

# Incentive measures for conserving freshwater ecosystems

## Review and recommendations for Australian policy makers

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The views expressed in this report, while based on the extensive combined knowledge and experience of the authors, do not necessarily represent those of the organisations for which they work. Equally, the recommendations contained herein are also a synthesis of views held by the authors, and again it should not be assumed that they reflect in all instances the policies of the host organizations or the individuals involved. Readers are reminded that this is a review document and before specific application or use of individual incentive measures specialist advice should be sought.

**Cover photographs and graphics:**

Top left – cover of the guidelines on Landcare taxation arrangements produced by the former Commonwealth Department of Primary Industries and Energy (now Agriculture, Fisheries and Forestry Australia), in consultation with the Australian Taxation Office and State and Territory Departments. No date given.

Top center – volunteers removing aquatic weeds from a wetland. Photo by Conservation Volunteers Australia.

Top right – River Murray and floodplain wetlands near Banrock Station Wetland and Wine Centre. Photo by Bill Phillips.

Lower left – flow and carp control structure on a wetland in the Riverland of South Australia. Photo by Bill Phillips

Lower right – volunteers installing fence and gate at Fivebough Swamp near Leeton. Photo by Mike Schultz.

## Executive summary:

Wetlands are among the most diverse and productive ecosystems on earth. They produce a range of food and fibre products, help with water management and provide numerous recreational and life sustaining services. As the functions, services and benefits provided by freshwater ecosystems have become better understood, the need for their long-term care is increasingly recognised. Freshwater ecosystems are now known to be essential for the long-term sustainability of Australia's increasingly stressed rivers and streams, for community well-being and for the conservation of biological diversity.

Since European settlement it is estimated that about half of Australia's wetlands have been destroyed, mostly through conversion for urban expansions and rural development. Even today, when the ecosystem services provided by wetlands are well understood, degradation and conversion of wetlands continues.

However, there are clear signals that attitudes towards wetlands are slowly changing, and across the country there are steps being taken to see wetlands protected, rehabilitated and even reinstated. These efforts are being made by landowners, a range of community-based groups, non-governmental organisations, local councils, the State and Territory Governments and the Commonwealth Government.

Acknowledging that most wetlands are found on privately held land, the major challenge for Governments (at all levels) is to put in place a range of incentive measures that can assist and encourage private landholders to manage their wetland so as to retain the ecosystem services they provide. Flexibility and diversity of options are the keys here, recognizing that circumstances differ so greatly across the country, and even from one private landholder to the next.

The companion to this report, the Information Kit, *Wetland management assistance for private landholders*, provides, in easy-to-use fact sheet format, and with illustrative case studies, a comprehensive account of the incentive measures that are currently available. It is targeted towards those private landholders responsible on a day-to-day basis for Australia's freshwater ecosystems.

In this report 27 incentive measures for promoting the conservation of freshwater ecosystems by private landholders are reviewed. Many of these measures are currently available in Australia while others, that are in use in other countries, are only now beginning to be considered here. Each incentive measure is considered against the following criteria; ecological efficiency, economic efficiency, social impact, flexibility, accountability and potential for community involvement, and for each incentive option recommendations have been formulated that are designed to offer guidance to policy makers at all levels of Government (as appropriate) for seeing these measures made more affective.

Short case studies relating to some of the incentive measure are also provided. This is not intended to be an exhaustive list of illustrative examples, but rather the case studies seek to provide a guide to the form that the incentive may take when implemented.

The overall conclusion of this report is that while Australia has a considerable range of such incentive measures operating today, many are being applied in a piece-meal or *ad hoc* fashion. Further, many of the incentives are being used in other areas of natural resource management, such as vegetation management, however these have not been targeted specifically at wetland conservation. There is clearly potential, and a mandate, for the Commonwealth Government to take more of a leadership role in seeing national application of incentive measures for conserving freshwater ecosystems by State/Territory and local governments.

The decisions about which incentive measure to apply, or indeed whether to use a 'cocktail' of options, is one that each jurisdiction must take. What is apparent is that these incentives need to be operating at all levels of government, and that a broader range of options is needed if wetland conservation and management goals are to be achieved.

The report also focuses on so-called perverse incentives, both financial and administrative, which are working in opposition to the aspiration of seeing wetlands managed for sustainability and conservation. Introducing new incentives should not be seen as a way to mitigate against the continuation of perverse incentives, and identifying and acting on these should be a high priority for all levels of Government.

The simple approach to using the recommendations provided in this report would be to dissect it along local, State/Territory and Commonwealth Government lines, and to leave each jurisdiction to 'do their own thing'. This is not recommended as one of the weaknesses of such an approach will be at the local government level where those councils with a limited rates base will be immediately constrained to act. For these councils to act, support will be needed from both the State/Territory and Commonwealth Governments.

It is also obvious that while some States and Territories have useful schemes such as 'Land for Wildlife' and revolving funds which are assisting wetland conservation to some degree, others don't. Commonwealth assistance and encouragement to see these established and well resourced in all jurisdictions is a key, and appropriate, national response.

Many of the new incentive options identified in this report as worthy of further review and possible trial (such as bonus development rights, mitigation banking, biodiversity credit schemes, performance bonds, wildlife ranching etc). While these may be identified as an issue for the States and Territories to pursue, there is also a strong case for the Commonwealth to work with and support the further investigation of these options in a national leadership role.

A further key consideration is that of identifying those wetlands of 'importance' toward which conservation efforts, and incentive measures, can be directed in the first instance. The Commonwealth and States/Territories have jointly produced *A Directory of Important Wetlands in Australia* with 851 sites recognized as nationally important in the third edition of this published in February 2001. While this is a helpful start, and an ongoing effort, it is a concern that for many parts of Australia the knowledge of the wetland resources remain very poor. This serious gap in Australia's planning framework needs to be addressed urgently.

Allied to this same issue is that of ensuring that Australia's most important wetlands, and those of international significance, gain the earliest recognition and are 'protected' through appropriate management regimes, whether provided by the public or private sectors. At present there does not exist a scientifically rigorous method for developing a comprehensive, adequate and representative system of aquatic reserves for Australia. This also requires urgent attention from the Commonwealth and all State/Territory Governments.

There is also scope for some fine tuning of the taxation system to make it more economically attractive for private landholders to either manage their wetlands for stronger conservation results, or pass their wetlands on to organisations or individuals who wish to. There are some anomalies operating at present that are acting to limit the opportunities and capacities of these same organisations to take on management roles for these wetlands. Some well focused action, especially at the Commonwealth level, could see these organisations become key parts of the overall strategy for wetland conservation.

The report acknowledges that through various grants programmes, governments are providing significant opportunities and incentives for private landholders to access assistance for wetland management. Ensuring that wetlands are prominent in the development of national targets and the associated regional and catchment-based action plans under the National Action Plan for

Salinity and Water Quality will be a significant step in the right direction. However, there does remain a need for other grants programmes under the Natural Heritage Trust and similar State/Territory and local initiatives, to be directing greater resources to on-ground wetland management action. The use of devolved grants schemes, making use of the expertise, enthusiasm and direct dealings with wetlands owners which non-government organisations can provide has some clear advantages.

The report includes ‘management advice and assistance’ as an incentive measure, which may not accord with many peoples’ thinking in this area. However, there can be no doubt that through greater investment in education, and the sharing of wetland management experiences, the need for those measures which compel landholders to act in a certain way will be reduced. Positive flow-ons could also be expected in terms of landholder interest in most of the incentives which are described herein under the categories of seeking to facilitate or induce changes in wetland management practices toward conservation management. There exists a considerable resource base to support such an effort to raise community understanding and appreciation of wetlands; all that is needed now is to mobilise and organise the use of these resources.

The CoAG Water Reform framework is also considered in the context of what it has, or could offer, by way of incentive measures. The conclusions are that there are a number of areas where the CoAG water reforms have either under-achieved in terms of their original principles and goals, or in which further extension or ‘fine tuning’ could be used to improve wetland conservation outcomes. The areas suggested for exploration include water property rights and trading, provision of water for the environment, water pricing, regulation of new water developments and the protection of high value rivers.

The final section of the report identifies a range of research topics that the authors consider to be high priority for taking forward wetland incentives in an even more informed way. While there is significant local and international experience in this field that can be drawn on, as this report demonstrates, there do remain gaps in this knowledge which well-focused future research would address.

## Table of Contents

|   | <b>Page</b> |
|---|-------------|
| <b>Executive summary</b>  | ii          |
| <b>1. Introduction</b>  | 1           |
| <b>2. Key considerations</b>  | 4           |
| 2.1 Some of the services provided by freshwater wetlands  | 4           |
| 2.2 Attributing dollar values to the services provided by freshwater wetlands   | 5           |
| 2.2.1 Recreational values   | 6           |
| 2.2.2 Non-use values  | 6           |
| 2.2.3 Other wetland valuation studies   | 7           |
| 2.3 Tradeoffs involved in exploiting or protecting wetland resources  | 8           |
| 2.4 Public versus private good in the management of wetlands  | 10          |
| 2.5 Policy frameworks to support incentive measures   | 11          |
| 2.6 Types of incentive-related policy generated in Australia  | 12          |
| <b>3. Current, emerging and potential incentives for conserving freshwater wetlands</b>                                 | 14          |
| 3.1 Introduction  | 15          |
| 3.2 Assessment criteria   | 16          |
| 3.3 Wetland conservation incentive measures – plus case studies   | 17          |
| <b>4. Conclusions and recommendations</b>   | 101         |
| 4.1 Introduction  | 101         |
| 4.2 Incentives which seek to facilitate changes in wetland management   | 102         |
| 4.3 Incentives which seek to induce changes in wetland management   | 105         |
| 4.4 Incentives which seek to either induce or compel changes in wetland management practices                            | 110         |
| 4.5 Incentives designed to compel changes in wetland management practices   | 112         |
| 4.6 Summary conclusions   | 113         |
| <b>5. Opportunities to progress incentives for freshwater wetland management within the COAG Water Reform framework</b> | 115         |
| 5.1 Introduction  | 115         |
| 5.2 Water property rights and trading   | 116         |
| 5.2.1 Understanding the environmental impact of water trading better  | 117         |
| 5.2.2 Regulating total water extraction from rivers   | 118         |
| 5.2.3 Adopting and adaptive framework with regular review of entitlements to water                                      | 119         |
| 5.2.4 Learning from experiences with terrestrial ecosystems   | 120         |
| 5.3 Provision of water for the environment  | 120         |
| 5.3.1 Considering floodplain wetlands in determining environmental flow allocations                                     | 121         |
| 5.3.2 Putting in place the necessary management frameworks  | 122         |
| 5.4 Water pricing   | 124         |
| 5.5 New water use developments and modifications to existing developments   | 126         |
| 5.5.1 Use of mitigation mechanisms  | 126         |
| 5.5.2 Taking into consideration international expert views and best practice  | 127         |
| 5.6 Protection of high value rivers   | 127         |
| 5.7 Conclusions   | 127         |
| <b>6. Future research priorities</b>  | 128         |
| <b>7. Bibliography</b>  | 129         |
| <b>Appendices:</b>  |             |
| 1. Ramsar Convention’s Resolution VII.15 relating to incentive measures   | 134         |
| 2. Wetland definitions used by the Commonwealth and State/Territory Governments   | 136         |
| 3. The Ramsar Convention, migratory bird site network and nationally important wetlands                                 | 138         |

# 1. Introduction

Wetlands are among the most diverse and productive ecosystems on earth. They produce a multitude of food and fibre products, help with water management and provide numerous recreational and life sustaining services. As the functions, services and benefits provided by freshwater ecosystems have become better understood (see Section 2), the long-term care of these environments is now recognised as more and more important for the long-term sustainability of Australia's increasingly stressed rivers and streams, for community well-being and for the conservation of biological diversity.

Since European settlement it is estimated that about half of Australia's wetlands have been destroyed, mostly through conversion for urban expansions and rural development. Even today, when the many ecosystem services provided by wetlands are well understood, degradation and conversion of wetlands continues.

However, there are clear signals that attitudes towards wetlands are slowly changing, and across the country there are steps being taken to see wetlands protected, rehabilitated and even reinstated. These efforts are being made by landowners, a range of community-based groups, non-governmental organisations, some local councils, the State and Territory Governments and the Commonwealth Government.

## Defining the scope of 'freshwater ecosystems'

In this report 'freshwater ecosystems' are considered to equate to 'freshwater wetlands'. There are a number of definitions of 'wetland' in current use in Australia, as given in Appendix 2. Most definitions used by Australian jurisdictions are closely related to the definition used by the Ramsar Convention on Wetlands but have been varied to emphasise or remove particular wetland types to suit the respective jurisdictions.

The definition of 'wetland' as used by the Ramsar Convention on Wetlands is as follows:

Wetlands are "areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters". And "may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands".

While 'freshwater ecosystems' are the focus of this report, it should be noted that most of the incentive measures referred to in the following can be applied equally well to coastal wetland ecosystems.

The past 10 years has also seen a gradual realisation come over many natural resource managers across Australia that wetlands have intrinsic natural values which make them cornerstones of ecological sustainable development, not liabilities as was once the common wisdom. Seeing that realisation passed on to the private sector still has a way to go and it is here that the role of incentive measures, in all their various forms, are so vital.

Landholders themselves enjoy many of the values and benefits that conservation management of their wetlands would produce. However, the costs of maintaining the wetland 'healthy' in addition to the profits that are given up by not developing them are powerful drivers of wetland loss. This is at the core of providing incentives to shift the balance sheet in favour of keeping and caring for wetlands.

Acknowledging that most wetlands are found on privately held land, the major challenge for Governments (at all levels) is to put in place a range of incentive measures that can assist and encourage private landholders to manage their wetland so as to retain the ecosystem services they provide. Flexibility and diversity of options are the keys here, recognizing that circumstances differ so greatly across the country, and even from one private landholder to the next.

The goal of this report is to give a snap shot of the current state of affairs in the area of incentives measures for conserving freshwater wetland ecosystems, and using this, to propose mechanisms and approaches to seeing the policy, institutional and administrative frameworks strengthened and expanded. Some reference to international experience is also used in exploring a range of potential incentives measures that could be added to the policy mix operating in Australia today.

### **Mandates for commissioning this report**

The commissioning of this report gains its mandate from a range of sources (see below) and is very timely as the Commonwealth Government, various State and Territory Governments, and many local governments turn their focus increasingly toward the management of Australia's freshwater and its associated ecosystems and resources.

A key outcome of such deliberations, and the associated policy responses, needs to be clear and effective means for governments (at all levels) to encourage the better management, ecologically sustainable use, and where appropriate the rehabilitation or restoration of freshwater ecosystems.

