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**Water Reforms in NSW:  
An Update**

by

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## EXECUTIVE SUMMARY

The water industry Australia-wide is in transition and reforms of the industry present one of the most challenging and complex public policy issues for governments and communities to grapple with. Now under the scope of national competition policy, reforms to the water industry have been described as potentially one of the most rewarding of all competition reforms in terms of favourable economic and environmental outcomes, if implementation of the reform package is timely and complete.

At the core of recent water reforms in NSW is the need to ensure that adequate water remains within the river system to maintain river health. It is now recognised that the flow regime of a river is a key driver of river condition. The regime and variability of flow at various scales have been recognised as an important determinant of river habitat and biota, and Australian rivers have some of the most variable natural flow regimes in the world. The NSW Department of Land and Water Conservation notes that water quality and river flows are fundamentally linked. Yet it is apparent that in many communities water released from storages for environmental flow reasons is regarded as wasted.

Results from the National Land and Water Resource Audit program show that change in the condition of Australia's river basins is most strongly linked to: intensity of land use; increased nutrient and sediment loads; and loss of riparian vegetation. The Audit showed that only 3 percent of rivers in NSW were classed as largely unmodified, with 18 percent extensively modified.

One of the basic principles of contemporary water management is that of water management planning. The *Water Management Act 2000* provides for this through a consultative process, largely through advisory committees. These Committees have been empowered to develop riverine water sharing plans, which determine allocations of water for the environment and users. The Act also outlines water management principles and a State Water Management Outcomes Plan, which individual water sharing plans must respect.

The public consultation process held after the release of the draft water sharing plans has attracted considerable interest and publicity in the community. The NSW Farmers' Association predicted large job losses due to the proposed water reforms, a claim strongly denied by the Minister. After sustained publicity about the predictions of extensive rural job losses due to the water reforms, on 12 July 2002 the Minister agreed to the formation of a Socio-economic Review Committee to look at the concerns farmers and irrigators had expressed during the water reform process.

A key issue in the current controversy is about property and water rights. These issues arise from the 1994 Council of Australian Governments agreement on water reforms, which stated that water allocations or entitlements should be separated from land title, and that there should be water allocations for the environment.

## 1.0 INTRODUCTION

The water industry Australia-wide is in transition and reforms of the industry present one of the most challenging and complex public policy issues for governments and communities to grapple with. Now under the scope of national competition policy, reforms to the water industry have been described as potentially one of the most rewarding of all competition reforms in terms of favourable economic and environmental outcomes, if implementation of the reform package is timely and complete.<sup>1</sup>

From 1985 to 1996/97, total water use in Australia increased by 65 percent. Use for irrigation grew by 76 percent, urban/industrial consumption increased by 55 percent and rural use grew by 2 percent.<sup>2</sup> The increase in water consumption over the last few decades has not been without its costs, as over commitment and over extraction of water resources has led to riverine ecosystem degradation.

In New South Wales the implementation of the *Water Management Act 2000* has continued the reform of the water industry. The recent release of draft water sharing plans for the State's major rivers has attracted considerable interest, including from agricultural and conservation organisations. As the plans determine how much water is allocated to the environment and licence holders for a ten year period, the respective stakeholders are keen to have their views heard.

One of the main drivers of water reform is the deteriorating quality of riverine environments. This paper looks at the linkages between water quality and river flow, then reviews the state of water quality in rivers in New South Wales, and how it compares on a national basis. The operation of the Water Management Act and water sharing plans is explained. The paper concludes with a discussion on water rights.

## 2.0 WATER QUALITY AND RIVER FLOW

At the core of recent water reforms in NSW is the need to ensure that adequate water remains within the river system to maintain river health. It is now recognised that the flow regime of a river is a key driver of river condition. The regime and variability of flow at various scales have been recognised as an important determinant of river habitat and biota, and Australian rivers have some of the most variable natural flow regimes in the world.<sup>3</sup>

The NSW Department of Land and Water Conservation notes that water quality and river flows are fundamentally linked. Yet it is apparent that in many communities water released from storages for environmental flow reasons is regarded as wasted. For instance, in regard to recently released draft water sharing plans, *The Land* commented: "A dry season this

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<sup>1</sup> Shadwick, M. *A Viable and Sustainable Water Industry*. National Competition Council Staff Discussion Paper, AusInfo, Canberra, 2002, at 5.

<sup>2</sup> Shadwick, M. *A Viable and Sustainable Water Industry*. National Competition Council Staff Discussion Paper, AusInfo, Canberra, 2002, at 10.

<sup>3</sup> Commonwealth of Australia, *Australian Catchment, River and Estuary Assessment 2002*. National Land & Water Resources Audit, Volume 1, 2002, at 63.

year has brought home the realities of the flow formula in the current plan. Late last year about 124,000 megalitres of a 245,000 megalitre inflow into the dam were released straight away as environmental allocations, with the water left in the dam earmarked for stock, domestic and town use, leaving none for irrigation. Irrigators claimed this was a waste of water with no indication of any benefit to the environment. They want environmental flows to be released only when a clear picture is available on how much water is held in the dam at the start of the irrigation season.”<sup>4</sup> This section of the paper explores some of the linkages between water quality and river flow.

The linkage between water quality and river flow can be direct and indirect, and varies over time and sections of a river. Direct influences include where concentrations or transport of pollutants in streams is influenced by flows. Indirect influences refers to the ways that flow influences stream habitat and ecological health, which influences ecological processes occurring in those streams. These ecological processes, such as the natural processing of organic matter and nutrient input into streams, in part helps determine the prevailing water quality.<sup>5</sup>

It is evident that many water quality problems are caused or exacerbated by altered river flows. Therefore a flow regime that maintains and restores each component of the natural flow regime is necessary to protect water quality and the ecological habitats and processes that in turn modify water quality. The Department of Land and Water Conservation has identified the following key management issues in regard to interactions of flows and water quality:

- Barriers – including dams and weirs. The upstream impacts of these structures includes: pooling and thermal stratification of water; trapping of sediments; accumulation of nutrients and toxicants and increased propensity for blue-green algal blooms. Downstream water quality impacts generally result from: the reduction of flow; loss of freshness relied upon by some aquatic organisms; and changes in chemistry such as increases in nutrients, manganese and iron concentrations and decreases in dissolved oxygen.
- Eutrophication and algal blooms – in eutrophic systems, the accumulation of nutrients nitrogen and phosphorus is such that the productivity of the system ceases to be limited by nutrient availability. This provides favourable conditions for the development of algal blooms if light and other conditions are also favourable. The Department notes that algal blooms are a natural occurrence, but current river and land management practices have exacerbated the number, frequency and magnitude of blooms. The management of eutrophication involves not only the control of excess nutrient loads, but also maintaining river flows, particularly protection of flushing flows, low flows and flow variability. Flow management can minimise the accumulation of excess nutrients and prevent stratification behind barriers that may increase the bio-availability

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<sup>4</sup> “No water, no future” in *The Land*, 4 July 2002.

<sup>5</sup> NSW Department of Land and Water Conservation, *Advice to Water Management Committees, No. 11, Integrating water quality and river flow objectives in water sharing plans*. ND.

of nutrients that have accumulated. In many lowland Murray Darling Basin rivers, existing stream and sediment nutrient levels are sufficient to support algal blooms permanently, with light availability and other factors the limiting factors. Under these circumstances, flow management is critical in managing turbidity and nutrient availability through limiting stratification of pools.

