research, employment, education/training, planning, cultural and spiritual processes. In this way Ngarrindjeri can hope to achieve wellbeing in a globalising economy, a twenty-first century world and on *Yarluwar-Ruwe* that is affected by global warming and destructive non-Indigenous land and waters practices.

The following recommendations derive both from the wellbeing workshops and from project theory and interpretation in general, and reflect Ngarrindjeri points of view on how to move forward with respect to principles of Indigenous water rights and partnerships in NRM.

1. That the research agreement developed for this project be used as a benchmark for future projects with Indigenous Nations.
2. That funds be provided so that Indigenous people are able to obtain proper legal advice when engaging in research programs to enable development of sound research agreements that protect the interests of Indigenous people.
3. That research projects should include funding to enable Indigenous nations to properly engage with the research program. Research projects should also be designed to minimise stress on Indigenous leadership.
4. That collaborative research projects focusing on Indigenous community outcomes should always begin with discussions involving potential Indigenous nation partners.
5. That the collaborative, multidisciplinary research model developed as part of this project is used as a template for future research projects with Indigenous communities. Where possible long-term, community-based researchers should be incorporated into project teams.
6. That funding be better coordinated and directed towards Indigenous capacity building to achieve long-term positive measurable outcomes for the significant investments being made in NRM and associated Indigenous engagement.
7. That allocations of cultural water to Indigenous Nations in the Murray-Darling Basin be supported and understood as critical in the rehabilitation of the lands and waters that provide the foundation for Indigenous wellbeing. Indigenous Nations need to make their own decisions about how Indigenous allocations are used.
8. That significant investments in building the capacity of Indigenous Nations to be actively engaged in the long-term sustainable management of their lands and waters including Indigenous Caring for Country programs incorporating, research, planning, training and employment.

9. That development of regional Indigenous Caring for Country programs in the Murray-Darling Basin as recommended in the workshops be supported. This could mean the development of partnerships with Indigenous nations and a range of other non-Indigenous programs and agencies such as NRM Boards and universities. The Ngarrindjeri could be a pilot project.
10. That the principles identified in the recently ratified UN Declaration on Indigenous peoples provide the basis for collaborative projects that aim for best practice in Indigenous research, NRM and water policy development. This best practice should also be informed by Indigenous research and policy directions being taken in other Pacific Rim countries.

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