Among the policy documents which mandate this in-depth consideration of incentive measures is the *Wetlands Policy of the Commonwealth Government of Australia*, as adopted in 1997. It contains a number of strategies which relate to incentives and the related area of economic valuation techniques. Notably, the Commonwealth Wetlands Policy includes the following Strategies that are of direct relevance to this project:

Strategy 3.3 includes the following two undertakings:

- *“Document and promote a range of economic, voluntary, educational and other measures to encourage wetland conservation activities by the private sector.*
- *Undertake a broader review of economic policy instruments for biodiversity conservation outside protected areas to ensure that, where feasible and where consistent with national taxation and fiscal policy, there are incentives and, conversely, no disincentives for wetland conservation activities by private landholders.”*

Strategy 4.1 is also relevant through the following:

- *“Continue the Commonwealth's support for the implementation of the water policy reform processes of the Council of Australian Governments which are being implemented by the States and Territories, and which recognise the environment as a legitimate user of water and require jurisdictions to give priority to formally determining allocations or entitlements to water, including allocations for the environment.”*

It is also important to note that the Commonwealth Government is understood to be committed to continuing its support for programs such as Landcare and the Natural Heritage Trust and these offer continuing opportunities for seeing resources directed to the management of freshwater ecosystems. The National Action Plan for Salinity and Water Quality is also presently being established and will be implemented through regional/catchment-based consortia and appropriately prepared action plans. This presents another ideal opportunity for seeing freshwater ecosystems factored into broader natural resource planning and management, and supported by suitably tailored incentive measures.

The above commitments by the Commonwealth Government in this area have been partially advanced through the project “*Private and Social Values of Wetlands*” as completed recently by two of the authors of this report, namely; Professor Bennett and Mr Whitten.<sup>1</sup> That project forms the fundamental research providing the foundation for this report as it investigated a range of instruments and incentive measures to achieve wetland conservation on private lands within two case study areas. This report consolidates, and extends the findings of the “*Private and Social Values of Wetlands*” project by:

- ❑ Reviewing the full range of actual and potential incentives for conserving freshwater wetlands at the Commonwealth, State/Territory and, to a lesser extent, local level;
- ❑ Presenting a menu of current incentives and policy options within a framework that is immediately accessible to policy makers and wetland owners and managers; and,
- ❑ Identifying opportunities and making recommendations for how to further extend the range of incentives available.

At the international level the Ramsar Convention on Wetlands has given considerable attention to issues of economic valuation of wetlands and incentive measures in recent years. In 1997 it published the handbook ‘*Economic valuation of wetlands – A guide for policy makers and planners*’, which, due to demand, has been reprinted on two occasions and produced in several languages. This document is referred to in this policy document as Barbier, Acreman and Knowler (1997).

At its 7<sup>th</sup> Conference of the Contracting Parties (COP7) in Costa Rica in 1999 the Ramsar Convention adopted Resolution VII.15 entitled “*Incentive measures to encourage the application of the wise use principle*”. The full text of this resolution is given in Appendix 1. To summarise this decision it urged signatories to the Convention (131 as at the time of preparing this report) to:

- ❑ Review existing, or evolving, measures (policy, legal, institutional frameworks) to promote conservation and wise use of wetlands, or remove those measures which discourage such aims;
- ❑ To consider incentive measures when developing policies, laws and/or institutions for conservation and wise use of wetlands;
- ❑ To share experiences and lessons learnt regarding incentive measures and perverse incentives.

At the forthcoming 8<sup>th</sup> Ramsar Convention Conference of the Contracting Parties (November, 2002) all signatories are expected to report on their progress with applying the above Resolution, through the mechanism of their National Reports submitted in advance of the meeting.

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<sup>1</sup> See the website: [apsem.anu.edu.au/staff/ibennettr.html](http://apsem.anu.edu.au/staff/ibennettr.html) for details of that research project.

## 2. Key considerations

### Contents:

- 2.1 Some of the services provided by freshwater wetlands
- 2.2 **Attributing dollar values to the services provided by freshwater wetlands in Australia and elsewhere**
  - 2.2.1 Recreational values
  - 2.2.2 Non-use values
  - 2.2.3 Other wetland valuation studies
- 2.3 Tradeoffs involved in exploiting or protecting wetland resources
- 2.4 Public versus private good in the management of wetlands
- 2.5 Policy frameworks to support incentives measures
- 2.6 Types of incentive-related policy generated in Australia

### 2.1 Some of the services provided by freshwater wetlands

Wetlands, by their very nature, are places that offer a range of ecosystem services to human populations. In the past these have not been fully understood or appreciated, not to mention valued. With a greater appreciation of these ecosystem services has come the move to reflect the full range of economic, social, cultural and environmental benefits derived from wetlands into land-use planning and water management decision making.

Some of the services and benefits provided by wetlands are as listed below. It should be noted that freshwater wetlands are found in many forms and types and so not all of the functions and services referred to below can be ascribed to all wetlands. Some wetland services are available only when the resources that constitute the wetland are extracted or separated from each other. For instance, wetlands may be used for cropping if they are drained. Other wetland services are available when their resources remain integrated in a natural system.

#### **Wetlands and water management**

Wetlands perform a range of important water management services such as those referred to below. It is because of these functions that wetlands have been called the 'kidneys' of the waterways.

- ❑ Floodplain wetlands operate like sponges in the waterways, absorbing and storing floodwaters.
- ❑ Wetlands are normally the last places to dry out during periods of drought or low rainfall and, for graziers and farmers in especially in the drier parts of Australia, this makes them a prized possession. Many wildlife species also rely on such 'oases'.
- ❑ Wetlands are also places where sediments, nutrients and some industrial and urban pollutants are trapped or deposited.

- ❑ Some wetlands are connected to the groundwater system; either being fed by groundwaters, or recharging them.

### **Wetlands and primary producers**

Wetlands are increasingly recognised as assets, not liabilities, by the farming community. Some of the sustainable uses being undertaken at wetlands by primary producers include:

- ❑ The capacity of wetlands to capture, store and cleanse water (see above) makes them important assets for the whole community, but especially for primary producers. To have water supplies for livestock during times of drought is a significant benefit and in some circumstances cattle grazing and wetland management can be complementary activities.
- ❑ In some parts of Australia farmers exploit the drying lakebeds for planting crops, and if done with care, this can be compatible with retaining the natural values of the wetland.
- ❑ Sustainable forestry is also being practiced in several major wetland systems in Australia.

### **Wetlands, recreation and eco-tourism**

Australians enjoy water sports, and wetlands are a focal point of much of this recreation and relaxation. The sorts of activities that take place at wetlands include the following:

- ❑ Boating, swimming, fishing, camping, birdwatching and generally enjoying nature are among our most popular pastimes and eco-tourism also provides a boost to local and national economies.
- ❑ Wetlands are vital fish nurseries and breeding grounds, and retaining healthy wetlands means improved opportunities to catch fish.
- ❑ Wetlands tend to be beautiful and tranquil places, and for many private wetland-holders this in itself is an incentive for keeping their wetland 'healthy'.

### **Wetlands and wildlife**

Wetlands are places that are vibrant and busy with life forms; from the microscopic through to specially adapted species.

- ❑ The conservation of wetlands is a key part of helping ensure the future of many plant and animal species.

## **2.2 Attributing dollar values to the services provided by freshwater wetlands in Australia and elsewhere**

The natural and 'extractive' functions and services presented above have value, regardless of whether or not they have market prices ascribed to them. Some of these functions and services do have market values, particularly in the case of extractive uses such as cropping and grazing, whereas many do not.

Economists have developed a range of techniques to allow estimates of these non-market values to be made. It is this interplay between those functions of a wetland that have a clear market value and those that do not that is so fundamental to how and why private landholders make management decisions for their wetlands. To help clarify this further, this section provides a brief overview of approaches that have been taken, both here and overseas, to estimating a value for particular wetland functions or services.

Few Australian studies have undertaken quantitative estimations of the value of wetland functions and services (especially in dollar terms). Of the studies undertaken, some have focused on the recreational values of wetlands, whereas others have estimated values that are enjoyed by people who don't come into direct contact with wetlands. These are the so-called 'non-use' values of wetlands. Studies in other countries have examined the values of wetland protection. These three key areas are briefly reviewed in the following section to outline the scale and scope of the values attributed to wetlands.

### **2.2.1 Recreational values**

Two studies in Australia have focused entirely on the recreational value of wetlands: Sappidean (1992) who focused on the recreational values of the Sale Wetlands in eastern Victoria; and, Whitten and Bennett (2002) who focused on the recreational values of duck hunting in wetlands in the Upper South East of South Australia. In addition, Stone (1992) estimated total willingness to pay and attempted to separate recreational values from other values. Several other studies have explicitly included recreational values but not separated them from other values (for example, Gerrans 1994 and Whitten and Bennett 2001c).<sup>2</sup>

Sappidean (1992) estimated the recreational values associated with game hunting, bird watching, bush walking and camping in the Ramsar-listed Sale Wetlands in eastern Victoria using the Contingent Valuation Method. Willingness to pay as an entry fee to the wetlands, in order to protect the water quality from increasing salinity, was estimated at \$3.37 per visitor.

Whitten and Bennett (2002) estimated the value to hunters from hunting ducks in wetlands in the Upper South East of South Australia using the Travel Cost Method. Hunters received benefits of between \$44.86 and \$54.42 from participating in a duck hunting trip to the region.

Stone (1992) used the Contingent Valuation Method to estimate the values associated with the Ramsar-listed Barmah Forest on the River Murray in Victoria. Respondents indicated a once-off willingness to pay \$2.98 for their recreational use of the wetlands.

Other studies overseas (mainly in the United States) have also estimated significant recreational values associated with fishing, hunting, and general recreation values for coastal, riverine, riparian and other wetland systems.<sup>3</sup>

### **2.2.2 Non-use values**

Several studies have concentrated on the 'non-use' values of wetlands, or have estimated total values for wetland protection. Australian studies by Stone (1992), Gerrans (1994), Bennett, Blamey and Morrison (1997), Morrison, Bennett and Blamey (1999), Bennett and Whitten (2000) and Whitten and Bennett (2001c) are briefly summarised in this section.

Stone (1992) estimated a total once-off willingness to pay of \$36.20 for the non-use values of the Barmah Forest Ramsar site.

Gerrans (1994) used the Contingent Valuation Method (CVM) to estimate the willingness to pay to preserve the Jandakot Wetlands south of Perth and to protect all metropolitan wetlands in Perth. Respondents indicated a willingness to pay \$38.84-\$40.81 annually for Jandakot wetlands and \$37.71-\$43.79 for all Metropolitan wetlands.

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<sup>2</sup> All values are Australian dollars indexed to 2001 using the all groups consumer price index (CPI).

<sup>3</sup> Reference to a number of these studies can be found in Envalue, a database maintained by the NSW Environment Protection Agency on its website: [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au). The values reported by these studies are not reported here because of their limited transferability to the Australian context.

Bennett *et al.* (1997) used CVM to estimate the willingness to pay to avoid damage to Tilley Swamp and The Coorong in the Upper South East of South Australia. Respondents indicated a one-off willingness to pay of approximately \$45 per household.

Bennett and Whitten (2000) also used the CVM technique to estimate the willingness to pay to protect Lake Gol Gol and Gol Gol Swamp in NSW (near Mildura in north-western Victoria) from damage from rising salinity. Respondents indicated a one-off willingness to pay of \$9.33 per household.

Morrison *et al.* (1999) used the Choice Modelling Technique (CM) to estimate the willingness to pay of households to generate social and environmental improvements via rehabilitation of the Macquarie Marshes in central Western NSW. The one-off willingness to pay was dependent on the outcomes of the rehabilitation strategy pursued. Respondent households were willing to pay on average \$24.49 per additional bird breeding event, \$0.04 per additional square km of wetland, \$4.53 per additional endangered species present and \$0.14 per additional irrigation job in the region. Morrison *et al.* performed a similar analysis for the Gwydir Marshes in north-western NSW.

Whitten and Bennett (2001c) used CM to estimate the willingness to pay to improve the management of wetlands in the Upper South East (USE) of South Australia and on the Murrumbidgee River Floodplain in south-western New South Wales. Respondent's one-off willingness to pay values for aspects of the wetlands are shown in Table 1.

**Table 1: Whitten and Bennett (2001c) willingness to pay estimates**

| <b>Willingness to pay for improvements to USE wetlands management</b>      |                         |
|--|-------------------------|
| Additional healthy wetlands  | -\$0.61 per 1000 ha     |
| Additional remnant vegetation  | \$0.92 per 1000 ha      |
| Additional ducks hunted  | -\$1.79 per 1000 ducks  |
| Number of threatened species that benefit                                  | \$4.81 per species      |
| <b>Willingness to pay for Murrumbidgee floodplains wetlands management</b> |                         |
| Additional healthy wetlands  | \$11.39 per 1000 ha     |
| Additional native birds  | \$ 0.55 per 1% increase |
| Additional native fish   | \$ 0.34 per 1% increase |
| Farmers leaving due to management changes                                  | -\$ 5.73 per farmer     |

### 2.2.3 Other wetland valuation studies

A number of studies have examined, and in some cases estimated, the market values generated by wetlands and the values of particular services supplied by wetlands.

Pyers (1997) estimated the annual value of insect control provided by Ibises to pastures surrounding the Gunbower Forest Ramsar site in Northern Victoria at \$675,000 over 100,000 hectares.

Whitten and Bennett (2000a, b) examined the values generated by wetlands to the businesses and quality of life of farmers. They found that wetlands generated significant positive business and lifestyle benefits but also imposed significant costs and foregone profits but did not quantify these benefits.

A number of studies have been undertaken into marketed goods produced by wetlands including fish and crustacean production from wetlands in Australia and the United States. Only one such

study relates to freshwater ecosystems, that by Amacher, Brazee, Bulkley and Moll (1989) estimated the value of additional marginal product from fish life support in Lake St. Clair, Michigan in the United States.<sup>4</sup>

Other studies have focused on the services generated by wetlands including storm protection (Farber 1987), aquifer recharge (Farber 1996), riparian filtering (Lant and Roberts 1990), nutrient filtering and retention and short term flood storage (Thibodeau and Ostro 1981, Folke 1991 and Gren 1995). Many of these studies relate to the value of coastal wetlands rather than the freshwater wetlands addressed in this report, however the values for similar services can be expected to be significant. A summary of the values from these and other studies is presented in Table 2.

**Table 2: Economic values of wetland outputs**

| Wetland outputs valued       | Number of studies | Median                        | Mean   | Range of means |
|------------------------------|-------------------|-------------------------------|--------|----------------|
|                              | Number            | -----Dollars US per acre----- |        |                |
| <b>Marketed goods:</b>       |                   |                               |        |                |
| Fish and shellfish support   | 8                 | 702                           | 6,132  | 7-43,928       |
| Fur-bearing animals          | 2                 | na                            | 137    | 13-261         |
| <b>Non-marketed goods:</b>   |                   |                               |        |                |
| General-nonusers             | 12                | 32,903                        | 83,159 | 115-347,548    |
| General-users                | 6                 | 623                           | 2,512  | 105-9,859      |
| Fishing-users                | 7                 | 362                           | 6,571  | 95-28,845      |
| Hunting-users                | 11                | 1,031                         | 1,019  | 18-3,101       |
| Recreation-users             | 8                 | 244                           | 1,139  | 91-4,287       |
| <b>Ecological functions:</b> |                   |                               |        |                |
| Amenity and cultural         | 4                 | 448                           | 2,722  | 83-9,910       |

na = not available

note: All dollar amounts are in 1992 US dollars, standardized using a 6 percent discount rate and a 50-year accounting period.