- Exotic species – a more regulated flow regime favours the dominance of exotic species such as carp. Carp are also known to create water quality problems by stirring up bed and bank sediments through their feeding habits, which increases turbidity.
- Water quality during low flows – most pollutants will become concentrated during low flow periods, which means the environmental impact of point source discharges is increased during these times. Low flows can induce groundwater discharge into rivers if the hydraulic conditions favour this outcome. Where the groundwater is of poor quality (eg saline) it can degrade water quality in the stream. However, groundwater can also support water quality and aquatic habitat, increasing the occurrence of low flows during extended dry periods. The protection of low flow helps to maintain connectivity between pools of water, which become refuge habitats during periods of very low or no flow. Lowering of water levels of these pools, or further reductions in interconnecting flows during these dry times may detrimentally affect water quality by increasing the rate at which stratification of pools occurs, decreasing dissolved oxygen, or increasing water temperature and salinity.
- The role of medium and higher flows – these flows, known as freshes, are important in flushing the system, increasing dissolved oxygen levels and reducing or diluting salinity levels. Flushing flows can destratify water bodies and flush out or break up algal blooms. The first major flood or fresh after low flow periods is particularly important to be protected. Protection of higher flows will help to maintain water quality in end of system features such as wetlands or estuaries by providing flushing flows and freshwater inputs.
- Natural river systems are characterised by periodic floods of various magnitudes. During these over bank flows, water becomes more turbid and carries more nutrients and organic matter from the floodplain back into the river system. The movement of organic matter and sediment through the system is an important process and needs to be maintained. River regulation, construction of levees and water extraction all reduce the number of smaller over bank flows as well as reducing the influence of larger floods. As a result, organic matter, sediment and nutrients that would otherwise have been added to streams during these smaller floods accumulates on river banks and flood plains. This accumulated organic matter can contain large amounts of polyphenols that can be extremely toxic to fish. When the large floods do occur and inundate the flood plains, the accumulated organic matter is rapidly decomposed by biological processes that reduce the dissolved oxygen in the water, leaving the water flowing back into the river high in sediment, nutrients and polyphenols and low in dissolved oxygen. Floodplain drainage often transports this water rapidly to the stream, and in extreme cases, can be a contributing cause to significant fish kills. By maintaining the frequency of small over bank flows the harmful water quality impacts of the less frequent large floods are reduced.
- Rise of water level and fall – the flow height of a river can change rapidly as a result of releases from dams, especially those with hydroelectric facilities. Large scale pumping of water can have similar effects. Under these conditions water levels rise or



fall quickly over periods of hours or a day, rather than several days or weeks under natural conditions. This can lead to exposed waterlogged banks collapsing under the unsupported weight of water held in the soil, resulting in erosion, increased water turbidity and sedimentation.<sup>6</sup>

Professor Harris, Chief of the Land and Water Division of the CSIRO, noted in a recent speech that aquatic systems can exist in two states: either clear water dominated by macrophytes, or turbid and phytoplankton dominated. He suggested that within a very short time of clearing the landscape for agriculture, we have turned our rivers from clear and macrophyte dominated to turbid and phytoplankton dominated. He stated:

What we have done is to change the water chemistry to one in which is more sodium dominated, has high clay loadings, lots of organic carbon, and which is very turbid. These are just the sorts of conditions that blue/green algae love. You notice that there is no wild riparian vegetation. We fiddle with the flows all the time, and in saline areas the riparian vegetation is killed by the salt. So, I would suggest to you, we have changed the nature of our rivers irrevocably, except in geological time scales. The fact of the matter is the water chemistry has changed quite dramatically since the original condition...What we have done by fiddling with the land use, fiddling with the flow and actually fiddling with the food chains in terms of carp, what we have actually done is to eliminate most of the macrophytes from our systems and we now have systems that are plankton dominated. Many of those plankton blooms are toxic. They are a danger to human health<sup>7</sup>

Professor Harris stressed the need to learn more about the ‘physiology’ of a catchment, because once the ecology of an ecosystem comes to a point of no return it is very difficult to rehabilitate the landscape. He offered the following example:

In terms of salinity, ... once you salinise the landscape you have got to a point of no return, because you can't put the trees back to recover it. Once you get to turbid, saline highly disturbed rivers, it's very difficult to recover them. At least it is very difficult to recover them without putting a very large proportion of the native vegetation back. What would we then do for agriculture?<sup>8</sup>

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<sup>6</sup> NSW Department of Land and Water Conservation, *Advice to Water Management Committees, No. 11, Integrating water quality and river flow objectives in water sharing plans*. ND.

<sup>7</sup> Harris,G, “The Health of Australian Rivers: Making Sense of Water Quality Data: 11<sup>th</sup> Annual Jack Beale Water Resources Lecture, 2000. Water Research Foundation of Australia, Research Report, at 5.

<sup>8</sup> Harris,G, “The Health of Australian Rivers: Making Sense of Water Quality Data: 11<sup>th</sup> Annual Jack Beale Water Resources Lecture, 2000. Water Research Foundation of Australia, Research Report, at 6.

### 3.0 WATER QUALITY OF NSW RIVERS

The National Land and Water Resource Audit program released the *Australian Catchment, River and Estuary Assessment* in March this year. Its results showed that change in the condition of Australia's river basins is most strongly linked to:

- Intensity of land use;
- Increased nutrient and sediment loads; and
- Loss of riparian vegetation.<sup>9</sup>

The Assessment used indices for key measures affecting river condition. These included an aquatic biota index and an environment index. The environment index was further subdivided into four subindices: river catchment disturbance; river habitat change; hydrological disturbance; and nutrient and suspended load subindex. For each of these indices, the assessment was based on the departure from 'reference', or pre-European settlement conditions. River condition assessment classification was then determined as below:

**Table 1: River Condition Assessment Classification  
Aquatic Biota Index (macro-invertebrates)**

Reference Condition	Stream macro-invertebrates are similar in type to those at reference sites
Significantly Impaired	Between 20% and 50% of the expected macro-invertebrate families have been lost
Severely Impaired	Between 50% and 80% of the expected macro-invertebrate families have been lost
Extremely Impaired	Between 80% and 100% of the expected macro-invertebrate families have been lost

The results for NSW of the Assessment, and how they compare to other states, is shown in table 2.

**Table 2: Aquatic Biota Index Results for each State and Territory**

	Total length of reach (km) in each category and % of total in brackets				
	Reference	Significantly Impaired	Severely Impaired	Extremely Impaired	% of total length with data
NSW	11 366 (50)	7 551 (34)	2 801 (13)	690 (3)	38
Queensland	9 334 (80)	1 997 (17)	250 (2)	16 (1)	16
ACT	169 (64)	76 (29)	17 (7)	0 (0)	97
Victoria	9 347 (76)	2 447 (20)	344 (3)	49 (1)	77

<sup>9</sup> Commonwealth of Australia, National Land and Water Resource Audit, *Australian Catchment, River and Estuary Assessment 2002*. Volume 1, 2002 at 78.

Tasmania	4, 248 (75)	1 097 (20)	142 (3)	100 (2)	100
Sth Australia	7 866 (83)	1 098 (12)	124 (1)	389 (4)	98
W. Australia	4 401 (64)	1 977 (29)	419 (6)	31 (1)	27
N.Territory	2 063 (88)	247 (10)	47 (2)	0 (0)	11

The Assessment showed that NSW has the poorest aquatic biota condition, with approximately 50% of the river length assessed having impaired aquatic condition. Some of the most affected areas were the Georges River and Wollongong coast basins. The Assessment noted that results are underestimates of change in some parts of the country, including the lowland rivers of the Murray Darling Basin. In these areas the reference sites used as benchmarks had already been modified to some extent since European settlement.<sup>10</sup>

Table 3 outlines the classification index for river condition assessment, ranging from largely unmodified to extensively modified.

**Table 3: River Condition Assessment Classification Environment Index**

Largely Unmodified	<ul style="list-style-type: none"> <li>• Minimal disturbances from catchment land uses;</li> <li>• Limited changes to the hydrological regime;</li> <li>• Limited changes to habitat (eg riparian vegetation reasonably intact);</li> <li>• Suspended sediment, total nitrogen and total phosphorus loads close to natural.</li> </ul>
Moderately Modified	<ul style="list-style-type: none"> <li>• Catchment dominated by land uses that disturb the river to some extent (eg dryland cropping, grazing);</li> <li>• Some changes to the hydrological regime due to impoundments;</li> <li>• Some changes to habitat (eg riparian vegetation reduced to 50-75% original coverage);</li> <li>• Loads of suspended sediment, nitrogen and phosphorus above natural.</li> </ul>
Substantially Modified	<ul style="list-style-type: none"> <li>• Catchment land uses, such as intensive cropping and irrigation cause moderate to severe disturbance;</li> <li>• Substantial changes to the hydrological regime;</li> <li>• Substantial changes to habitat including</li> </ul>

<sup>10</sup>

Commonwealth of Australia, National Land and Water Resource Audit, *Australian Catchment, River and Estuary Assessment 2002*. Volume 1, 2002 at 79.