Source: Table 1, Heimlich, Wiebe, Claassen, Gadsby and House (1998).

Barbier *et al.* (1997) set-out the steps that should be undertaken for wetland valuations and also include a number of case studies of wetland valuation studies outside of Australia. They include agricultural, fishing and firewood benefits on the Hadejia-Hguru floodplain in Northern Nigeria (1989/90 \$US 34-51 per hectare), conserving areas of the Norfolk Broads in the United Kingdom (1989/90 \$US 580 per hectare) and nitrogen removal in Swedish wetlands (1989/90 \$US 34 per kg nitrogen reduction).

### 2.3 Trade-offs involved in exploiting or protecting wetland resources

Wetlands are typically resource-rich environments, and as a consequence offer many opportunities for so-called 'extractive uses' (see section 2.1). Protecting wetlands for their conservation values alone can mean that some of the potential extractive values of the wetland cannot be realized, or have to be reduced in the interests of sustainable extraction or multiple management objectives (such as restricted grazing to assist in maintaining water quality and

<sup>4</sup> Reference to a number of these studies can be found in Envalue, a database maintained by the NSW Environment Protection Agency on its website: [www.epa.nsw.gov.au](http://www.epa.nsw.gov.au). The values reported by these studies are not reported here because of their limited transferability to the Australian context.

wildlife habitat). These foregone values are referred to as the opportunity costs of protecting the wetland resources. Below are some examples of where tradeoffs are indicated in order to see multiple management objectives achieved.

**Grazing of wetlands in the Upper South East of South Australia** is estimated to yield over 16,000 dry sheep equivalents generating a present value surplus to wetland owners worth over \$1.17m (Whitten and Bennett, 2001b).<sup>5</sup> Similarly, wetlands on the Murrumbidgee River floodplain generate a present value to owners in excess of \$2.7m (Whitten and Bennett 2001a). The Centre for Water Policy Research (1999) indicates that over half of the grazing income generated in the NSW section of the Narran, Culgoa, Birrie and Bokhara catchments is from properties located entirely on these floodplains. It is estimated that the wetlands in the Lower Gwydir valley can carry double the number of stock per hectare than the surrounding dryland pastures (NSW Government 1996).

However, these values can come at a cost. Prolonged grazing beyond the carrying capacity of the wetland, and grazing of wetlands before they dry, can destroy soil structure and encourage soil erosion resulting in reduced water quality. It can also alter wildlife habitats significantly.

**The cropping values of wetlands** are less easily determined due to the intermittent nature of lake-bed cropping and a lack of studies of the economics of clearing and draining wetlands for irrigated and dryland cropping. Seddon, Thornton and Briggs (1997) indicate that cultivation permits for forms of lakebed cropping (of lakes over 100ha in size) cover nearly 75,000 ha or nearly 25 percent of intermittently flooded freshwater lake in the western division of NSW. The prevalence of lakebed cropping has led to the development of guidelines for managing such cropping. Briggs and Jenkins (1997) suggest that cropping systems can be managed to minimise the impacts on the natural resource values of wetlands, and in particular the small mammal populations.

The **returns to landowners from irrigated cropping** vary dramatically depending on world prices and the crop grown (which can also depend on the phase of crop rotation). The gross margin from rice can exceed \$1,000 per hectare while other crops may generate little or no gross margin (for example barley in 1999) (Faour and Davies 1999, Faour 1999).<sup>6</sup> Clearing and draining wetlands removes most natural resource values that are generated by wetlands

**Wetland forests** generate important values to wetland owners via harvested timber and firewood. Sawn timber from red gum forests in the Murrumbidgee region generates approximately \$50 per cubic metre for sawn timber, \$7.50 per cubic metre for harvest residue and \$12.50 per cubic metre for dry firewood (Whitten and Bennett 2001a). Timber harvesting can reduce arboreal and terrestrial habitat by removal of trees and fallen timber. With careful management it may be possible to sustainably manage many forested wetlands for timber production (albeit at a lower level) while maintaining other wetland values.

**Use of water from wetlands for irrigation supply and tailwater storage** has increased significantly in recent times. Whitten and Bennett (2000a) found that nearly 25 percent of wetland owners in the Mid-Murrumbidgee, Murrumbidgee Irrigation Area and lower Mirrool Creek used their wetlands for irrigation supply or storage and 47 percent as a drainage sink. The value of wetlands for water storage is unknown but is likely to be significant as evidenced by the cost incurred in enlarging wetlands for storage purposes. This said, the alteration to the hydrology of the wetlands often comes at the cost of many of the natural resource values previously provided by the ecosystem.

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<sup>5</sup> A dry sheep equivalent is an estimate of grazing productivity that measures the quantity of feed required to maintain a 50kg whether.

<sup>6</sup> The gross margin is the gross income from an enterprise less the variable costs incurred in achieving it. The variable costs are those costs that vary directly according to the size of the enterprise undertaken (for example, seed, water and fuel inputs).

## 2.4 Public versus private good in the management of wetlands

Some of the functions and services gained from protecting wetlands offer limited incentives to wetland owners to ensure continuing conservation management. This is because many of the outputs of protected wetlands cannot be bought and sold within markets. For this reason they are referred to as 'public goods'. The consumption or use of a public good cannot be controlled. This means that the owner of a wetland cannot sell access to the public goods it provides. Additionally, consumption by one consumer leaves no less for others to consume.

To understand this concept of 'public good' fully, consider the flood mitigation role played by many wetlands (see section 2.1 above). If a wetland provides flood mitigation services which benefit downstream communities, this flood retention service can be seen as a 'public good'. Everyone who benefits from the flood retention services provided by a wetland, whether they pay the wetland owner for it or not, gains the benefit of the service. So, an individual who wants the service, but doesn't want to pay, can still have the service, and no-one can prevent it. Once some people want the service and are willing to pay for it, they cannot control who gains the benefits. This means that less of the service is often provided, because too many people have an incentive to 'free ride' on the payment of others. That is, consumption/use by anyone cannot be prevented and the service is 'non-excludable'.

Also, if one person gains the flood retention benefit, it does not mean that their neighbours receive any less flood mitigation. This differs to say water extraction, where one person's extraction of water from a river does affect the amount of water others can use. The flood mitigation is therefore 'non-rival', and the water extraction is 'rival'.

Economists have looked closely at conditions where markets work well to produce the best outcomes for society (socially optimal outcomes), and where markets fail to do so. Markets work well for goods which are both "excludable" and "rival" (known as "private goods"). When goods are "non-excludable" and "non-rival", markets tend to fail. The flood mitigation example above is a case in point. Individuals do not perceive a strong incentive to provide the service, because it is not sufficiently in their self-interest to do so. They cannot afford to pay the full service for everyone (perhaps), but have an incentive to rely on others to pay for the service.

Conversely, many of the resources that constitute wetlands (such as land, water and vegetation) have alternative uses in farming, forestry and urban development. These extractive uses generate direct incentives to wetland owners via sale of goods that are bought and sold in markets, such as food and fibre. These goods are referred to as 'private goods' because once sold to one consumer they cannot be consumed by others. They are produced for profit and tend to, but do not always, significantly reduce the public good values that wetlands generate.

Protected wetlands tend to deliver fewer direct incentives to wetland owners than do wetlands used to produce marketed goods. That is, if I make a decision as a farmer to use my wetland for grazing, I gain the benefits through the sale of livestock, and, in so doing, incur the costs of production related to managing the livestock. If the benefits of doing this outweigh the costs, it is worthwhile doing it. However, if I manage my wetland for some biodiversity conservation service (which precludes or seriously limits my grazing regime) that benefits the broader community, but I don't receive any reimbursement from those who benefit, I have no incentive to manage the wetland for that public benefit.

The opportunities for profits from wetland protection are limited by their public good nature. Hence, wetland owners receive incentives that are skewed toward extractive uses of wetlands. What this means is the incentive they receive takes into account only a part of the necessary information required to make a decision in society's best interest. From a landholder's

perspective, they only receive information about extractive uses, for example, grazing. The information about, say, water quality benefits downstream, does not enter into any signal received by the landholder. The landholder receives only limited incentives to maintain the wetland in a 'healthy', intact state.

The above situation results in decisions regarding the use of wetland resources being made by private landowners which may not necessarily be the best decisions for the whole community. If the best use of a wetland from a societal point of view is different from that of a private view, then the private owner may need to receive some alternative set of incentives from society to change their uses of the wetland. Skewed incentives actually mean that the landholder is operating from a perspective that may be ill-advised from the broader public perspective. Skewed incentives result in too many wetland areas being developed for extractive uses and too few wetland areas being conserved.

## 2.5 Policy frameworks to support incentives measures

The pattern of wetland use that results from skewed incentives (see above) is inefficient from a society-wide perspective. This calls for the development of policy structures that are able to realign the incentive structures towards the outcome which society desires. There are two pure policy frameworks, and a mixed policy framework, that could be used to provide more appropriate incentives to wetland owners:

### **A planned or regulatory framework:**

Government purchases the wetlands or directly coerces or influences wetland owners to manage wetlands to produce the outputs it believes the community desires (influences could include direct payments to wetland owners for example);

### **A market framework:**

Government provides an institutional framework that encourages wetland owners to seek the highest valued use for their wetlands but does not provide any direct incentives to wetland owners (that is, no incentive payments or government coercion of wetland owners); or,

### **A mixed framework:**

Government provides a market framework and supplements this framework with some regulatory measures that encourage wetland owners to increase their production of wetland protection services beyond the level that would be produced under the set of skewed incentives.

All policy frameworks require decision-makers to possess sufficient information to choose the appropriate mix of extractive and natural uses of wetlands and so avoid the current inefficient outcomes. The choice between the available policy frameworks to be used to correct the wetland use incentive structure depends heavily on the relative costs of gathering and using this information.

Markets generate signals between buyers and sellers about the costs and benefits of producing wetland outputs and price incentives to act on these signals. However, these signals are not cost free and rely on the establishment of property rights for the resources embodied in the wetlands. For example, in New South Wales a market for access to waterfowl does not exist because duck hunting is banned. So not all wetland outputs are traded and therefore some signals are not generated. Changing property rights arrangements, or reducing the costs of participating in markets, can improve the flow of information in markets and hence improve outcomes in some cases. The costs of gathering, or sending, information in markets are referred to as 'transaction costs'. The size of the transaction costs can determine the relative efficiency of the market when

compared with alternative decision-making structures and hence is an important policy consideration.

Markets are sometimes not able to generate appropriate signals and price incentives because the transaction costs involved in setting up a market (for example, the costs of policing users of wetland protection goods who don't pay for them) are higher than the benefits of having the market. Even so, the same information about the relative costs and benefits of producing wetland outputs is still required for efficient decision making. If government decides to step in to help ensure wetland protection, it requires information about the relative costs and benefits of investing in wetlands versus other options, and hence needs to gather this information. The costs of gathering this information are significant and it may not always be accurate (see for example the discussion in Wills 1997). Despite the costs to government of gathering and acting on information about wetland benefits and costs, direct wetland conservation actions by government may be the best policy approach in some cases. In some instances the costs of government acting may outweigh the costs of the failings of the market. In these cases markets are to be preferred despite their failings.

A mixed policy framework may be preferred if it can be designed to take advantage of the strengths of the market and planned frameworks and avoid the pitfalls.

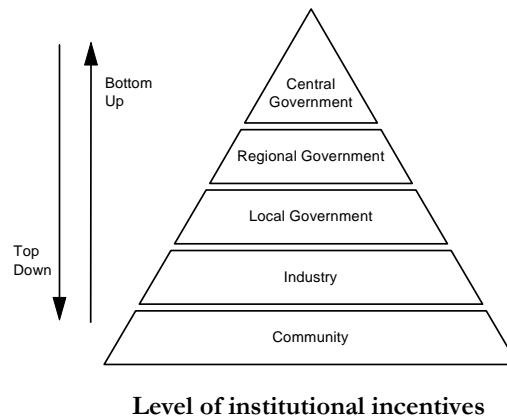
## 2.6 Types of incentive-related policy generated in Australia

Policy in Australia is generated at three government levels, local, State/Territory and Commonwealth. Within each of these government levels policy can take three basic forms: to facilitate, induce or compel (Bromley 1997).

The facilitative level is also often referred to as 'motivational' policy. Facilitative incentives involve government constructing frameworks, or assisting in making market mechanisms operational, but not directly providing funds or materials to wetland owners. Bromley (1997, p. 51) notes that policies that compel or coerce tend to alienate producers (as they abrogate their property rights) and may require a very high level of enforcement costs. Facilitative incentives involve an essentially market policy framework, whereas inductive incentives are created under a mixed policy framework and compulsion is achieved under a fully policy planned framework.

Policy approaches are also sometimes categorised within a 'top-down' or 'bottom-up' framework as shown in Figure 1 (Young and Gunningham 1997). Market based approaches are usually 'bottom up' in their day-to-day operations. The associated institutional arrangements regarding distribution of property rights and market regulations are usually 'top down'. Planned economic systems are rarely 'bottom up'. In these cases the planners are also the producers and potentially also the consumers of the outputs. Facilitative and inductive policy structures are more likely to be 'bottom up' while coercive policies are more likely to be 'top down' in nature. Policy mixes that include 'bottom up' facilitative and inductive elements are more likely to be accepted than 'top down' approaches that compel or coerce specified wetland management. The Organisation for Economic Cooperation and Development (OECD) (1999) stress the importance of capacity building in facilitating effective use of incentive measures that are 'bottom up' in nature.

**Figure 1: Major types of institutional arrangements**



Source: Adapted from Young and Gunningham (1997). Note that informal incentives are not shown. They are driven from within the society itself.

The advantages of each framework and some key assumptions regarding the costs and benefits of alternatives have been discussed in the preceding section. The costs and benefits can be used as a basis for choosing an appropriate mix of market and planned outcomes that will approach most closely the outcome desired by society.