	<p>loss of 50-75% riparian vegetation, connectivity affected by nearby dams;</p> <ul style="list-style-type: none"> <li>• Moderate to high loads of suspended sediments, nitrogen and phosphorus.</li> </ul>
Extensively Modified	<ul style="list-style-type: none"> <li>• Catchment land uses, such as intensive agriculture or urbanisation, cause significant disturbance to streams;</li> <li>• Significant changes to the hydrological regime (eg large reductions in flow and changes in seasonality of flow events);</li> <li>• Extensive changes to habitat, including loss of riparian vegetation, loss of connectivity and extensive sediment deposition;</li> <li>• High loads of suspended sediment, total nitrogen and total phosphorus.</li> </ul>

The results for the river environment index are shown in table 4.

**Table 4: River Environment Index Results for each State and Territory**

	Total length of reach (km) in each category and % of total in brackets				
	Largely Unmodified	Moderately Modified	Substantially Modified	Extensively Modified	% of total length with data
<b>NSW</b>	<b>1 619 (3)</b>	<b>39 232 (68)</b>	<b>17 089 (29)</b>	<b>18 (0)</b>	<b>97</b>
Queensland	8 743 (13)	48 214 (71)	19 599 (16)	0 (0)	93
ACT	43 (16)	191 (71)	36 (13)	0 (0)	100
Victoria	3 085 (20)	9 042 (60)	3 099 (20)	0 (0)	97
Tasmania	2 028 (37)	3 250 (59)	194 (4)	0 (0)	98
Sth Australia	299 (4)	4 666 (61)	2 635 (35)	0 (0)	79
W. Australia	1 487 (7)	15 927 (78)	2 929 (14)	12	27
N.Territory	2 063 (88)	247 (10)	47 (2)	0 (0)	11

As shown above, only three percent of rivers in New South Wales were classed as largely unmodified. Increases in nutrient and suspended loads, and decreases in the extent of riparian vegetation have resulted in 97 percent of the State's rivers being assessed as moderately modified or worse compared to the natural condition. As noted, the environment index was divided into subindices and the results of these may assist in the analysis of possible causes of river degradation. The results for the river catchment disturbance subindex for each state and territory are shown in table 5.

**Table 5: River Catchment Disturbance Subindex for each State and Territory**

	<b>Total length of reach (km) in each category and % of total in brackets</b>				
	<b>Largely Unmodified</b>	<b>Moderately Modified</b>	<b>Substantially Modified</b>	<b>Extensively Modified</b>	<b>% of total length with data</b>
<b>NSW</b>	<b>5 773 (10)</b>	<b>52 343 (90)</b>	<b>216 (0)</b>	<b>32 (0)</b>	<b>95</b>
Queensland	5 119 (7)	66 623 (93)	300 (0)	0 (0)	98
ACT	158 (59)	105 (39)	2 208 (14)	87 (1)	95
Victoria	1 716 (11)	11 479 (74)	2 208 (14)	87 (1)	95
Tasmania	2 455 (44)	2 918 (52)	213 (4)	0 (0)	96
Sth Australia	463 (5)	8 422 (90)	519 (5)	70 (0)	94
W. Australia	6 038 (24)	19 149 (76)	8 (0)	12 (0)	94
N.Territory	8 752 (43)	11 739 (57)	0 (0)	0 (0)	97

The catchment disturbance index measured the extent of recent land clearing and land use. Changes tended to be widespread and relatively uniform, reflecting the dominance of broad-acre agriculture. Urban development and more intensive agriculture had impacts on rivers in some localised areas, particularly along the east coast. Areas most affected were close to urban areas, including Sydney, where infrastructure is dense and there are areas of intensive agriculture.<sup>11</sup> The results for another river environment condition sub-index, river habitat, is presented in table 6.

**Table 6: River Habitat Subindex for each State and Territory**

	<b>Total length of reach (km) in each category and % of total in brackets</b>				
	<b>Largely Unmodified</b>	<b>Moderately Modified</b>	<b>Substantially Modified</b>	<b>Extensively Modified</b>	<b>% of total length with data</b>
<b>NSW</b>	<b>15 724 (27)</b>	<b>19 695 (33)</b>	<b>21 100 (37)</b>	<b>1 845 (3)</b>	<b>98</b>
Queensland	45 389 (66)	18 184 (27)	4 263 (6)	130 (1)	94
ACT	148 (55)	68 (25)	54 (20)	0 (0)	100
Victoria	8 301 (53)	3 488 (23)	3 489 (23)	211 (1)	98
Tasmania	3 296 (59)	998 (18)	1 177 (21)	114 (2)	100
Sth Australia	1 384 (17)	2 764 (35)	3 809 (47)	30 (1)	83
W. Australia	7 522 (34)	9887 (46)	4 190 (19)	286 (1)	86
N.Territory	9 134 (62)	2 589 (18)	2 790 (19)	15 (1)	71

The main indicators linked to river habitat change was loss of riparian vegetation and increased sediment loads in rivers. Riparian vegetation plays a number of key roles in

<sup>11</sup> Commonwealth of Australia, National Land and Water Resource Audit, *Australian Catchment, River and Estuary Assessment 2002*. Volume 1, 2002 at 83.

ecosystem processes, and increased sedimentation in streams has led to the smothering of habitat. Only 27 percent of rivers in New South Wales were largely unmodified, the second worst state after South Australia, which had only 17 percent of its rivers still largely unmodified.

Table 7 presents the results of the nutrient and suspended sediment load sub index.

**Table 7: Nutrient and Suspended Sediment Load Subindex for each State and the ACT**

	<b>Total length of reach (km) in each category and % of total in brackets</b>				
	<b>Largely Unmodified</b>	<b>Moderately Modified</b>	<b>Substantially Modified</b>	<b>Extensively Modified</b>	<b>% of total length with data</b>
<b>NSW</b>	<b>1 692 (3)</b>	<b>23 784 (41)</b>	<b>27 630 (48)</b>	<b>4 678 (8)</b>	<b>97</b>
Queensland	2 809 (4)	12 660 (20)	40 347 (64)	7 573 (12)	97
ACT	9 (3)	89 (33)	172 (64)	0 (0)	100
Victoria	4 419 (29)	5 067 (33)	5 287 (35)	410 (3)	96
Tasmania	3 233 (59)	1 811 (33)	429 (8)	0 (0)	98
Sth Australia	210 (3)	2 860 (39)	4 112 (55)	203 (3)	76
W. Australia	870 (4)	2 988 (15)	15 759 (78)	461 (2)	98

In terms of nutrient and sediment loads, 97 percent of the assessed river length in New South Wales was carrying a greater load than natural levels, with eight percent substantially modified. The Assessment noted that increases in total phosphorus and suspended sediment loads are strongly linked to degradation of water quality. Total phosphorus loads in the rivers assessed Australia wide have increased on average 2.8 times above natural levels. The average annual export of total phosphorus to the Australian coast from the assessed rivers is estimated at nearly 19,000 tonnes. Over 80 percent of the river length has suspended sediment loads that are 10-200 times natural loads. The processes causing high phosphorus and suspended sediment loads in rivers are linked because, in most regions, much of the phosphorus load is attached to sediment particles. The authors of the Assessment concluded that the most likely principal factor generating high phosphorus and sediment loads was the loss of vegetation in the catchment or riparian land, leading to increased hill slope, gully and bank erosion and suspended sediment loads in rivers.<sup>12</sup>

The Assessment noted that scores for the two main indices (aquatic biota and environment) would ideally be similar for each basin. However, it was found that the biota index does not demonstrate the same degree of degradation as the environment index. Reasons put forward for these differences included:

- Macro-invertebrates may be insensitive to some environmental changes, the inclusion

<sup>12</sup> Commonwealth of Australia, National Land and Water Resource Audit, *Australian Catchment, River and Estuary Assessment 2002*. Volume 1, 2002 at 91.