### 3. Current, emerging and potential incentive measures for conserving freshwater wetlands

Contents:

#### 3.1 Introduction

#### 3.2 Assessment criteria

#### 3.3 Wetland conservation incentive measures – see below

| #  | TYPE OF INCENTIVE  | #  | CASE STUDIES  |
|----|--|----|---|
| 1  | Management advice and assistance                         |    |   |
| 2  | Land for wildlife schemes                                | 1  | 'Land for Wildlife' schemes                                       |
| 3  | Conservation covenants                                   | 2  | CONSERVATION COVENANTS WITH THE VICTORIAN TRUST FOR NATURE        |
| 4  | Capacity building in NGOs                                |    |   |
| 5  | Recognition of 'important' sites                         | 3  | Ramsar listing of the Lower Gwydir Wetlands                       |
| 6  | Wildlife ranching  |    |   |
| 7  | ECO-TOURISM PROMOTIONS                                   | 4  | BANROCK STATION WINES AND CARING FOR WETLANDS                     |
| 8  | RATE REBATES/CONCESSIONS                                 | 5  | CONSERVATION AREA RATE REBATES IN COOLOOLA SHIRE, QUEENSLAND      |
| 9  | Bonus development rights                                 |    |   |
| 10 | Direct grants  |    |   |
| 11 | Devolved grants  | 6  | On-ground assistance from Conservation Volunteers Australia       |
|    |  | 7  | Wetland Care Australia's <i>Wetland Repair Project</i>            |
| 12 | Ongoing management payments                              | 8  | Bush Tender trial in Victoria                                     |
| 13 | Removal of perverse land management incentives           |    |   |
| 14 | Removal of perverse tax incentives                       |    |   |
| 15 | Tax incentives   | 9  | Landcare tax incentives   |
| 16 | Tax incentives for NGOs                                  |    |   |
| 17 | Fee and tax breaks for conservation groups               | 10 | Purchase of Carnavon Station by the Australian Bush Heritage Fund |
|    |  | 11 | Donation of a property to Wetlands and Wildlife                   |
| 18 | Mitigation banking, and other tradeable rights systems   | 12 | Wetland mitigation banking in the USA                             |
| 19 | Third party independently assessed accreditation systems |    |   |
| 20 | Facilitating change of ownership                         | 13 | REVOLVING FUND OPERATED BY VICTORIAN TRUST FOR NATURE             |
| 21 | Land acquisition   |    |   |
| 22 | Performance bond   |    |   |
| 23 | Accredited licensing schemes                             |    |   |
| 24 | Zoning regulations                                       |    |   |
| 25 | Resource based regulations                               |    |   |
| 26 | EPBC Act – controlled actions                            |    |   |
| 27 | 'Safe harbour'/'duty of care' agreements                 | 14 | 'Safe Harbor' agreements in the USA                               |

### 3.1 Introduction

In Australia today a wide range of financial and other incentive measures are available to encourage private landholders to manage their freshwater wetlands and other natural resources for long-term sustainability and with the goal of retaining the functions, services and benefits that these ecosystems provide. Some of these incentives are targeted specifically toward conserving wetlands for their biodiversity values, while others are part of a broader range of 'landcare' and natural resource management measures. A number of incentives are only now being trialed in certain parts of Australia, and there are others that have been applied overseas and have not yet been used here.

The incentive measures considered and evaluated in this section (as listed in Table 3) are drawn from a number of publications, and the first-hand knowledge of the authors. Important sources include OECD (1999), Environment Australia (2001), Young *et.al.* (1996), Young and Gunningham (1997) and Productivity Commission (2001).

Each incentive measure considered in this section, is categorised according to their mode of operation (as outlined in section 2.6), meaning whether they seek to facilitate, induce or compel changes in wetland management behaviour by private landholders.

It should also be noted that the type of incentive available, or being applied, varies with the level of government. This is also indicated in the following, and illustrated in Table 3.

Short case studies relating to some of the incentive measure are also provided. This is not intended to be an exhaustive list of illustrative examples, but rather the case studies seek to provide a guide to the form that the incentive may take when implemented.

In the following review, each incentive measure is considered against six criteria, each of which is described below in section 3.2. It is important to note that the effectiveness of a particular incentive may vary greatly depending on the ecological and community circumstances, and so the assessments given are of a very generic nature. These aspects are highlighted wherever possible to give an indication of the important elements of the incentive that should be considered when applied to wetlands.

In addition, this section also addresses the potential to remove perverse incentives. Perverse incentives arise where policies inadvertently encourage actions that can impact adversely on the 'health' and functioning of wetlands. As such they are working in opposition to the aspiration of seeing wetlands managed for sustainability and conservation.

It is also important to note that in this section no attempt has been made to establish relative priorities for the introduction or expansion of the various incentives. In some cases the incentives are genuinely substitutes for one another, and the choice of incentive needs to be made on a cost-benefit basis. In other cases, the incentives complement each other, and need to be implemented as a suite of measures in order to gain best effect. Determining the most appropriate mixture of incentives is a task beyond the scope of this report, and also one that needs to be made at the level of government giving consideration to these issues.

Another important issue to consider is that of sequencing the implementation of incentives. It is not appropriate, or possible, to implement every incentive all at once. A very important consideration is that introducing new incentives should not be seen as a way to mitigate against continuing perverse incentives. The removal of perverse incentives is an essential first step. One of the major problems with this, however, is that it can be very difficult to gain agreement as to what exactly is the perverse incentive. Further, there can be very firmly entrenched interests associated with the perverse incentive that make it very hard to change. However, this report firmly takes the view that removal of perverse incentives is extremely important.

## 3.2

## Assessment criteria

The following six criteria are used in the review of policy incentives that follows. They are designed to assess the ecological outcomes achieved along with the social aspects including economic efficiency, fairness, ease of accountability and community involvement.

### Ecological efficiency

- Will the freshwater wetland management goals be achieved or is the incentive too general?
- ❑ Ecological efficiency considers the breadth of coverage in terms of both the range of wetlands covered and the geographic area covered by the incentive.
- ❑ This criterion also assumes that the management outcomes will be 'best practice' or close to it.

### Economic efficiency

- Does the incentive achieve conservation of those wetlands that are valued most highly by the community?
- ❑ The assessment includes recognition of the likely costs of the measures both at the administrative level (that is, the costs of an alternative delivery mechanism) and in operation (the level of payments to wetland owners).
- ❑ It also includes an assessment of how well the mix of incentive payments to wetland owners and the wetland owner's private inputs, reflects the mix of benefits to wetland owners and the wider community (that is, who gains and do they pay?).

### Social impact

- What are the equity and distributional impacts of the incentive measures?
- Who gains and who loses both now and in the future?
- Is the transfer coerced through government or encouraged voluntarily via markets?
- ❑ This section includes an overview assessment of the impacts on rural and regional Australia and the political acceptability of the measure.
- ❑ The nature of this criterion necessarily implies a subjective judgement.

### Flexibility

- Does the incentive measure allow for changing community attitudes toward wetland conservation to be reflected in wetland management practices?
- ❑ An assessment of the potential for the incentive measure to lead to innovations in wetland management is included in this section. That is, does the incentive measure dictate a management method rather than encourage a beneficial outcome.
- ❑ The section also includes an assessment of the capacity of the incentive measure to deliver a multiplier effect on government spending by developing and enhancing private sector wetland management contributions and capability.

### Accountability

- How can taxpayers be sure that the incentive measures are being used effectively?
- How easily can the benefits of changed wetland management be measured?

### Community involvement

- The degree to which the local community can be involved in designing, implementing and contributing to changed wetland management practices.

### 3.3 Wetland conservation incentive measures

The following analysis examines 27 different wetland conservation incentive measures. They are aimed at seeing freshwater wetland ecosystems managed for conservation and/or wise use. The more detailed analysis of individual incentive measures follows the order shown in Table 3.

**Table 3: Types of wetland protection incentives available for conserving wetland ecosystems\***

| How incentive operates |  | Type of incentive                                      | Local/regional application | State/Territory application | Commonwealth application |
|------------------------|--|--|----------------------------|-----------------------------|--------------------------|
| Facilitate             | 1  | Management advice and assistance                       | ☺                          | ☺                           | ☺                        |
|                        | 2  | Land for wildlife schemes                              | ☺                          | ☺                           |                          |
|                        | 3  | Conservation covenants                                 |                            | ☺                           |                          |
|                        | 4  | Capacity building in NGOs                              |                            | ☺*                          | ☺*                       |
|                        | 5  | Recognition of 'important' sites                       | ☺                          | ☺                           | ☺                        |
|                        | 6  | Wildlife ranching                                      |                            | ☺                           |                          |
|                        | 7  | Eco-tourism promotions                                 | ☺                          | ☺                           | ☺                        |
| Induce                 | 8  | Rate rebates/concessions                               | ☺                          | ☺*                          | ☺*                       |
|                        | 9  | Bonus development rights                               | ☺                          | ☺                           |                          |
|                        | 10   | Direct grants  | ☺                          | ☺                           | ☺                        |
|                        | 11   | Devolved grants  | ☺                          | ☺                           | ☺                        |
|                        | 12   | Ongoing management payments                            | ☺                          | ☺                           | ☺*                       |
|                        | 13   | Removal of perverse land management incentives         | ☺                          | ☺                           | ☺                        |
|                        | 14   | Removal of perverse tax incentives                     | ☺                          | ☺                           | ☺                        |
|                        | 15   | Tax incentives   |                            |                             | ☺                        |
|                        | 16   | Tax incentives for NGOs                                |                            |                             | ☺                        |
|                        | 17   | Fee and tax breaks for conservation groups             | ☺                          | ☺                           | ☺*                       |
|                        | 18   | Mitigation banking, and other tradeable rights systems |                            | ☺*                          |                          |
| 19                     | Third party independently assessed accreditation systems |  | ☺*                         | ☺*                          |                          |
| Induce/compel          | 20   | Facilitating change of ownership                       | ☺                          | ☺                           |                          |
|                        | 21   | Land acquisition                                       | ☺                          | ☺                           | ☺                        |
|                        | 22   | Performance bond                                       | ☺*                         | ☺*                          | ☺*                       |
|                        | 23   | Accredited licensing schemes                           |                            | ☺*                          |                          |
| Compel                 | 24   | Zoning regulations                                     | ☺                          |                             |                          |
|                        | 25   | Resource based regulations                             |                            | ☺                           |                          |
|                        | 26   | EPBC Act – controlled actions                          |                            |                             | ☺                        |
|                        | 27   | 'Safe harbour'/'duty of care' agreements               |                            | ☺*                          |                          |

\* The incentives are grouped according to their mode of operation. The level of operation is also indicated. Where the incentive is operational at present the level is shown with a ☺. Where there is potential for seeing the incentive operating at other levels these are shown with an ☺\*.

## 1. MANAGEMENT ADVICE AND ASSISTANCE

**Jurisdiction:** Local, State/Territory and Commonwealth      **Mode of operation:** Facilitate

### **Brief description of incentive and how it works:**

This incentive is simply about people sharing their experiences and expert information about wetland management. This can be through providing access to published literature (hard copy or web-based), training programs or offering face-to-face advisory services through traditional extension structures. It appeals to those landholders who are already conservation minded or interested to pursue more sustainable land/water management practices.

### **Examples:**

- Wetland management advisory publications are available on demand, or sometimes for a small charge, from some States and Territories, the Commonwealth, globally through bodies such as the Ramsar Convention Bureau, and also through a range of non-governmental organisations. Through programs such as Land for Wildlife (see 2. following) landowners receive information on conservation management.
- The city of Manningham in Victoria offers a subsidised Property Management Planning course for \$50. The Shire of Nillumbik (Victoria) offers a similar scheme in association with Greening Australia.

### **Major stakeholders:**

- International organisations, Commonwealth, State/Territory and some local governments.
- Non-governmental organisations.
- Landholders.

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Transfer of management information can lead to faster achievement of wetland management goals by avoiding the mistakes made by others, and conversely, passing on 'best practice' guidance.
- ❑ Information at the local or State/Territory level can be sometimes targeted towards issues of specific importance or relevance within that jurisdiction.
- ❑ Adoption and use of the information is voluntary, meaning information only acts on existing incentives.
- ❑ Current information dissemination and extension programs rarely target wetland management except as part of wider natural resources management objectives.
- ❑ Management information targeted at both farm management and wetlands on farms can increase the opportunity for win-win outcomes.

#### **Economic efficiency:**

- ❑ Once discovered, wetland management information has aspects of a public good – the costs of transferring information to an additional wetland owner is very low.
- ❑ Program costs are low, consisting of publications, training programs and possibly extension services. The ease of obtaining information reduces the time and monetary costs to landowners of learning about wetland management.
- ❑ Benefits occur when this input is sufficient to motivate or increase the effectiveness of voluntary actions.
- ❑ Management information can help to avoid costly mistakes that may otherwise be made, thus reducing the cost of generating wetland benefits.

#### **Social impacts:**

- ❑ Few government distributional considerations due to low cost.
- ❑ May lead to a significant long-term benefit through passing on of information to the wider community.

**Flexibility:**

- ❑ A moderate level of flexibility exists as actions are voluntary and the main aim is the distribution of information and innovations in management.
- ❑ If information delivery is relatively up to date it is a valuable tool in adjusting to changing community demands for wetland protection.
- ❑ Information delivery can also encourage rapid innovation.
- ❑ There is considerable scope for a multiplier effect on government and private contributions because information transfers reduce the costs of managing wetlands for conservation (as the cost to wetland owners of obtaining information is reduced).

**Accountability:**

- ❑ The cost of information transfers are relatively low, reducing the need for a high level of accountability.
- ❑ There is a need to ensure that the information transferred meets the needs of managers and is best practice.

**Community involvement:**

- ❑ Information transfer can greatly enhance the potential for community input as it provides opportunity for communities to use the information to facilitate a contribution to wetland management. However, because most wetlands are on private land the ability of the community to respond to the information is limited by the degree to which wetland owners are amenable to changing their management approaches.

**Comments:**

Information transfer is at the low cost, high impact end of the incentive options and as such warrants greater investment by Governments. Costs will increase with providing extension officers to provide on-ground facilitation and on-ground communication.

There is an ongoing debate about the cost of extension officers relative to the behavioural change it produces. The authors of this report are of the view that on-ground presence is among the most effective ways of working with landholders to produce conservation outcomes. WWF commissioned research in three towns in Northern NSW to determine community attitudes to conservation. One of the major findings from this research was that ‘word of mouth’ continues to be the major means by which landholders receive information. On-ground presence becomes important in working with the ‘word of mouth’ network, and face-to-face contact tends to make information more accessible and break down distrust of information provided by Government.

**Recommendations:**

1. While some efforts have been made by Governments to transfer technology and best practice in wetland management there has been no concerted national effort to provide a ‘clearing house’ to make accessing these resources simpler for private landholders. The Commonwealth Government is best placed to adopt a leadership role here, engaging its Task Force on Wetlands Communication, Education and Public Awareness to develop a range of delivery tools and avenues, such as a web-based portal, fact sheets, management manuals in hard copy and on CD-Rom etc.
2. Likewise, the NGO sector needs to be encouraged and supported where possible by Governments to dedicate more resources into making its information resources and expertise more accessible to private landholders.

3. More resources also need to be applied for the provision of extension officer/on-ground facilitation, particularly focused on 'important' sites (see Incentive 5). Research into the most effective combination of Commonwealth, State/Territory and local government resources should be undertaken. It is possible that a national framework could assist in focusing State/Territory and local resources to achieve the desired wetland management outcomes.
4. The development of specific rural landholder training modules and programs in wetland management as part of whole farm management is strongly recommended.

## 2. LAND FOR WILDLIFE SCHEMES

**Jurisdiction:** State/Territory Governments  
Facilitate

**Mode of operation:**

### **Brief description of the incentive and how it works:**

The Land for Wildlife schemes aim to establish voluntary, non-binding agreements with landholders to encourage and facilitate management of their land towards specific biodiversity conservation objectives. A second major component of these programs is an extension and education service aimed at encouraging a conservation-oriented approach to property management. Hence, a wetland owner who is actively managing their wetland and is a member of a Land for Wildlife program receives assistance from an extension officer to formalise their management into a farm or site plan that then becomes a voluntary, non-binding agreement. This program advocates the practical benefits to landholders that can result from nature conservation. Land for Wildlife does not offer financial incentives but provides advice to landholders on management issues relating to biodiversity conservation (Stoneham *et al*, p4).

This form of incentive appeals to those landholders who are already conservation minded, and provides a means for like-minded landholders to share information and encourage one another. The mechanism works through lowering the costs of conservation management to landholders by providing information in a structured framework and increasing their benefits via social interaction and education.

From the State/Territory Government perspective, the social benefits gained from the conservation of the land exceed the cost of providing the Land for Wildlife services, and it is cheaper than the alternative of direct management payments (see incentives 10, 11 and 12).

### **Examples:**

- Available in a variety of forms in Victoria, NSW, Tasmania, Western Australia, Queensland and in two city councils in the Northern Territory (Litchfield and Alice Springs).
- See Case study #1

### **Major stakeholders:**

- Local, State/Territory Governments
- Landholders

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Currently not specifically targeted at wetlands, but equally, does not exclude them from consideration.
- ❑ Participation is voluntary and while sites have a minimum ecological value for entry they may, or may not, have special wetland values.

#### **Economic efficiency:**

- ❑ Costs consist of field-officers to provide advice, notes, newsletters and field-days, evaluation and monitoring.
- ❑ The incentive is likely to be efficient in terms of benefits exceeding costs, however it is likely to appeal to only a sub-set of landholders (those already with a high preference for conservation).

**Social impacts:**

- ❑ This incentive requires relatively few government resources, placing limited demands on government budgets.
- ❑ The benefits generated usually extend beyond the landowner into the wider community because they are often public goods.

**Flexibility:**

- ❑ A moderate level of flexibility exists as actions are voluntary and the main aim is distribution of information and innovations in management.
- ❑ This incentive addresses private preferences for conservation, and not necessarily the preferences of society.
- ❑ Individuals already interested in conservation can be encouraged to conserve.

**Accountability:**

- ❑ Accountability is high as properties are publicly registered and identified by a sign (although there is no public access).
- ❑ There may be difficulties because extension officers can unwittingly focus on “pleasing” landholders rather than achieving the program objectives.

**Community involvement:**

- ❑ This incentive can motivate local communities who own natural resources (such as local government managed crown lands) and also appears to provide a linkage point for other community members to become involved in implementing and contributing to changed wetland management practices.
- ❑ Specific wetland management training for rural landholders can enhance the opportunities for communities to cooperate in wetland management by demonstrating the importance of healthy wetlands, the value of active management and the types of input and sources of help that are available.

**Comments:**

The Land for Wildlife approach can be applied equally to terrestrial or wetland sites. The latter requires provision of appropriate information, and extension officer skills in wetland management. This should not entail significant extra cost to the existing Land for Wildlife schemes. This incentive works well as a companion to Incentive 1.

**Recommendations:**

1. Land for Wildlife schemes should be adopted in all States and Territories where they are not currently operating.
2. Commonwealth, State/Territory and local governments need to determine an appropriate means of resourcing the adoption of these schemes at local government level.
3. Where Land for Wildlife programs are operating (or begin), freshwater wetlands need to be identified as a priority, especially where they are seen as important elements of maintaining ‘healthy’ catchments. This could be promoted as part of the Natural Heritage Trust’s programs and the National Action Plan for Salinity and Water Quality.
4. Skills training needs to be made available for Land for Wildlife Extension Officers in order to encourage conservation management practices for freshwater wetlands.

## **Case study #1:**

### **'Land for Wildlife' scheme in Queensland**

Land for Wildlife is a voluntary scheme operated through local councils in Queensland. The Land for Wildlife program aims to encourage and assist landholders to provide habitats, including wetlands, for native wildlife on their property, even though the property may be managed primarily for other purposes.

#### ***Wetland owner requirements:***

Wetland owners must qualify for Land and Wildlife meaning they have to demonstrate that they are:

- ❑ managing all, or part, of their property in a way which clearly aims for the maintenance and enhancement of natural habitat; and,
- ❑ attempts to integrate nature conservation with other land management objectives.

#### ***Assessment:***

An extension officer from Land and Wildlife visits interested landholders to discuss their plans. Subject to a favourable assessment, properties may then be entered on the Land for Wildlife register. Properties that do not qualify may wish to work towards registration with the assistance of the extension officer and Land for Wildlife.

#### ***Future requirements:***

The Land for Wildlife status of the property is retained as long as the objectives of the scheme are upheld. If the property changes hands the Land for Wildlife Status is lost and the new owners will need to re-apply for membership if they so desire.

#### ***Scale of incentives:***

Land for Wildlife membership offers participating landholders:

- ❑ advice through extension officers on habitat management, integration into other landuses and assistance in applying for other forms of assistance or incentives;
- ❑ contact with like-minded landholders and a chance to share in their ideas and experiences through field days, publications and other activities; and,
- ❑ written information in the form of regular newsletters and a more detailed notes series.

### 3. CONSERVATION COVENANTS

**Jurisdiction:** State/Territory Governments

**Mode of operation:** Facilitate

**Brief description of the incentive and how it works:**

Conservation covenants are a voluntarily entered, but permanently legally binding restriction on the way in which landowners are able to use their land. For example, on a covenanted area, grazing may be prohibited and additional weed control expected. The restriction is in the form of a conservation covenant that is attached to the land title. Compliance with the conservation covenant is generally via a regular inspection by the body which is a party to the conservation covenant (usually a government department or statutory authority in Australia).

**Examples:**

- Conservation covenants are available through Government Departments in all States/Territories. No jurisdictions allow non-government organisations to hold conservation covenants (see recommendations below). Exceptions to this are the Victorian Trust for Nature and NSW Nature Conservation Trust which are set up under State legislation (and are effectively statutory authorities) and the National Trust in Western Australia.
- See Case studies #2 and #13.

**Major stakeholders:**

- State/Territory Governments
- Statutory authority or National Trust where applicable
- Landowner

**Evaluation:**

**Ecological efficiency:**

- ❑ Do not specifically target wetlands, but equally do not preclude them.
- ❑ Because the conservation covenants and management agreements are currently standardised they are not able to incorporate directly wetland management goals except so far as they are covered under management for conservation outcomes generally.
- ❑ Associated management plans can incorporate wetland management goals but provide fewer legal safeguards.
- ❑ Participation is voluntary but covenants could be purchased if sufficient funds were available, thus increasing the incentives for participation.

**Economic efficiency:**

- ❑ Conservation covenants are at present either donated **or** created as part of a revolving fund sale (see Incentive 20). Hence, the community achieves a permanent wetland protection outcome at little or no cost.
- ❑ Costs to the community are only the extent of government support to the covenanting organisation and potentially in terms of ongoing monitoring of the covenant.
- ❑ Covenants could be purchased by government if sufficient funds were available. The efficiency of such an approach would depend on the cost of the covenant relative to the wetland protection benefit so achieved.

**Social impacts:**

- ❑ Conservation covenants tend to maintain the current wetland management distribution or protect rehabilitated sites. This is because areas that are already managed for conservation are more likely to be donated.
- ❑ Conservation covenants do not actively encourage improved wetland management or rehabilitation of degraded wetlands.

- ❑ Purchase of conservation covenants is a transfer of resources from the purchasing organisation to the wetland owner. The extent and nature of the transfer depends on the purchase price and where the purchasing organisation draws its funds.

**Flexibility:**

- ❑ Conservation covenants are a permanent minimum level of conservation.
- ❑ They are only flexible in terms of ensuring the level of conservation in the future.
- ❑ Because they impose a minimum level of conservation they may constrain innovative management by imposing a baseline ecological condition. The owners of covenanted wetlands are obliged to manage in specified ways – this may reduce the potential for innovative management that may discover cheaper or more effective ways of managing wetlands.
- ❑ Covenants are often used as a tool to signal conservation values and potentially to attract government and private sector spending.

**Accountability:**

- ❑ Covenants are a legally binding agreement on land titles. As such they provide a transparent, well defined level of protection.
- ❑ Ongoing accountability depends on ongoing monitoring and policing.
- ❑ Covenants can be a useful cross-compliance tool with direct grants.

**Community involvement:**

- ❑ There is little opportunity for community involvement.

**Comments:**

Conservation covenants have become an increasingly important conservation measure in Australia. Recent taxation amendments (to come into effect in July 2002) may provide further incentive for uptake of covenants, however there are still some limitations. There is a paucity of information on how the tax changes will affect landholders entering into covenants. How to best focus conservation covenants to achieve wetland management goals is a separate issue, but barriers to the uptake of covenants also need to be considered.

At present conservation covenants can only be held and enforced by government or legislatively enacted bodies in Australia (with the limited exception of the National Trust in WA). Hence, interested landowners must negotiate with government or its appointed agent. Other conservation organisations cannot enforce a conservation covenant they may have helped negotiate and thus cannot protect the results of their efforts. There is also less opportunity for organisational expertise to be developed with respect to specific regions or types of natural resources, mainly because no competition exists in the market for conservation covenants.

In addition, conservation covenants are currently only applied to land. Given the importance of water in the functioning of wetland ecosystems, the prospect of covenanting being extended to water rights should also be investigated.

The extent to which non-government bodies should be able to enter into conservation covenants in Australia is unclear. However, an important step is the development of ‘arms length’ statutory authority Conservation Trusts in each State and Territory. However, specialised innovation and competition between trusts to preserve wetlands and other valuable public goods will only develop with greater participation of non-government organisations in covenanting. Ensuring Conservation Trusts are in place in each State and Territory is an important step. This incentive looks to further the option to the broader non-government sector through setting up an appropriate framework.

**Recommendations:**

1. Encourage greater and more systematic use of conservation covenants as a permanent protection mechanism for those wetlands recognised as “important” at the catchment, national and international levels (see 4. below)
2. Develop and promote conservation covenants specifically for wetlands and include as part of this access to expertise in developing associated management plans.
3. Investigate further possibilities to encourage the uptake of conservation covenants generally, including the extension of covenants to cover water rights.
4. The ability to negotiate, hold and enforce conservation covenants should be extended to eligible non-government organisations. Eligibility rules should be minimal and be based on ensuring the organisations have appropriate goals and structures and possibly also include fiduciary requirements to ensure ongoing management capability.

## **Case study #2:**

### **Conservation Covenants with the Victorian Trust for Nature**

A conservation covenant is an agreement between a landowner and an authorised body such as the Victorian Trust for Nature, which protects and enhances the natural, cultural or scientific values of the land, including wetlands.

#### ***Eligible wetlands:***

Land must be of high conservation significance to be covenanted. Such wetlands may have threatened plants or animals, or be one of the last remaining wetlands in the area. The wetland may also form part of an important riparian or wildlife corridor or facilitate important functions for riverine 'health'. A Board of nine Trustees who are briefed by the Trust's expert regional staff assesses the eligibility of land. Important factors include: degree of disturbance; diversity of plants and animals; presence of threatened or endangered species; value as a buffer or wildlife corridor; size and shape of area; and, management input required to maintain the ecological integrity of the site.

#### ***Restrictions on future landuse:***

Conservation covenants are permanent and can only be removed in extreme and unusual circumstances. Most covenants eliminate grazing and place significant restrictions on other landuses, including limiting building permits, pets and species planted in the covenanted area.

#### ***Future management requirements:***

Future management is the responsibility of the landowner. However, the Trust for Nature can provide advice on most aspects of management including flora and fauna management and weed and vermin control. The Trust can also help prepare a management plan and direct landholders to various grants and agencies that offer financial assistance and subsidies to landholders.

#### ***Monitoring requirements:***

The conservation covenant agreement specifies a number of monitoring requirements including specified monitoring access for the Trust for Nature. No right of public access is created under the covenant.

#### ***Impact on property value:***

A conservation covenant may have little impact on property values since landuse is generally unchanged. However, impacts on specific property values depend on the particular circumstances of the property. Qualified land valuers may be able to assist in determining the likely impact on property values. A number of recent amendments to the Capital Gains Tax (CGT) may change the incentive structure where conservation covenants are entered into.

## 4. CAPACITY BUILDING IN NGOS

**Jurisdiction:** Commonwealth, State/Territory  
Facilitate

**Mode of operation:**

### **Brief description of incentive and how it works:**

Non-government organisations take time to develop expertise in project management, financial management and fund raising, and a sufficient resource base to make a significant contribution to natural resource management. The time taken to achieve sufficient size and expertise can be reduced via provision of training and mentoring to enhance the capability of such organisations.

In the USA these tasks are often undertaken by larger conservation organisations such as the Sonoran Institute and the Nature Conservancy, or by overarching national structures such as the Land Trust Alliance. A role exists for government to facilitate some of these roles in Australia as no comparably large NGOs exist (although WWF is undertaking limited aspects of this role in some areas).

### **Examples:**

- In the USA the Sonoran Institute has produced a number of publications (for example: *Beyond the Hundredth Meeting: A Field Guide to Collaborative Conservation on the West's Public Lands*) (Cestero 1999) and undertakes training seminars and mentoring.

### **Major stakeholders:**

- Government
- NGOs

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Increases the capacity of the non-government sector to assist with pursuing wetland management goals.
- ❑ Is only likely to be effective where there is sufficient population, interest and resources to support one or more non-governmental groups..

#### **Economic efficiency:**

- ❑ Relatively low cost input by government that may generate substantial benefits once skills in community groups are developed.

#### **Social impacts:**

- ❑ A small transfer from taxpayers to the community.

#### **Flexibility:**

- ❑ Increases the ability of the community to act to conserve wetlands. May significantly increase the level of innovation in wetland management and is likely to deliver a significant multiplier on government and private sector contributions.

#### **Accountability:**

- ❑ Goals and delivery of capacity building need to be clearly set out in order ensure resources are not wasted.

#### **Community involvement:**

- ❑ Significant opportunity to increase community involvement in wetland management.

**Comments:**

For many NGOs there is an issue of independence from Government. NGOs often seek to fill the 'facilitator' niche that Government and/or the private sector cannot, and this independence is often critical to success in playing that role.