- of other biota such as streamside and aquatic plants, fish or water birds would give a more comprehensive assessment of the cumulative effects of environmental change;
- There may be lags between environmental degradation and environmental condition;
  - An environmental component that would explain a biotic response was not measured (eg a toxicant); and
  - Modelled inputs to the environment index may not reflect actual site values or land management practices.

It was noted that river reaches with the most urgent need for strategic management and rehabilitation are those in highly modified catchments that have lost much of their riparian vegetation and have dams and levees that disrupt movement of biota and material in the river. These reaches are located in parts of the Murray-Darling Basin, south-west Western Australia, western Victoria and the South Australian wheat growing areas. River reaches that have largely unmodified habitat in terms of riparian vegetation, but very high nutrient and suspended sediment loads are in need of rehabilitation. These reaches are located in Queensland, northern New South Wales, western Victoria and south-west Western Australia.<sup>13</sup>

The Assessment put forward a framework management response to the degradation of our rivers. It was noted that to deal with the scale and complexity of the problems facing the rivers, management responses should be guided by strategies that:

- Address issues at appropriate spatial scales;
- Are based on a sound understanding of river processes;
- Are not focused on single issues; and
- Use an integrated catchment management approach.

To advance effective management strategies, the Assessment stated that ecological outcomes need to be first defined and agreed. After these outcomes have been identified, priorities for action can then be formulated. Priorities for action included:

- Protecting reaches that support endangered species or communities;
- Protecting reaches in the best general condition;
- Stopping streams from deteriorating;
- Improving the condition of damaged reaches and focussing on those that are easy to fix;
- Rehabilitating reaches that are already extremely degraded (lowest priority).<sup>14</sup>

It is now apparent that most sectors of the community accept that the water quality of our rivers is generally poor. For instance, National Farmers' Federation Vice President Wayne Cornish recently stated: "Inefficient and inappropriate land and water use has created

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<sup>13</sup> Commonwealth of Australia, National Land and Water Resource Audit, *Australian Catchment, River and Estuary Assessment 2002*. Volume 1, 2002 at 93.

<sup>14</sup> Commonwealth of Australia, National Land and Water Resource Audit, *Australian Catchment, River and Estuary Assessment 2002*. Volume 1, 2002 at 97.

problems of national significance, such as rising salinity and falling water quality. We have to turn this around to ensure future generations can reap the social, economic and environmental benefits from our land that we and previous generations have enjoyed.”<sup>15</sup> The Minister for Land and Water Conservation has noted: “We use 60% more water than we did 13 years ago. We are ‘mining’ water faster than nature can replenish it. If we don’t work together with farmers and irrigators now to share water, in 10 – 20 years there will be no future for people on the land.”<sup>16</sup> However, what is not so universally agreed upon is the best method to rehabilitate and protect the State’s rivers, which is what the *Water Management Act 2000* aims to achieve.

#### **4.0 THE WATER MANAGEMENT ACT 2000**

##### **4.1 Principles of the Water Management Act 2000**

Historically, water resource planning in New South Wales has been reactive, with no provisions for the strategic planning of water resource use.<sup>17</sup> Now it is accepted that one of the basic principles of contemporary water management is that of water management planning. Chapter 2 of the *Water Management Act 2000* provides for this through a consultative process driven by Water Management Committees. These Committees are empowered to develop plans for: water sharing; water source protection; drainage management; and floodplain management. However, the Act also outlines water management principles and a State Water Management Outcomes Plan, to which individual water management plans must respect.

The water management principles as outlined in the Act include:<sup>18</sup>

(2) Generally:

- (a) water sources, floodplains and dependent ecosystems (including groundwater and wetlands) should be protected and restored and, where possible, land should not be degraded, and
- (b) habitats, animals and plants that benefit from water or are potentially affected by managed activities should be protected and (in the case of habitats) restored, and
- (c) the water quality of all water sources should be protected and, wherever possible, enhanced, and
- (d) the cumulative impacts of water management licences and approvals and other activities

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<sup>15</sup> National Farmers’ Federation Press Release, “Water reform down farmers’ rights” 31 October 2001.

<sup>16</sup> Media Release, Hon John Aquilina MP, Minister for Land and Water Conservation, “Healthy rivers mean healthy communities.” 2 July 2002.

<sup>17</sup> See: Farrier, D. “Integrated management of land and water? Planning and project approvals under the White Paper on NSW water management legislation”. In *1<sup>st</sup> Australian Natural Resources Law and Policy Conference Proceedings*, 27-28 March 2000, Canberra Australia at 152. Professor David Farrier is from the Centre for Natural Resources Law and Policy, University of Wollongong.

<sup>18</sup> See Section 5 (Water management principles)



- on water sources and their dependent ecosystems, should be considered and minimised,
- (e) geographical and other features of indigenous significance should be protected, and
  - (f) geographical and other features of major cultural, heritage or spiritual significance should be protected, and
  - (g) the social and economic benefits to the community should be maximised, and
  - (h) the principles of adaptive management should be applied, which should be responsive to monitoring and improvements in understanding of ecological water requirements.
- (3) In relation to water sharing:
- (a) sharing of water from a water source must protect the water source and its dependent ecosystems, and
  - (b) sharing of water from a water source must protect the basic landholder rights of owners of land, and
  - (c) sharing or extraction of water under any other right must not prejudice the principles set out in paragraphs (a) and (b).
- (4) In relation to water use:
- (a) water use should avoid or minimise land degradation, including soil erosion, compaction, geomorphic instability, contamination, acidity, waterlogging, decline of native vegetation or, where appropriate, salinity and, where possible, land should be rehabilitated, and
  - (b) water use should be consistent with the maintenance of productivity of land in the long term and should maximise the social and economic benefits to the community, and
  - (c) the impacts of water use on other water users should be considered and minimised.

The above principles in the Act reflect some fundamental principles of ecologically sustainable development, and have a clear emphasis on protecting rivers and waterways from further ecological deterioration.

In October 2001 the Department of Land and Water Conservation released the *Interim State Water Management Outcomes Plan*. The Act provides for this plan to set out the overarching policy content, targets and strategic outcomes for the development, conservation, management and control of the State's water resources. The Plan is the first of its kind and will have effect for five years from the date of its Gazettal. The Outcomes Plan is important because Water Management Committees need to frame their Water Management Plans to be consistent with the targets as outlined in the Outcomes Plan. The development of ecological outcomes was also recommended by the National Land and Water Audit Assessment of river quality, as noted in the previous section.

The Interim State Water Outcomes Plan identifies water management outcomes and five year management targets. The outcomes are framed on a long term basis and include:

- healthy, productive and diverse water dependent ecosystems. This includes: primary ecological production maintained or improved; degraded wetlands rehabilitated; and the diversity and abundance of native aquatic animals and plants improved.
- the community's basic needs and values sustained. This includes: basic human and

stock water needs protected; Aboriginal customary and contemporary dependencies on, and cultural association with water sustained; incidents of problem blue green algal blooms affecting essential water supplies and recreational values reduced.

- the economic value of consumptive water improved. This includes: the productive capacity of land and water maintained; water use efficiency increased; and the economic efficiency of investment in water industries improved.

The Outcomes Plan includes 31 five year targets under ten different heading areas. Examples of each of these areas include:

- **Limits on Diversions:** limits on the total volume of water that can be diverted established such that: surface water diversions in the Murray Darling Basin regulated rivers limited to the level of diversion below the Murray Darling Basin Ministerial Cap.
- **Environmental Water Provisions:** all water management plans will seek to identify appropriate opportunities for improving the diversity and abundance of native animals and plant species, with particular reference to threatened species.
- **Clear and Legal Entitlements:** property rights for licensees to water clearly and legally specified in terms of volume or shares and or works capacities. The total volume of water specified on licenses reduced or phasing down to no more than 200% of the long term average diversion limit in surface water systems, and to no more than 125% of the sustainable yield in groundwater systems.
- **Groundwater Dependencies:** degree of connectivity between aquifers and rivers assessed, and zones of high connectivity mapped to enable base flows to the river to be maintained or improved.
- **Basic and Cultural Needs:** measures in place in all priority systems to protect basic domestic and stock water rights in rivers and aquifers from the impact of other water extractions.
- **Water Use Efficiencies:** at least 90% of licensed installations for extraction of surface or ground waters (excepting stock and domestic bores) metered and reported in each priority system. Country town water consumption to decline by greater than 5% per head of population on average statewide.
- **Cost Recovery:** the NSW Government to seek full cost recovery in all practicable cases excepting where capital infrastructure costs cannot reasonably be funded by small numbers of water users. All water users to face water charges as determined by IPART.
- **Artificial Barriers and Openings:** the review of all existing weirs to be completed, including unlicensed structures, and action taken to ensure that there is no net increase in the number or total capacity of weirs in each catchment. Action taken to (re)connect at least 60% of the natural 1 in 5 year flooded area to the river for 11 key rural floodplains. Water temperature regimes below major dams improved to be within 2 degrees of natural between July and April.
- **River Channel Rehabilitation:** percentage of native riparian vegetation within waterfront land of 3<sup>rd</sup> order and larger streams monitored and action taken to increase it by at least 5% where it is currently less than 50% of natural on average in each catchment.
- **Drainage Management:** coastal floodplain areas with high water quality risk reduced; the peak volumes of urban stormwater runoff reaching natural watercourses reduced;

zones of high irrigation salinity hazard mapped and irrigation accession rates assessed to enable action to be taken to stabilise or reduce accession rates within these zones; manor drains to natural watercourses carrying saline discharges identified, and priority drains monitored to enable action to be taken to ensure no net increase in the load or concentration of the saline drainage.

- **River and Groundwater Salinity:** salt load and electrical conductivity tracking at levels consistent with the salinity targets specified in approved catchment management strategies. Significant sources of non-saline water contributing dilution flows downstream prioritised to enable action to be taken to protect these sources.

All water management plans developed under the *Water Management Act 2000* need to be framed to be consistent with the five year targets and longer term outcomes as described above. In assessing the adequacy of any water management plan prior to endorsement, the Minister will, in consultation with the Minister for the Environment, take into account the degree to which the plan has addressed the relevant outcomes and targets.<sup>19</sup>

#### 4.2 Water Management Committees and Management Plans

Under the *Water Management Act 2000* the Minister for Land and Water Conservation may establish water management committees to carry out specific tasks in relation to any aspect of water management in a water management area, and set terms of reference for that task. Such committees may be formally established (section 12 of the Act) with membership defined as listed below, or established in an advisory capacity to the Minister (section 388). To date only one section 12 Committee has been established – the Cox’s River Water Management Committee.

A section 12 management committee is to be comprised of at least 12, but not more than 20 members, appointed by the Minister. Of this number:<sup>20</sup>

- At least two people are to represent environmental protection groups;
- At least two people are to represent water user groups;
- At least two people are to represent local councils;
- At least one person to represent catchment management boards and trusts;
- At least two to be Aboriginal persons to represent the interests of Aboriginal persons;
- At least one member of staff of the Department of Land and Water Conservation;
- At least one person nominated by the Minister for the Environment;
- Such other persons to represent such interests as the Minister considers require representation;
- An independent chair (not being a member of staff of the Department of Land and Water Conservation).

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<sup>19</sup> NSW Department of Land and Water Conservation, *Interim State Water Management Outcomes Plan*, October 2001.

<sup>20</sup> *Water Management Act 2000*, s (13) Membership of Committee.

The principal function of a management committee is to carry out the task for which it was appointed. This may include:

- (a) to prepare a draft management plan for the water management area;
- (b) to review a management plan that is in force for the water management area;
- (c) to investigate such matters affecting the management of the water management area and as the Minister refers to it;
- (d) to report to the Minister on such matters affecting the management of the water management area as the Minister refers to it for report;
- (e) to advise the Minister on such matters affecting the management of the water management area as the Minister refers to it for advice.

Schedule 6 of the Act states that in any meeting of a management committee, all members are to strive for consensus in reaching decisions. A decision of the committee has effect if it is supported by a majority of votes cast at a meeting at which a quorum is present. However, this does not apply in relation to any decision to submit a draft management plan to the Minister for approval (to be released for public comment), which is required to be unanimous.<sup>21</sup>

The Act specifies the process for making management plans, including the following:

- the management committee prepares a draft management plan to be submitted to the Minister for approval for public scrutiny and submissions;
- the Minister, once satisfied that the plan complies with the Act and is suitable for public exhibition, must exhibit the draft plan;
- submissions are invited on the draft plan;
- as soon as practicable after completing its consideration of any submissions received, the management committee must resubmit the draft plan to the Minister together with the Committee's comments on the submissions;
- the Minister may make a management plan in accordance with the draft plan, as finally submitted to the Minister; or may make it with such alterations as the Minister sees fit; or may cause the draft plan to be re-exhibited (with such alterations as the Minister sees fit) and resubmitted in accordance with the Act; or may decide not to proceed with the draft management plan.
- Before making a management plan, the Minister must obtain the concurrence of the Minister for the Environment to the making of the plan.
- A management plan has effect for ten years from the date on which it was made, and must be audited at intervals of not more than five years.<sup>22</sup>

The Minister has also established advisory committees under section 388 of the Water Management Act 2000. These committees have been established to prepare draft water sharing plans. The following section 388 committees have been established by the

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<sup>21</sup> *Water Management Act 2000*, Schedule 6, s (12) Decisions.

<sup>22</sup> *Water Management Act 2000*, sections 36 to 44.

Minister:<sup>23</sup>

**Committees associated with regulated rivers** (Regulated rivers have major Government rural dams)

Gwydir River (Regulated) River Management Committee

Hunter River Management Committee

Lachlan River Management Committee

Macquarie Cudgegong River Management Committee

Murray Lower-Darling Community Reference Committee

Murrumbidgee River Management Committee

Namoi Regulated River Management Committee

**Committees associated with unregulated rivers**

(A number of unregulated rivers have dams and weirs for private use or urban water supply)

Central Coast Unregulated River Management Committee

Central West Unregulated Streams Management Committee

Gwydir Unregulated River Management Committee

Lachlan Unregulated River Management Committee

Murray Unregulated River Management Committee

Murrumbidgee Unregulated Streams Management Committee

Namoi Unregulated River Management Committee

**Committees associated with groundwater systems**

Great Artesian Basin Groundwater Management Committee

Gwydir Groundwater Management Committee

Kulnura/Mangrove Mountain Groundwater Management Committee

Lachlan Groundwater Management Committee

Macquarie Groundwater Management Committee

Murray Groundwater Management Committee

Murrumbidgee Groundwater Management Committee

Namoi Groundwater Management Committee

Tomago Tomaree Groundwater Management Committee

**Committees associated with surface water and groundwater**

Border Rivers Unregulated River and Groundwater Management Committee

Lower North Coast Water Management Committee

Mid North Coast Water Management Committee

Northern Rivers Water Management Committee

Shoalhaven/Illawarra Water Management Committee

South Coast Water Management Committee

Upper North Coast Water Management Committee

As noted, these Section 388 committees have been charged with the responsibility of developing draft water sharing plans. Water sharing plans are a specific type of management plan that can be prepared under the *Water Management Act*. They are designed to establish:

<sup>23</sup> See Department of Land and Water Conservation Website: URL <http://www.dlwc.nsw.gov.au/care/water/wmc.html>, accessed 14 August 2002.