**Recommendation:**

1. Governments at the Commonwealth and State/Territory level are urged to consider ways to enhance the capacity of NGOs (both financially and skill-wise) to contribute to natural resource management, and in particular wetland management in this context, while seeking to leave NGOs with autonomy and at 'arms length' from Government so they can continue to actively facilitate shifts in wetland management practices toward sustainability.

## 5. RECOGNITION OF ‘IMPORTANT SITES’

**Jurisdictions:** All

**Mode of operation:** Facilitate

### **Brief description of the incentive and how it works:**

Many wetland owners are unaware of the importance of their wetlands. Gaining an appreciation of why the site is recognised as important may encourage them to manage these sites to maintain these important values. Formal recognition of the importance of a site may also act as a trigger to wetland owners to seek support or assistance with management. The relative importance of wetlands can be signalled via their listing in different categories of wetlands. Internationally important wetlands can be listed under the Ramsar Convention on Wetlands or on the Asia-Pacific Shorebird Network. Nationally important wetlands may be listed in *A Directory of Important Wetlands in Australia*. (See Appendix 3 for further details of these international and national initiatives). Regionally important wetlands can be listed in land and water management plans or other regional resource management plans.

### **Examples:**

- Catchment management committees (or equivalent bodies) are developing management plans as part of an ongoing process in most catchments Australia-wide and many of these are now identifying the most significant wetlands for a range of functions.
- Ramsar Wetlands of International Importance listings are available in all areas provided minimum criteria are met. Around 850 nationally important sites have now been documented in “*A Directory of Important Wetlands in Australia*”.
- See Case study #3

### **Major stakeholders:**

- Governments at all levels
- Regional and catchment-level planning bodies
- Landowners
- Bureau of the Ramsar Convention on Wetlands
- Wetlands International as coordinator of the Asia-Pacific Migratory Waterbird Conservation Strategy

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Listing wetlands according to their importance is a key signal in identifying wetlands with high conservation values.
- ❑ Listing will only achieve wetland management goals if the objectives of the owner are compatible with the wetland management goals expected under the form of official recognition given to the site. However, signalling can also lead to management actions to remove the high ecological values where these are regarded as undesirable by the wetland owner (a perverse incentive to destroy wetlands).

#### **Economic efficiency:**

- ❑ Signalling devices are low cost relative to direct contributions but will only achieve community benefits where the signal identifies values that the wetland owner is also interested in achieving/maintaining. There will be great variation in the management implications of a listing. That is, in some cases a Ramsar listing may require only minor change to management practice, whereas in other cases it may incur significant costs. Hence, a landholder may not have sufficient resources to manage a Ramsar site, even

though its importance has been signalled. So cost sharing issues for environmental management in the public interest also need to be considered.

**Social impacts:**

- ❑ There are no direct distributional implications as there are no transfers from or to wetland owners. However, signalling devices may trigger improved wetland management including additional demands on other wetland incentives. Hence, signalling can leverage other social impacts.

**Flexibility:**

- ❑ Signalling devices based on planning frameworks and listings of wetlands are only able to reflect changes to community demand as often as they are reviewed. Regional and catchment plans are likely to be reviewed on timeframes ranging from three to five years. Ramsar listings are permanent. Until 2001 sites in the “*Directory of Important Wetlands in Australia*” were officially reviewed every three years. This is now a database into which new sites can be added by the relevant State or Territory Government at any time.
- ❑ Planning frameworks can sometimes fail to achieve overall wetland management goals by focussing more narrowly on specific practices or outcomes. The more holistic the plan, the better. Alternatively, a plan can be useful if it helps prioritise the issues so as to encourage appropriate government and private spending.

**Accountability:**

- ❑ Accountability is dependent on the planning or nomination process. For example, historically Ramsar nominations proceeded at the State/Territory level (with local consultation), however some recent nominations have been initiated by wetland owners (Lower Gwydir listing – see Case study #3) and the extension to the Macquarie Marshes Ramsar site). Similarly, accountability of planning is dependent on the level of community input to plans and auditing of outcomes.

**Community involvement:**

- ❑ Community involvement in planning is likely to be high as strong involvement and support is required for the success of regional/catchment management plans.
- ❑ Community involvement at the wetland management level may be much lower and will depend in part on the strategies adopted to foster community management.

**Comments:**

Non-government organisations, some with Commonwealth Government support, are now seeking to promote Ramsar listing of privately owned wetlands. These efforts are beginning to show results, and it is clear that the landowners in question have seen the advantages that Ramsar listing can provide.

A further issue is the way in which the importance of wetland sites is incorporated into planning processes developed by State and Territory Governments. There is great variation among these planning processes. The Commonwealth Government has established a Natural Resources Management Ministerial Council, one duty of which is to oversee the National Action Plan for Salinity and Water Quality. It is necessary for these processes to ensure that planning at State/Territory, catchment and local levels is sufficiently capable of managing the needs of wetlands of regional, national and international importance. At present, many of the catchment areas involved are under resourced, and have not been provided with sufficient guidance to develop appropriate plans. In this recognition process there is also a need to ensure that the important contributions of wetlands that do not meet these criteria are not forgotten.

Finally, it must be recognised that listing wetlands may create perverse incentives to wetland owners who, fearful of the cost and loss of control consequences of listing, may seek to destroy their wetland values.

**Recommendations:**

1. The Commonwealth Government, in collaboration with the States and Territories needs to develop a more systematic approach to identifying 'important' wetlands. These should then be given special consideration in catchment-based planning. This process of identification needs to meet the necessity for a nationally agreed approach to building a comprehensive, adequate and representative system of aquatic reserves, including Ramsar sites.
2. A ranking of 'important' wetlands should be established in order to facilitate decisions regarding the allocation of government funds for wetland protection. The ranking should be formulated on the basis of ecological and social factors, and also consider community preferences where possible.
3. Resources for managing Ramsar listed wetlands need to be made available in those cases where an excessive cost burden would be placed on individual landholders. This may require the development of additional incentive mechanisms.

### **Case study #3:**

## **Ramsar listing of the Lower Gwydir Wetlands**

The Ramsar Convention is the mechanism through which Wetlands of International Importance are recognised (see Appendix 3). The Ramsar Convention also promotes the 'wise use' of wetlands on any land tenure including private landowners and publicly owned wetlands such as national parks and nature reserves. In 1999, four wetland owners in the Lower Gwydir floodplain agreed to Ramsar list wetland areas on their properties.

### ***Why the wetlands were eligible:***

The Lower Gwydir wetlands are one of the few terminal wetlands found in inland New South Wales and are a complex mix of wetland types and habitats. They are of international significance because of the very large numbers of waterbirds that breed and feed in the wetlands and because of the large areas of water couch (*Paspalum distichum*) and marsh club-rush (*Bolboschoenus fluviatilis*) wetland pastures.

### ***Wetland management:***

A Memorandum of Understanding was negotiated by the World Wide Fund for Nature and the National Parks Association between the landholders, the NSW Government and the Commonwealth Government. The Memorandum of Understanding states in writing the objectives of the signatories, including wetlands conservation, economic viability of landholders and support for private ownership and autonomy of management for landholders. Property level planning is nearing completion and will document current management practices and any agreed actions to improve the conservation of the wetland. Future management is the responsibility of the landholder.

### ***Restrictions on future landuse:***

Current landuses that are consistent with maintaining the ecological, or hydrological, or other natural values of the site can continue. These uses can include sustainable grazing, forestry, eco-tourism and a number of other uses. Allowable landuses are included in the management agreement. Landuses inconsistent with wetland sustainability, such as landclearing, are not allowed under the Memorandum of Understanding.

### ***Entry and monitoring requirements:***

There are no mandatory inspection requirements under Ramsar listing. The Ramsar Convention attempts to involve people in co-operative discussions that include monitoring arrangements. No right of public access is created to the wetland, all entry requires the permission of the landowner.

### ***Possible costs of listing:***

WWF notes that possible costs may involve attending meetings, reduced property values and the time investment required to negotiate a suitable management framework.

### ***Benefits of listing:***

Listing creates obligations to consider the water requirements of the Gwydir wetlands when decisions are made about water harvesting and water allocations in the catchment. The negotiation of management agreements allows landholders to proactively seek government and conservationist agreement to the management of wetlands on terms negotiated by the landowner. Listing of the wetland in combination with the management agreement grants additional leverage in seeking funding from other sources to assist in managing the wetlands. Listing also allows potential access to eco-tourism markets.

## 6. WILDLIFE RANCHING

**Jurisdiction:** State/Territory Governments  
Facilitate

**Mode of operation:**

### **Brief description of the incentive and how it works:**

Wildlife ranching refers to the practice of managing fauna in their natural environment in order to harvest a proportion of the fauna. It differs from wildlife farming native animals in that only habitat management takes place rather than a managed breeding program. The reward to the landowner is permission to sell a maximum quantity of a specified species. The return to government for issuing the right to harvest the species is an agreement to manage the land in a particular way that encourages the target species and other native fauna species.

### **Examples:**

- Wildlife ranching is available for a limited range of fauna in Tasmania where it is termed 'Property-based Game Management Planning' (PBGMP). PBGMPs are property specific written agreements between landowners and hunters facilitated by a representative of the Game Management Unit in the Parks and Wildlife Service in Tasmania. Their purpose is to manage wild game species at levels compatible with agriculture, forestry and the environment while providing for sustainable hunting opportunities and fair compensation for the landowner. PBGMPs facilitate access to hunting permits and formalise relationships with hunters. They are free and non-binding to landowners and facilitate greater management control over their property. Species covered by PBGMPs include brush-tailed possums, Bennett's and rufous wallabies, fallow deer and brown quail.

### **Major stakeholders:**

- State/Territory governments
- Landowners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Does not directly target wetlands or wetland species.
- ❑ Wetland management goals could be achieved by directly targetting such a program at wetland outputs. For example, the government could list fauna species (such as fish, game waterfowl and other species such as crocodiles) for which it will consider negotiating 'Ranching for Wildlife' agreements with landowners.

#### **Economic efficiency:**

- ❑ No direct cash inputs by government.
- ❑ Benefits are derived via sale of fauna from land managed according to the agreement.
- ❑ Ongoing costs of monitoring the agreement are incurred by government.

#### **Social impacts:**

- ❑ Ranching for wildlife may grant increased benefits to wetland owners in return for producing outputs that the community values. However, they can also create a cost where harvesting the benefit places a non-monetary cost on parts of the community (as duck hunting does).

#### **Flexibility:**

- ❑ Ranching for wildlife outcomes will vary according to the changes in community demand for the commercial products (outputs). In the event of high demand for the outputs, eg fish, ducks or crocodiles, the system will need to be robust enough to avoid illegal ranching by landowners who do not hold wildlife agreements. Landholders

would need to understand the benefits of the quota system in order for it to provide public benefits.

- ❑ There is a high potential for innovation to increase production of the valued output.
- ❑ There is also potential that innovations to increase target species production may, over the longer term, decrease the advantages of Ranching for Wildlife agreements to non-target species.

**Accountability:**

- ❑ The net benefits generated to the community may be difficult to measure because of the potential costs to the community arising because of ethical issues associated with animal rights concerns.
- ❑ It may also be difficult to separate the benefits from Ranching for Wildlife agreements from other activities in the wetlands such as eco-tourism. However, outcomes are generated at low cost to the community so long as any ethical concerns held by the broader community are limited.

**Community involvement:**

- ❑ This measure is likely to be controversial in some cases, and therefore community understanding of the mechanism would be necessary. In some cases, such as duck hunting for example, there may be some community opposition. Perhaps if the community understood that the proceeds of the ranching were providing long-term conservation benefit, this would mitigate opposition. There are overseas examples that support such schemes, such as those operated by many Western United States covering several deer species among others and those assisting with elephant and turtle conservation in other parts of the world.

**Comments:**

Ranching for wildlife leads to the marketing of native species produced on the landholders land and hence means these species become valuable to the landowner who is then more likely to invest in habitat management to protect their future income. Despite this relationship, there are likely to be a number of problems in explaining the resultant incentive for conservation to the wider community. Further problems may arise where ecological understanding of potential target species is limited or there is a reliance on resources owned by multiple landowners. Hence, negotiation of appropriate agreements may be difficult outside a limited range of terrestrial fauna.

The success of such a scheme will depend on the ability to select suitable species where the quota limits will not have a significant ecological impact, and the ability to ensure that the proceeds are reinvested, at least in part, into wetland management. In many cases, the landholder may see this as providing an increase in their income stream, and might not wish to have restrictions placed on how that income is used.

**Recommendation:**

1. Ranching for Wildlife schemes involving suitable wetland-dependent species warrant further investigation as an incentive measure. There would seem to be opportunities to examine such ventures in conjunction with other wetland activities such as eco-tourism. It is acknowledged that such schemes may be controversial, and their success would rely heavily on information being available that would facilitate community understanding of the conservation gains being achieved.

## 7. ECO-TOURISM PROMOTION AND INFRA-STRUCTURE DEVELOPMENT

**Jurisdiction:** Local/State/Territory Governments  
Facilitate

**Mode of operation:**

### **Brief description of the incentive and how it works:**

Most regions produce tourism promotion material listing the major sites of interest, accommodation and activities. Listing local wetlands that can be visited in such literature can increase the potential for eco-tourism to contribute to wetland protection. In regions with large areas of important wetlands a specific promotion of the attractions of visiting wetlands could lead to development of wetlands oriented eco-tourism. The concept could be extended to the State/Territory or national level via incorporation of 'Visit a Wetland' holidays with other wetland literature.

Further, Governments often provide heavily subsidised infrastructure for businesses where the infrastructure has important public good characteristics. In the case of wetland-related tourism suitable infrastructure could consist of transport infrastructure (especially roads), signage on tourist routes, viewing platforms and walking trails. Provision of such infrastructure may reduce the costs to wetland owners of diversifying into eco-tourism enterprises by enhancing the demand for their products and reducing their costs of operation.

### **Examples:**

- The large "icon" wetlands such as Kakadu, the Coorong and the Ord Scheme receive extensive tourism promotion.
- There are also examples of the merging of commercial ventures with eco-tourism such as the Banrock Station Wine and Wetland Centre in the Riverland of South Australia that receives around 70,000 visitors per year – see Case study #4.

### **Major stakeholders:**

- Local, State/Territory Governments
- Business sector
- Wetland owners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Targets areas of high recreational value that may or may not have high ecological values. This is likely to be a problem where limited environmental budgets are used, and the ecological outcomes are minor. It may be possible to ensure proceeds from tourism from low ecological value sites are invested in management of sites with higher ecological value (a form of cross-subsidy).
- ❑ Increasing recreation in areas of high ecological value may present a threat to those values.
- ❑ Would indirectly encourage achievement of wetland management goals where they intersect with private tourism goals.

#### **Economic efficiency:**

- ❑ Promotion is low cost at the delivery and operational level when incorporated with existing tourism promotion activities. However, it is difficult to measure direct impacts of tourism promotion on wetland management.
- ❑ Likely to increase the benefits to participating wetland owners, visitors and the wider community through flow-on effects.
- ❑ May increase the resources available for wetland management through tourism receipts.