- environmental water rules,
- requirements for basic landholder rights,
- requirements for water extraction under access licences, and
- bulk access regime for extraction licences. (The bulk access regime is the water sharing rules that will determine how much water will be available for extraction by licensed water users.)<sup>24</sup>

The core provisions of a water sharing plan must deal with the following matters:

- a. the establishment of environmental water rules for the area in relation to the following three classes of environmental water:
  - water that is committed for fundamental ecosystem health at all times, and may not be taken or used for other purposes (environmental health water),
  - water that is committed for specified environmental purposes at specified times or in specified circumstances, but may, at other times and in other circumstances, be taken and used for other purposes (supplementary environmental water),
  - water that, pursuant to an access licence, is committed for specified environmental purposes, either generally or at specified times or in specified circumstances (adaptive environmental water),
- b. the identification of requirements for water within the area to satisfy basic landholder rights;
- c. the identification of requirements for water for extraction under access licences;
- d. the establishment of a bulk access regime for the extraction of water under access licences, having regard to the environmental water rules referred to in paragraph (a) and the requirements referred to in paragraphs (b) and (c); and
- e. the establishment of transfer rules for the area. The transfer rules must comply with the Minister's transfer principles.

As evident above, a large number of water sharing plans are to be developed across the State. Most of the draft plans have been released for public comment, and were originally due to be implemented on 1 July 2002. However, the implementation of these plans has been delayed, and it was the passing of this date that was used as an opportunity by agricultural interests in particular to voice their concerns about some of the ramifications of the water sharing plans.

For instance, NSW Farmers distributed a press release stating: "More than four thousand jobs and \$320 million will be lost from the NSW economy as a result of water reforms to

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<sup>24</sup> See Department of Land and Water Conservation Website: URL <http://www.dlwc.nsw.gov.au/care/water/wmc.html>, accessed 14 August 2002.

be introduced by the State Government. In the first preliminary assessment of the State Government's water changes, the NSW Farmers' Association has found that irrigated agriculture generates \$2.7 billion annually to the State economy, but 4,300 jobs are likely to be lost from local business, farms and rural towns by the government restrictions."<sup>25</sup>

The Minister for Land and Water Conservation Hon John Aquilina MP strongly denied the NSW Farmers' Association claims. The Minister stated: "...a detailed analysis of the irrigation industry's claims about proposed water share sharing plans confirms their figures are alarmist and exaggerated.... Using current real water use the impact will be closer to \$17 million and 45 jobs."<sup>26</sup>

The public consultation process held after the release of the draft water sharing plans has attracted considerable interest and publicity in the community. For instance, *The Land* reports that about 700 people attended meetings at Hillston, Condobolin, Forbes and Cowra to hear members of the Lachlan River Management Committee outline their draft water sharing plan. *The Land* commented: "A dry season this year has brought home the realities of the flow formula in the current plan. Late last year about 124,000 megalitres of a 245,000 megalitre inflow into the dam were released straight away as environmental allocations, with the water left in the dam earmarked for stock, domestic and town use, leaving none for irrigation. Irrigators claimed this was a waste of water with no indication of any benefit to the environment. They want environmental flows to be released only when a clear picture is available on how much water is held in the dam at the start of the irrigation season."<sup>27</sup>

In another media release the Minister defended the water sharing plans, and outlined the ramifications if action is not taken to share water. He stated: "In the main the draft plans recommend small changes to the current rules that have been in place for the last four years....Healthy rivers mean healthy rural and regional communities. But many rivers are struggling to survive. Each year more than 710,000 tonnes of salt goes down the Murray, equivalent to 28,000 semi-trailer loads. Without urgent action, within 20 years water from rivers such as the Macquarie, Namoi and Bogan won't be fit for drinking. Hard decisions on water use now will pay off for our rural communities in the future...."<sup>28</sup>

After sustained publicity about the NSW Farmers' predictions of extensive rural job losses due to the water reforms, on 12 July 2002 the Minister agreed to the formation of a Socio-economic Review Committee to look at the concerns farmers and irrigators had expressed during the water reform process. The Hon Tony Kelly MLC is to chair the Committee,

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<sup>25</sup> NSW Farmers Association, *News Release, Thousands of jobs to be lost through Government water reforms*. 1 July 2002.

<sup>26</sup> Media Release, Hon John Aquilina MP, Minister for Land and Water Conservation, "Aquilina calls for balance on water." 5 July 2002.

<sup>27</sup> "No water, no future" in *The Land*, 4 July 2002.

<sup>28</sup> Media Release, Hon John Aquilina MP, Minister for Land and Water Conservation, "Healthy rivers mean healthy communities." 2 July 2002.

which also has Chris Guest, Deputy Director-General of the Department of Land and Water Conservation, Mal Peters, President of the NSW Farmers' Association, and Col Thompson, President of the NSW Irrigators' Council as members. The Committee is to review existing socio-economic studies and report its findings by November, 2002. Mr Aquilina said: "Based on the Committee's recommendations, the Government will provide resources for any additional analysis required." In addition, the Government has commissioned the economic consultancy group ACIL to undertake a statewide socio-economic impact analysis of the 37 Water Sharing Plans, and is to focus on the output and employment impacts.<sup>29</sup>

## 5.0 WATER RIGHTS

A key issue in the current controversy is about property and water rights. These issues arise from the 1994 Council of Australian Governments agreement on water reforms, which stated:

- 1/ that action needs to be taken to arrest widespread natural resource degradation in all jurisdictions occasioned, in part, by water use and that a package of measures is required to address the economic, environmental and social implications of future water reform.
  
- 4/ in relation to water allocations or entitlements,
  - (a) the State Government Members of the Council would implement comprehensive systems of water allocations or entitlements backed by separation of water property rights from land title and clear specification of entitlements in terms of ownership, volume, reliability, transferability and if appropriate, quality.
  - (b) where they have not already done so, States would give priority to formally determining allocations or entitlements to water, including allocations for the environment as a legitimate user of water.<sup>30</sup>

Given the importance of the 1994 water reform agreement, the Council of Australian Governments (COAG) decided in 1995 that implementation of the reforms would be included under the umbrella of National Competition Policy. This means that, amongst other things, the National Competition Council is required to assess and report to the Treasurer on the progress of all States and Territories in implementing the water reforms.

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<sup>29</sup> Media Release, Hon John Aquilina MP, Minister for Land and Water Conservation, "NSW Government joins farmers and irrigators in socio-economic review of water arrangements." 12 July 2002.

<sup>30</sup> Council of Australian Governments, *Communique*, Hobart 25 February, 1994.



A recent paper of the National Competition Council noted that if all the water reforms are fully and successfully implemented, then Australia's water industry will become efficient, flexible, sustainable and capable of delivering higher quality water with greater security of supply. Water will be properly priced and the rights to water will be extensively traded.<sup>31</sup>

The National Competition Council paper noted that the water reforms are an integrated package and their mutually reinforcing nature will help to produce better environmental and economic outcomes, and better outcomes for communities. For example, allocations of water for the environment help produce sustainable river systems which ensure consumptive rights in the long run, including through better water quality and improved security of supply. However, it was acknowledged that in the short term, environmental allocations, to the extent they require allocations for consumptive uses such as irrigation to be cut back, could reduce economic activity by leading to lower agricultural output. The more efficient use of irrigation water and crop substitution could help mitigate the impact on output.<sup>32</sup>

After the Council of Australian Governments' meeting of April 2002, the following Communique was released:

The Council noted water has been a key driver in regional and national development and, in recognition of the need to address adverse economic and environmental consequences of past water management policies and practices, in 1994 COAG adopted a strategic framework for reforms to national water governance. A key part of these reforms has been the development of a system of water property rights on a jurisdiction by jurisdiction basis.

The Council also noted that substantial progress is being made on the national water reforms. Water management is currently in a transition phase as jurisdictions implement new water allocation arrangements. There have been a number of calls for clarification to water property rights.

Council reaffirmed the importance of water property rights issues in dealing with the nation's salinity and water quality problems. Council further noted that during this transitional period, there may be a lack of information in the community about the nature of property rights, including responsibilities of water users. There also needs to be consideration of the implications of changes to water property rights for investment and the impacts of the changes on water users, particularly farmers.

In order to clarify these issues jurisdictions agreed to report to COAG by September 2002 on opportunities and impediments to better define and implement water property rights regimes (including water trading markets and where appropriate the responsibilities of water users); and how they are addressing uncertainties.<sup>33</sup>

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<sup>31</sup> Shadwick, M. *A Viable and Sustainable Water Industry*. National Competition Council Staff Discussion Paper, AusInfo, Canberra, 2002, at 6.

<sup>32</sup> Shadwick, M. *A Viable and Sustainable Water Industry*. National Competition Council Staff Discussion Paper, AusInfo, Canberra, 2002, at 9.

<sup>33</sup> Council of Australian Governments, *Communique*, Canberra, 5 April 2002. See <http://www.pmc.gov.au/docs/coag050402.cfm>

Various federal Ministers have also been calling for the State governments to compensate farmers affected by water and other rural reforms from the competition payments made by the Commonwealth to the States. The Hon Warren Truss MP, federal Minister for Agriculture, Fisheries and Forestry, said that it was clear that the States were failing to meet their responsibilities under the 1995 inter-governmental agreements which established Australia's NCP. He stated:

The Commonwealth recognises concerns that recent reform of water and vegetation management arrangements by the states may be reducing land values, deterring investment in better production systems, and affecting rural and regional communities.

The Commonwealth will therefore be asking the Productivity Commission to assess the effects of state government legislation on property values, investment patterns and environmental outcomes of current vegetation and biodiversity requirements.

The Federal Coalition Government does not believe farmers should have to bear the full cost of changes required in the public interest.

National Competition Policy (NCP) payments for the period 2001-02 to 2005-06 amount to \$3.8 billion. I have to say that the value that the Commonwealth receives for these payments is a matter of considerable concern.

It was the clear intention that these payments be at least partially used to compensate those in the community who are adversely affected. The Commonwealth must consider re-examining arrangements for the NCP to include recognition of the legitimate property rights of farmers and the importance of adjustment assistance for affected individuals and communities. The States are expected to meet their responsibilities if they are to receive ongoing funding.

Through the Council of Australian Governments, the Commonwealth will seek State and Territory cooperation to obtain a better understanding of the impacts of the natural resource management arrangements and in making any changes to improve conditions for investment by farmers.

There is widespread debate and discussion about the rights to access water, improving the basis on which water can be traded and the level of certainty for industry and investment in agricultural developments<sup>34</sup>

Premier Carr dismissed the Federal Government's threat to withhold National Competition Policy payments as nonsense.<sup>35</sup>

The Commonwealth Government makes National Competition Policy (NCP) payments to

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<sup>34</sup> Hon Warren Truss MP, Minister for Agriculture, Fisheries and Forestry (Cth), Media Release, "States must meet responsibilities to water users", 3 September 2002. See <http://www.affa.gov.au/ministers/truss/releases/02/02223wt.html>

<sup>35</sup> "Carr dismisses farmers' compensation funding threat." In ABC News Online, 15 September 2002.

the States and Territories (on a per capita basis), where they achieve satisfactory progress against the NCP and related reform obligations. The National Competition Council states that the payments are the means by which 'gains' from reform are distributed throughout the community. The payments recognise that, although the states and territories are responsible for significant elements of NCP, much of the direct financial return accrues to the Commonwealth Government via increases in taxation revenue that flows from greater economic activity. The National Competition Council advises the Federal Treasurer on whether the states and territories have achieved satisfactory progress and so meet the conditions for receipt of payments. This is reported through the NCP Assessments.<sup>36</sup>

Graeme Samuel, President of the National Competition Council, has acknowledged the challenge of implementing competition policy reforms which provide demonstrable benefits, while managing the temporary adjustment costs that these types of changes usually produce. He stated:

Structural adjustment assistance is certainly one consideration when facilitating change that may contribute to ensuring that those most affected by government reforms experience a fair and more effective transition.

The key considerations in determining whether adjustment assistance is warranted are the severity, speed and permanence of the effects of change, and whether significant hardship would be likely to result in the absence of assistance... Assistance need not be monetary but can take other forms such as financial and career advice, re-training, re-skilling and access to other relevant services.

Providing adequate support to assist with change should empower those most affected... It is important that any assistance provided should be directed to managing and facilitating change – assisting those least able to absorb the impact of change while focussing on best value outcomes in the long term. Adjustment assistance should be distinguished from the payment of compensation for changes in government regulatory policy, particularly where people have invested largely or solely on the basis of regulatory restrictions. People undertake such investments knowing that government policies can and do change.<sup>37</sup>

The National Farmers' Federation has been a vocal critic of the lack of water rights in place for agricultural producers. For instance, in October 2001 the Federation stated:

A special National Farmers' Federation Water Taskforce has slammed the CoAG water reform process' lack of success in addressing the fundamental issue of water property rights, labelling the current system as flawed and failed.

... The National Farmers' Federation is not opposed to the principles of the CoAG

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<sup>36</sup> National Competition Council, "National Competition Payments" see URL: <http://www.ncc.gov.au/articleZone.asp?articleZoneID=40>

<sup>37</sup> Samuel, G. "Competition Policy and Economic Reform: The Way Forward". A presentation by Graeme Samuel, President, National Competition Council, to Economic and Social Outlook Conference, Melbourne, 4-5 April 2002.

water reform process but is concerned that these principles have not been applied in a consistent and transparent manner and that the fundamental issue of water property rights has not been adequately addressed.<sup>38</sup>

The National Farmers' Federation identified six key characteristics of a water property right:

- Duration – a continuous period measured in years that the property right is held;
- Flexibility – modification or alteration to account for recognised constraints on the availability of water resources;
- Exclusivity – an entity holds the water property right exclusively so that it can be traded in a market place;
- Quality of title – secured to the extent that removal or impairment is compensated and the rights are adequately registered to facilitate financing and transfer;
- Transferability – easy transfer of water property rights on a permanent or temporary basis; and
- Divisibility – capable of being shared or subdivided.<sup>39</sup>

A spokesman for the Federation said that due to the lack of security over an asset – water access as defined by a property right – financial institutions have already begun to query the security of their funds and the long-term viability of rural enterprises that face undetermined and potentially unplanned water access restructuring in the future.<sup>40</sup> As an example of this in May 2002 the Australian Bankers Association stated that it is concerned that the NSW water reform process is yet to deliver adequate tenure of water property rights and has failed to adequately consider structural adjustment issues for water users. David Bell, Chief Executive of the ABA, said:

The water reform process breaks the historic relationship between water and land creating a new form of property right – water access licenses. The value of water used in many irrigation enterprises is now much higher than the value of land used in those enterprises. It is therefore important that irrigators are able to use this new property right in the same way that land is used to secure access to finance.

Banks need to be confident about the tenure and validity of the property right if they are to accept it as it as security for lending. If the tenure of the property right does not roll over from year to year then its value as security for a loan will erode over the period it is issued.<sup>41</sup>

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<sup>38</sup> National Farmers' Federation Press Release, "Water reform down farmers' rights" 31 October 2001.

<sup>39</sup> National Farmers' Federation Press Release, "Water reform down farmers' rights" 31 October 2001.

<sup>40</sup> National Farmers' Federation Press Release, "Water reform down farmers' rights" 31 October 2001.

<sup>41</sup> Australian Bankers' Association, *Media Release – Water reform has created uncertainty in rural lending*. 6 May 2002.

Mr Bell said the implementation of water reform in NSW has the potential to create significant adjustment pressures for irrigated agricultural industries and the communities that depend upon them. He continued:

Reduced water allocation may effect the ability of the farmer to service loan commitments. In the event that the amount of water available to a farmer is significantly decreased, then the choices are to either plant less crop, purchase more water licences or to invest in significantly improved irrigation technology.

The consequences that flow from this are as follows:

- if a farmer has borrowed on the basis on an expected area of crop then that farmer may have difficulty in servicing the current loan commitments;
- if a farmer has to either purchase more water or invest in new technology, the farmer may have to increase their level of debt, resulting in the farmer servicing a larger debt from the same area of crop and level of income;
- the ability of the farmer to adapt will depend on their current level of commitment to their bank – if the bank will not allow further increases, then the farmer simply may be unable to adapt to the changes brought the water reform.