- ❑ Would reduce the cost (in time and money) to potential wetland visitors of finding activities of interest and the cost to wetland eco-tourism operators of publicising their activities to interested clients.
- ❑ Costs of infrastructure development will vary depending on what is proposed.
- ❑ Communities will need to consider carefully whether the tourism and wetlands conservation rewards are sufficient to justify the costs. This may be a problem where limited environmental budgets are used, and the ecological outcomes are minor.

**Social impacts:**

- ❑ Promotion facilitates a market transfer whereby wetland owners and visitors benefit now and into the future without significant cost to government.
- ❑ Payments by tourists to wetland owners are a potentially large incentive to conserve their wetlands into the future.
- ❑ Infrastructure development implies a redistribution from the broader community to the tourism industry including wetlands owners in the industry. However, where wetland protection results from the initial investment in infrastructure, the broader community enjoys the public benefits so provided.

**Flexibility:**

- ❑ Highly flexible as it acts on individual preferences and encourages entrepreneurial and innovative management of wetlands.
- ❑ Provision of infrastructure may allow a market to develop for wetlands tourism. Changes in community demand for wetlands tourism could then be reflected in wetland supply.
- ❑ The measure also encourages innovative management and private sector contributions to wetlands management.

**Accountability:**

- ❑ High level of accountability as participating wetlands can be inspected (potentially at cost of entry) by members of the community and the decision making process is likely to be relatively transparent.
- ❑ Accountability requires transparency in the processes used to allocate government resources to infrastructure development.
- ❑ It would be difficult to measure the direct change in wetland management that results.

**Community involvement:**

- ❑ Only likely to have a high impact where significant recreational or other tourism related values can be tapped as direct inputs to management.
- ❑ Motivate local communities that own wetlands.
- ❑ May also provide a linkage point for other community members to become involved in implementing and contributing to changed wetland management.

**Comments:**

It is important to note the distinction between promoting eco-tourism *per se*, and promoting eco-tourism in a way that is focussed on achieving certain wetland management outcomes.

At sites of particular conservation significance, the need for publicly provided infrastructure may become especially important, given the need to mitigate against damage from increased tourist loads. In some cases, private investment may be warranted where there is sufficient tourist demand, however this is sometimes unlikely in more remote areas. That is, it is important to ensure that public investment in this area is not simply displacing private investment. Therefore this incentive needs to be focussed on providing a necessary level of public infrastructure to help boost private investment but no more. This incentive measure is not aimed at “picking winners” in the form of subsidising specific eco-tourism ventures. Rather it is aimed at providing a commercial environment in which private businesses can thrive and so protect wetlands.

**Recommendations:**

1. The inclusion of wetland promotions in tourism literature at local/regional, State/Territory and national levels warrants further promotion. For example, Australia's Ramsar sites are promoted little as tourism destinations (with minor exceptions). The inclusion of such promotional material needs to promote the key environmental and social positives from sustainable wetland management and eco-tourism.
2. Governments at all levels are also urged to consider their opportunities and options for facilitating the development of wetlands based tourism on private lands. This may include an assessment of the likely private investment in infrastructure, and the levels of public investment needed to encourage this investment.

## **Case study #4:**

### **Banrock Station wines and caring for wetlands**

In 1995 The BRL Hardy Wine Company took the decision to support wetland conservation and wise use, both in Australia and internationally, initially through the financial support of wetland restoration activities by the non-governmental organization Wetland Care Australia, and secondly through the marketing and sales of its Banrock Station wine label. This coincided with the decision to invest resources toward the rehabilitation of the Banrock Station Wetland Complex itself which adjoins the area that acts as the primary source of grapes used to produce the Banrock Station wines in south-eastern Australia.

The initiative directs a fixed percentage of its Banrock Station Wine sales to wetland conservation activities across Australia, and through partnership arrangements in Canada, the USA, the United Kingdom, the Netherlands, Finland, Sweden and New Zealand.

Within Australia, Banrock Station sponsorships have been made to Landcare Australia and Wetland Care Australia to enable community-initiated restoration of wetlands in South Australia, Western Australia, Queensland, Victoria, and New South Wales.

Today there are approximately 30 million bottles of wine produced annually and each bottle carries an important message about the importance of wetland conservation and the role that Banrock Station wines is playing in supporting this cause.

#### **Banrock Station Wine and Wetland Complex**

Another important dimension to the Banrock Station initiative has been the rehabilitation of the wetlands which form part of the vineyard property itself. Through the involvement of Wetland Care Australia, and local volunteers this now stands as a model for the Ramsar Convention's wise use principle (see Information box about the Ramsar Convention)

The Banrock Station Wetland Complex today operates as a fully integrated model for ecologically sustainable development. The floodplain itself comprises the 'core area' and is adjoined by the 'buffer area' of box and mallee woodland, which in turn adjoins the commercial grape growing operations. These grape growing operations on the higher slopes around the floodplain are managed according to stringent environmental conditions.

In 1992 the current owners in partnership with Wetland Care Australia installed flow control gates on the wetland and began to reinstate semi-natural wetting and drying of the floodplain. This same action allowed the numbers of introduced European carp to be reduced significantly. Coincident with these actions, sheep were removed and the rabbit population was devastated by the release of a control virus. The rehabilitation of the site had commenced and today it is a far cry from the severely degraded landscape of just 10 years ago.

Also found within the wine growing zone is the Wine and Wetland Centre which is designed to promote both an appreciation of the wetlands, and ecologically sustainable land use practices, but also for commercial sales of wines. This facility provides information panels describing the importance of the wetland, its rehabilitation and the overall ethos for the integrated management of the winegrowing areas, the mallee 'buffer' zone and the core wetland ecosystem. The visitor information and wine tasting center has approximately 70,000 visitors annually.

The recently installed walking trails and boardwalks around the wetland allow visitors to get close to, but not disturb the wetland environment. These walks have information and education boards and shelters that explain the importance of the wetland, and how the site has been rehabilitated. They emphasize the principles and approaches to ecologically sustainable development – wise use. Approximately 20,000 walkers will experience the trails in the first 12 months since their opening.

## 8. RATE REBATES/CONCESSIONS

**Jurisdiction:** Local/Regional/State/Territory

**Mode of operation:** Induce

**Brief description of the incentive and how it works:**

Wetland owners that conserve their wetlands receive reduced government rates and charges.

Landowners in many parts of Australia are levied land management rates by catchment management boards or rural lands protection boards in addition to local government rates. These rates are generally relatively small in comparison to other costs of owning and conserving natural areas such as wetlands, however an important signal of the importance of conserving wetlands can be achieved by extending rate exemptions or rebates to these taxes.

**Examples:**

- Currently available in differing guises in over 24 council areas (Bateson 2001). Available on all Heritage Agreement areas in South Australia and all National Parks and Wildlife Service Conservation Covenants in NSW.
- Can be coupled with rezoning to enhance long-term protection, as is now available in Cairns City Council.
- Catchment management board levies are applicable in many parts of South Australia while Rural Lands Protection Boards levies are payable in rural New South Wales.
- See also Case study #5

**Major stakeholders:**

- Local, State/Territory governments
- Rate levying organisations in addition to local government
- Landowners

**Evaluation:**

**Ecological efficiency:**

- ❑ Rate rebates are generally targeted towards protection or rehabilitation of native vegetation. Hence a broad range of wetlands would be eligible, particularly if such rebates were specifically targeted towards high value wetlands.
- ❑ Scheme is voluntary.

**Economic efficiency:**

- ❑ Rate rebates are relatively low-cost but deliver a correspondingly low incentive to produce benefits.
- ❑ Reduces costs of wetland conservation minimally but contributes an additional signal about their value to society.
- ❑ Clear and simple eligibility criteria minimise administrative costs.
- ❑ Rate concessions coupled with rezoning is likely to be efficient where the scheme enhances protection desires of existing landowners.
- ❑ Administrative costs are largely one-off but some policing costs remain into the future.
- ❑ Additional ongoing administrative costs arise where conservation is linked to a lower rating value due to special zones.

**Social impacts:**

- ❑ Under current rate rebate schemes wetland owners gain but are usually required to give up extractive uses.
- ❑ The cost of the rate rebate is spread across the wider community.

- ❑ Zoning rebate schemes offer the potential for a win-win whereby wetland owners gain development rights and the community ensures ongoing conservation of wetlands with little monetary costs. However, the ongoing costs from any link to reduced rates is an ongoing redistribution to wetland owners.
- ❑ In terms of catchment levies or similar, there is very little social impact because of the relatively small amounts that are levied by such bodies. As a result there would be a small transfer from the wider community to the recipients of a rebate or exemption.

**Flexibility:**

- ❑ Rate rebates are generally not flexible as they deliver a fixed cost reduction that does not vary according to demand.
- ❑ Degree of innovation possible is determined by the eligibility criteria. However, careful design of regulation can allow for innovative conservation proposals to succeed.
- ❑ Signal may act to leverage increased private contributions to wetlands management.

**Accountability:**

- ❑ Compliance requirements vary according to the eligibility requirements.
- ❑ Cross compliance measures may reduce the costs of policing rate rebates alone.
- ❑ Depends on the transparency of council planning processes.
- ❑ Caution should be exercised to ensure accountability arrangements do not impose costs in excess of the rebate on landowners.

**Community involvement:**

- ❑ Unlikely to be significant community input except in some aspects of design of the underlying regulations.

**Comments:**

The issue of rate rebates generally has been studied by Carl Binning and Mike Young in *Conservation Hindered*, published in 1999 by Environment Australia. This report was important in firmly entrenching this option on the conservation agenda. It was however, unable to be entirely rigorous in its methods of determining the potential costs of such a scheme. It is an opportune time for the conclusions of *Conservation Hindered* to be revisited, and to determine progress made in implementing the recommendations from that report. Binning and Young strongly support the concept of rate rebates as signals and incentives to landowners of the importance of conservation management but did not quantify the scale of costs to local government.

A major issue is how local councils are able to cover any losses in revenue stream, and the capacity of different councils with quite different rate bases to implement rate rebate changes. In the case of poorer councils, Commonwealth and State/Territory support for rebates may be necessary, at least for an interim period.

From a wetland conservation point of view, there is probably little modification required to ensure wetlands are covered by a rate rebate, as any other parcel of land managed for conservation. The difficulty is in the case of a wetland being managed in accordance with principles of “wise use”. While the wetland is generating an income, it is unlikely a council will be willing to grant a rate rebate.

For catchment and similar bodies, it is important to ensure that rebate reductions do not unduly affect the ability of the levying organisations to carry out their activities. This may imply State/Territory or Commonwealth Government support, and thus contribute to cost-sharing by the broader public to wetland conservation.

A major difficulty in implementing this incentive relates to the means of targeting it specifically on wetland management. Such an issue is relevant to several other alternatives as well, so a

general approach to solving this problem could be beneficial in developing a suite of incentive options.

**Recommendations:**

1. Local and State/Territory Governments, with support from the Commonwealth Government, are urged to revisit the conclusions of *Conservation Hindered* by Carl Binning and Mike Young with a view to determining progress made in implementing its recommendations, and, if indicated mobilize further investments in rate rebating approaches for nature conservation.
2. Further, a Commonwealth and State/Territory supported system needs to be investigated to support under-resourced councils to manage rate decreases associated with such schemes.
3. Local governments, with Commonwealth and State/Territory Government support, need to establish criteria for identifying wetlands of highest priority for rate rebating schemes (see incentive 5 above).
4. Commonwealth and State/Territory governments are urged to consider extending rate rebates or exemptions to all other local and regional taxes where the primary land use is nature conservation, or there are broader river 'health' and similar issues at stake.

## **Case study #5:**

### **Conservation Area Rate Rebates in Cooloola Shire, Queensland**

The Conservation Area Rate Rebate scheme offers eligible landowners, including wetland owners, a rebate on their local government rates. The scheme is currently in a three-year trial phase.

#### ***Selection Criteria:***

In order to receive a rate rebate in the Cooloola Shire, wetlands must meet the selection criteria identified for Nature Conservation Areas. Priority areas include riparian ecosystems and *Melaleuca* wetlands.

#### ***Wetland owner requirements:***

The wetland owner must be willing to enter into a Conservation Agreement with the Council over the property or the wetland. The Conservation Agreement contains provision relating to monitoring and repayment of discounts where the agreement is not honoured.

#### ***Scale of incentives:***

Incentives have initially been offered for a three-year trial period. Rate rebates are related to the size of the property and the conservation score under the selection criteria. In summary the maximum rate rebates are as follows:

- Less than 5 Ha: 50% of the general rate, or maximum \$300 per annum;
- 5-10 Ha: 50% of the general rate, or maximum \$500 per annum;
- 10-20 Ha: 50% of the general rate, or maximum \$750 per annum; and,
- More than 20 Ha: 50% of the general rate, or maximum \$1,000 per annum.

#### ***Future landuse constraints:***

The Conservation Agreement will restrict some future land-uses for the duration of the agreement.

#### ***Source:***

Cooloola Conservation Strategy – Rates Relief Scheme Information Sheet 8

## 9. BONUS DEVELOPMENT RIGHTS

**Jurisdiction:** Local/regional

**Mode of Operation:** Induce

### **Brief description of the incentive and how it works:**

Landowners who are considering developing or subdividing land that includes important natural areas are encouraged to design the proposed development to protect these areas. In return for protecting the natural areas they are allowed more intensive use of other areas or other concessions to minimum requirements.

### **Examples:**

- It is understood to be only currently available in the Johnstone Shire of Queensland where landowners may be eligible for additional development rights (subdivisions or other) in return for protecting certain high value areas.

### **Major stakeholders:**

- Local government
- State/Territory government (in some cases)
- Landowners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Scheme is voluntary.
- ❑ Targetting such a scheme at wetlands may increase achievement of wetland management goals and adoption of wetland friendly development practices. However, the area subject to such threats as a proportion of all wetlands is likely to be small.
- ❑ May deliver important wetland conservation goals in wetlands near new urban and peri-urban developments.

#### **Economic efficiency:**

- ❑ Efficiency depends on the costs imposed on the rest of the community by the exchange of bonus development rights for wetlands conservation (the determination of the "exchange rate"). If the "exchange rate" is set appropriately, the incentive can be efficient.
- ❑ Clear and simple eligibility requirements are the key to the administrative costs of such a program.
- ❑ Operational costs are expected to be low in addition to existing development application costs.

#### **Social impacts:**

- ❑ Bonus development rights schemes offer the potential for a win-win whereby wetland owners gain development rights and the community ensures ongoing conservation of wetlands with little monetary costs.
- ❑ There is potential for negative development impacts to be borne by the community under poorly designed programs.

#### **Flexibility:**

- ❑ The rigid regulatory framework required for such a scheme implies a lack of flexibility. However, careful design of regulations can allow for innovative conservation proposals to succeed.