The NSW Government must provide an adjustment package to offset the negative impact from changes to water allocation for water users and regional communities. However, there has been good progress made with the NSW Government on the development of a registry for water property rights.<sup>42</sup>

Recognising the increasing controversy over water rights, in June this year the Nature Conservation Council of NSW released a new policy statement on water property rights. The policy statement reiterated the Council's view that water and natural resources are public assets, and should not be vested in private hands. The policy statement read:

THAT the Nature Conservation Council of NSW believes the principles of Ecologically Sustainable Development (ESD) must form the basis for the management of the state's water resources and that any water access regime must recognise and apply ESD principles.

THAT the Nature Conservation Council of NSW does not support the creation of unlimited private water property rights, as such rights may create a right of compensation in the holders making it costly and difficult for the community to return water to streams and aquifers in order to meet environmental or other public purposes.

THAT the Nature Conservation Council of NSW supports the establishment of a limited and conditional form of water entitlement, which may be traded on the market within clear rules, with a set tenure, providing that such entitlement exist within a short limited term, (generally not longer than five years), and a secure statutory framework that ensures the continuation and enhancement of all stream and aquifer flows needed to meet environmental or other public purposes.

THAT the Nature Conservation Council of NSW supports and advocates a range of

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<sup>42</sup> Australian Bankers' Association, *Media Release – Water reform has created uncertainty in rural lending*. 6 May 2002.

mechanisms to ensure that environmental water requirements are met. These mechanisms include:

- The changing and/or restriction of water access (eg. off-allocation access);
- Providing incentives to improve water efficiencies (including demand management, property plans, wastewater re-use, structural changes to water delivery systems) with some or all of the water saved returned to the environment;
- Provision of structural adjustment to assist irrigators to become more efficient or to encourage inefficient users of water to move out of the industry;
- Introduction of industry levies, using the money gained to assist in increasing water efficiencies and structural adjustment;
- Introduction of iterative and enforceable environmental flow (water efficiency) targets;
- The compulsory reduction without right of compensation of 5% of entitlement at the end of the term of each license, with the withdrawn volume going towards environmental flows.

NCC does not recognise or support any claims for compensation for private interest users as a consequence of the reduction of their access to water, or the withdrawal of their access to water, or the non-renewal of their entitlements to water, when these actions arise from the proper operation of statutory or administrative rules for the protection of the environment.

THAT the Nature Conservation Council of NSW should:

- Call on the NSW and Federal Governments to ensure that water remains a public resource;
- Oppose the use of this public resource for short term financial gain at the expense of the health of the environment and the welfare and economic prosperity of future generations;
- Oppose the payment of compensation to water entitlement holders in circumstances where over-extraction for private financial gain has caused or is likely to cause harm to the state's environment, its water resources, or the public interest; and
- Ensure that the NSW Government administers the NSW Water Management Act 2000 so as to secure the health of the state's freshwater ecosystems as well as the health of the agricultural sector for generations to come."<sup>43</sup>

The NSW *Water Management Act* provides for security of water supply through water access licences. Water sharing plans detail the major rules and parameters that will govern the granting and management of access licences in the Plan area, and the allocation of water to these licences. As noted above, it is the release of draft water sharing plans that have recently caused concern in parts of the rural community.

The *Water Management Act* provides for a variety of categories of water access. An owner or occupier of land fronting a river or above an aquifer is permitted to take water for

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<sup>43</sup> Nature Conservation Council of NSW, *Water Property Entitlements, NCC Policy Statement June 2002*. See <http://www.nccnsw.org.au/water/projects/PropertyRights/acright.html>

domestic use and to water stock without a licence. This is known as a basic landholder's right. The landowner is also permitted a harvestable right, which permits them to capture up to ten percent of the average regional runoff into dams on their properties without a licence. All other water use requires an access licence, which have the following categories:

- Local water utility access licence;
- Major utility access licence;
- Domestic and stock access licence;
- Regulated river (high security) access licence;
- Regulated river (general security) access licence;
- Regulated river (supplementary water) access licence;
- Unregulated river access licence;
- Aquifer access licence;
- Estuarine water access licence;
- Coastal water access licence.

In terms of water use, local water utility, major utility and domestic and stock access licences have priority over all other access licences. However, all the State's regulated river systems are managed so that high security licences will receive their full allocation of water in all but severe droughts. In contrast, the reliability of full allocation to general security licences is less assured, and much more variable between river systems. In most river systems general security licence holders experience low allocations during drought periods, and in severe droughts allocations can be expected to drop to zero.<sup>44</sup>

The water sharing rules between the various classes of licenses, as well as the environment, is known as the bulk access regime. The bulk access regime is determined for each water source. Section 87 of the Act provides for compensation for holders of an access licence whose water allocations are reduced as a consequence of a variation of a bulk access regime during the term of the water sharing plan.

In essence, the *Water Management Act* provides for water rights through the water access licence process. As noted, each water sharing plan, and hence guaranteed right to water, lasts for ten years. In regards to water property rights, the Minister for Land and Water Conservation Hon John Aquilina MP stated: "The *Water Management Act 2000* provides for local water sharing plans. These give effect to water property rights and ensure certainty of access.... This scarce and variable resource [water] cannot be subject to the same property rights as land. However, the Act does contain compensation provisions. Compensation may be claimable, if water entitlements are reduced during the life of the water sharing plan..."<sup>45</sup>

However, it is claimed that the formulation of current draft water sharing plans reduces water availability to farmers, and that the State Government has provided no compensation

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<sup>44</sup> Department of Land and Water Conservation, *Advice to Water Management Committees, No 4 Regulated Rivers (High Security) Access Licences*. ND.

<sup>45</sup> "Security and consistency in water reform paramount, says Aquilina." Media Release, Hon John Aquilina MP, Minister for Land and Water Conservation, 7 March 2002.

or structural adjustment packages for affected primary producers. The State Government has recognised that groundwater licence holders in the Namoi valley will be affected by reductions in groundwater supply, which is being scaled back to ensure sustainable extraction. Twenty million dollars is being offered by the State Government for structural adjustment funding for changes in the groundwater users' access. The Minister stated: "The \$20 million package will involve an allocation of \$18 million to help irrigators who will experience real water losses over the next 10 years compared with the history of their water use...I have also been in discussions with the Deputy Prime Minister John Anderson, requesting the Commonwealth to match the \$20 million NSW Structural Adjustment Package."<sup>46</sup>

The NSW Farmers' Association President Mal Peters stated: "The Government refuses to help country towns adjust with a structural adjustment package offered to only one community in the State - the Namoi Valley - which has been rejected by local representatives as inadequate."<sup>47</sup>

In mid September the Premier Bob Carr outlined a plan to regenerate the State's land and waterways over the next 50 years. He was reported as saying: "For farmers this means water property rights, incentive payments for healthier rivers, less regulation, freedom to meet targets in ways they think best...it means country people, not regulation, will be the agent of change. It means giving catchment management boards the legislative and financial clout to fix the problem locally."<sup>48</sup>

## 6.0 CONCLUSION

The poor environmental condition of much of the State's river system is testimony to an institutional management regime that has focussed on water as a never ending commodity, rather than as a resource that itself needs to be cared for and protected. Acknowledgment that riverine ecosystems are in a poor state of health by governments and communities has led to reforms to the water industry. However, it is the implementation of these reforms, and the sharing of the cost of reforms, which is being challenged by those most affected. The calls for structural adjustment packages to compensate those affected by the reforms are likely to increase.

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<sup>46</sup> "Assistance package for Namoi groundwater users." Media Release, Hon John Aquilina MP, Minister for Land and Water Conservation, 14 June 2002.

<sup>47</sup> "Billion dollar water bill" in *The Land*, 4 July 2002.

<sup>48</sup> "Water reform menace for states" in *The Australian*, 16 September 2002.