#### **Accountability:**

- ❑ Depends on the transparency of planning authorisation processes.

**Community involvement:**

- Extent of community input depends on the access to the planning process that would grant the bonus development rights. Schemes, which are based on the concept of offsetting one site with a set of values with another where those values are different or need to be created, may be controversial. It requires significant community input, and it needs to be undertaken with caution, and with monitoring to ensure that ecological values are not being eroded.

**Comments:**

As this scheme is not largely tested in Australia, and overseas experience in this area provides mixed indications, extension of such a scheme needs to proceed with caution. It is important to fully investigate the Johnson Shire scheme to determine the ecological implications. It would also be necessary to develop trials of further schemes before moving to full scale implementation of such an incentive.

**Recommendation:**

1. Bonus development rights schemes operating as an incentive measure in Australia and elsewhere need to be carefully reviewed, and other trials possibly established to further investigate the costs and benefits of such schemes.

## 10. DIRECT GRANTS

**Jurisdiction:** All - Local/regional up to Commonwealth      **Mode of operation:** Induce

### **Brief description of the incentive and how it works:**

Grants are available to landowners to assist with the cost of rehabilitating or managing natural resources and habitats. Incentive payments range from relatively minor grants of materials through to payment of the full cost of changing management (but rarely for ongoing management costs). In most cases grants must be applied for in a competitive application process. Grants are most commonly available to assist with fencing, revegetation, earthworks and other structures and weed or pest control. These schemes may require recipients to sign voluntary conservation agreements for a minimum period of time to enhance accountability and ensure a return on investment.

### **Examples:**

- Capital grants are available in all States/Territories under the Natural Heritage Trust. The relative priority for wetland projects and hence availability for wetland-related projects differs according to the relative allocations and goals of the programs. Grants specifically targeted towards wetlands are available under the National Wetlands Program and Murray-Darling 2001, and to a lesser extent, the National Rivercare Program, Fish Rehab and some others. A significant proportion of these grants have been directed to public rather than private lands.
- Non-NHT capital grants are available in some form in most States/Territories. The relative priority to wetland projects and hence availability for wetlands differs according to differing priorities in each jurisdiction. Grants specifically targeted towards wetlands are available in NSW (SWAG grants).
- At the local level, capital grants are available in at least 22 council areas across Australia (Bateson 2001). An example is the Shire of Denmark (Western Australia) grants for creekline fencing.

### **Major stakeholders:**

- All Governments
- NGOs
- Landowners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Direct payments can be highly targeted towards conservation goals that may or may not be wetland management goals
- ❑ The limit to ecological efficiency is likely to be the scale and coverage of incentives that are offered.
- ❑ Higher incentives targeted at wetlands mean a greater likelihood of achieving the goals. Application for funding remains voluntary.

#### **Economic efficiency:**

- ❑ Direct grants may provide significant cash inputs that must be considered against the benefits they generate. Hence, such programs require more significant information about the level and distribution of community benefits.
- ❑ One way this has been achieved under the NHT has been by requiring matching contributions by proponents (sometimes including other levels of government).

Without information about the level and distribution of community benefits it is difficult to assess the economic efficiency of such programs.

- ❑ Increased complexity in grant programs means that administrative costs of allocation and monitoring (for government, NGOs and wetland owners) are also increasing.
- ❑ There are significant costs involved in raising and administering taxation systems that should also be taken into account.

**Social impacts:**

- ❑ Direct grants are financial redistributions from taxpayers to wetland owners
- ❑ Wetland owners benefit from the cash injection but may be (but not necessarily) required to give up a stream of future extractive use benefits.
- ❑ Taxpayers receive a stream of future wetland benefits.
- ❑ The financial redistribution is likely to be from metropolitan areas to rural and semi-rural landowners.
- ❑ Depending on the size of the coerced transfer there may be political unease and difficulty in sustaining it long-term.

**Flexibility:**

- ❑ Grants incentive schemes are relatively easy to re-target over time but require information about changing community preferences. They do not automatically adjust to changing preferences. This information is relatively expensive for government to acquire and assess. Hence grants programs are relatively inflexible.
- ❑ Caution should be exercised that grants are not overly prescriptive in application and will encourage innovative management. That is, grants should be dependent on achieving healthy wetlands rather than on specifying a particular management regime that must be followed. One problem common to grants and regulation, is that it may prescribe an “input” or a “technology”. This can often be outdated and impose solutions which are counterproductive the desired outcomes, or simply more expensive than a minimum efficient strategy.
- ❑ Grants schemes have a relatively high potential to attract direct and ongoing contributions from the private sector and to a lesser extent the government sector.

**Accountability:**

- ❑ Greater transfer of funds requires more extensive auditing requirements for the community to be sure that incentive measures are being used effectively.
- ❑ Ongoing monitoring (and hence ongoing cost) is required to assess the benefits of changed wetland management.
- ❑ Cross compliance measures and legal tools such as conservation covenants and voluntary conservation agreements are often used to reduce accountability costs but at the (the potentially prohibitive) cost of increasing the landowner contribution. These mechanisms are also used as tools to ensure that a return on government investment is received.
- ❑ The accountability of the NHT program has been criticised by the Auditor-General on several fronts, mainly relating to measurement of outcomes and accounting for spending of contributions.

**Community involvement:**

- ❑ Community involvement can be increased by requiring community participation or contributions (matching in the case of NHT) to applications. However, such a requirement may complicate applications and reduce landholder interest.
- ❑ Some State/Territory grants (such as those from NSW SWAG) are only available to community groups but these groups may then work on private lands.

**Comments:**

Grants are in many ways a traditional approach to promoting conservation and have an important role in trying to stimulate community activity in wetland conservation. They do

however incur significant administrative costs that drain the resources available for conservation. Hence, it is important to minimise these costs and consider the trade-off between these costs and the inefficiencies of market mechanisms.

**Recommendations:**

1. The lessons learnt from assessing the effectiveness of grant schemes in the past need to be clearly outlined and acted on in any continuation or expansion.
2. The targeting of grants needs to involve an assessment of the benefits generated against the costs involved. This will ensure that the best value for money is achieved. The targeting process can be coupled with Incentive 5 – ‘recognition of important wetlands’ – and Incentive 12 – ‘ongoing management payments’ to ensure efficiency.
3. See below also in relation to devolved grant schemes.

## 11. DEVOLVED GRANT SCHEMES

**Jurisdiction:** Commonwealth Government

**Mode of operation:** Induce

**Brief description of the incentive and how it works:**

Devolved grants are very similar to the direct grants discussed in Incentive 10. Landowners apply for assistance to manage their resources in a competitive application process. The application and monitoring processes are managed by non-government organisations and in some cases private corporations.

**Examples:**

- Grants are available in all States/Territories but may vary according to the ability of the granting organisation to assess the applications. The programs are partly funded by NHT funds and partly by industry donations (see below). The relative priority given to wetlands projects differs according to the granting organisation.
- Grants specifically targeted towards wetlands are available under the 'Wetland Repair Project' managed by Wetland Care Australia, the 'Revive our Wetlands' program operated by Conservation Volunteers Australia for BHP Billiton and Greening Australia's remnant vegetation fencing programs.
- See Case studies #6 and #7.

**Major stakeholders:**

- NGOs
- Government contributors
- Industry contributors
- Recipient landowners and others

**Evaluation:**

**Ecological efficiency:**

- ❑ Direct payments can be highly targeted towards conservation goals that may or may not be wetland management goals.
- ❑ The limit to ecological efficiency is likely to be the scale and coverage of incentives that are offered.
- ❑ Higher incentives targeted at wetland management goals mean a greater chance of achieving these goals.
- ❑ Application for assistance is voluntary.

**Economic efficiency:**

- ❑ Direct grants may provide significant cash inputs that must be considered against the benefits they generate. Hence, such programs require more significant information about the level and distribution of community benefits. This can be achieved in part by devolving the grants program to groups with a strong presence in the community and hence greater ability to assess community demands.
- ❑ Without information about the level and distribution of community benefits it is difficult to assess the economic efficiency of such programs.
- ❑ The administrative financial costs of allocation are also minimised via use of private sector structures and extensive use of volunteers.
- ❑ Government contributions may be multiplied by community and industry contributions and use of volunteer skills to leverage the cost of materials.

**Social impacts:**

- ❑ Direct grants are financial redistributions from industry, donors or taxpayers (depending on the source of funds) to wetland owners.
- ❑ Wetland owners benefit from the cash injection but may be required to give up a stream of future benefits.
- ❑ The wider community receives a stream of future wetland benefits.
- ❑ The redistribution is likely to be from metropolitan areas to rural landowners.

**Flexibility:**

- ❑ Devolved grants incentive schemes are relatively easy to re-target over time but to do so requires information about changing community preferences - they do not automatically adjust to changing preferences. This information is relatively expensive for government to acquire, but less expensive for non-government organisations who are able to assess community demands via the level of community contributions and involvement in different projects may react more quickly than governments to re-target such schemes.
- ❑ Grants are also less likely to be overly prescriptive due to innovative management inputs derived from the community involvement.
- ❑ Grants schemes have a high potential to attract direct and ongoing contributions from the private sector and to a lesser extent the government sector, thus have a strong multiplier effect.

**Accountability:**

- ❑ Where transfer of government funds occurs it may require more extensive auditing requirements for the community to be sure that incentive measures are being used effectively. The complexity of auditing is increased by the additional layers of organisation involved.
- ❑ Devolving grants to non-government organisations without a large administrative resource may complicate auditing and accountability and create undue pressure on the resources of NGOs (see Incentive 4 – Capacity Building).
- ❑ Ongoing monitoring (and hence ongoing costs) are required to assess the benefits of changed wetland management.

**Community involvement:**

- ❑ Community involvement is implicit by using community-based non-government organisations to deliver the wetland management services.
- ❑ Many grants are also only available to community groups.
- ❑ These groups sometimes use these grants to promote or subsidise onground works on private lands (an explicit community/private partnership that is similar in intent to a devolved grant scheme).
- ❑ The involvement of non-government groups may also reduce landholder's perceptions of any threat to their independence.

**Comments:**

Devolved grant schemes offer significant advantages over direct grants in that they have greater community involvement, are likely to be more cost effective and offer greater flexibility. A danger is that governments may impose accountability standards that require the administering NGO to replicate the bureaucratic structures (and hence costs) of the public service.

**Recommendations:**

1. In its ongoing Natural Heritage Trust programs, the Commonwealth is urged to consider a continuation and expansion of devolved grant schemes for a range of wetlands-related activities. Such devolution is considered cost-effective with the added benefit of suitable NGOs being capable of using government funds to leverage

resources from the business sector and individual donors.

2. Government should continue to seek innovative ways to monitor the performance of devolved grant schemes but resist applying their own internal administrative standards as this could erode the cost-effective operation of the schemes. This may require coupling with Incentive 4 – ‘Capacity building’.
3. The targeting of grants needs to involve an assessment of the benefits generated against the costs involved. This will ensure that the best value for money is achieved. The targeting process can be coupled with Incentive 5 – ‘Recognition of important wetlands’ – and Incentive 12 – ‘Ongoing management payments’ to ensure efficiency.
4. Priority should go to targeting the payment of grants to leverage on private donations and sponsorships by offering dollar for dollar arrangements or similar co-payment schemes to assist in targeting wetland protection sites that are valued highly by communities.

## **Case study #6:**

### **On-ground assistance from Conservation Volunteers Australia**

Conservation Volunteers Australia (CVA) is a national community based, not for profit, non-government organisation. It works with land management agencies through the co-ordination and supervision of teams of enthusiastic volunteers to help them carry out priority environmental projects. CVA involves the community in “hands on” conservation projects in urban, regional and remote Australia providing extensive positive environmental outcomes. Projects range from planting; seed collection; endangered species protection; weed control; flora and fauna surveys; walking trail construction; fencing and basic environmental monitoring.

CVA volunteer teams are funded by either a fee for service from landholders or corporate sponsorship. In addition to these teams CVA also manage two major Government programs Green Corps (Young Australians for the Environment for 17-20yr olds) and Green Reserve for 35-60 year olds, providing a much needed resource to all land managers.

#### ***Eligibility for CVA assistance:***

- The proposed actions must be seen to be responding to immediate threats to the site and have a sound environmental basis.
- There has to be clear indications that the involvement of the CVA team will help build local capacity and commitment to long-term management.
- Projects must also include monitoring activities to show how the works done help improve the condition of the site, in both the short and longer terms.

#### ***Scale of incentive:***

Most CVA project teams work on site for periods of 5 days or multiples thereof, or on a regular weekend basis depending on the scale of works being undertaken and the location of the site.

#### ***Landowners responsibilities:***

CVA assistance for any projects is subject to full and active support from you the land manager and you need to understand and acknowledge ultimate responsibility for the project. The role of the CVA team leader is to supervise the volunteers, ensure their safety and welfare whilst achieving the project goals.

The land manager remains responsible for all other aspects of the project, for example sourcing materials, appropriate technical advice and demonstration of on-ground techniques, along with post project maintenance and monitoring of results from the works carried out. The land manager also needs to supply suitable accommodation for the team whilst on site, such as shearers’ quarters, farm cottage, cabins, caravan parks, community halls etc

## **Case study #7:**

### **Wetland Care Australia's *Wetland Repair Project***

The *Wetland Repair Project* (formerly the National Living Wetlands Project) is funded by a grant from the National Wetlands Program of the Commonwealth's National Heritage Trust as well as corporate sponsorship. The funds are designed to assist with wetland rehabilitation.

#### ***Eligible projects:***

Funding is provided in two categories, namely; to finalise action plans and start implementation, and for specific on-ground works.

#### ***Selection criteria:***

Six criteria are used to select projects eligible for support from the *Wetland Repair Project*. They assess whether the project is:

1. a priority in regional natural resource management planning;
2. has the potential for education and community awareness raising;
3. involves all relevant stakeholders with a minimum of one landholder and one community group;
4. has the potential for visible action to address issues on the ground;
5. develops, or completes, an integrated wetland management plan; and,
6. has the demonstrated support of the local or regional community.

It is also desirable that wetlands are listed, or may be listed in the future, in *A Directory of Important Wetlands in Australia*.

#### ***Wetland owner requirements:***

Wetlands are to be managed according to the management plan that has been prepared as part of the application process. The management plan may (or may not) restrict future management options in wetlands. The requirement for demonstrated support of the local or regional community and stakeholder involvement requires ongoing consultation with the stakeholders. There is no requirement for a permanently binding change to wetland management practices, but inclusion of permanent protection in the management plan is likely to strengthen funding applications.

#### ***Scale of incentives:***

Although there is no specified maximum, the scale of incentives available depends on how well the project meets the selection criteria.

## 12.

## ONGOING MANAGEMENT PAYMENTS

**Jurisdiction:** State/Territory Governments

**Mode of operation:** Induce

**Brief description of the incentive and how it works:**

Landowners receive an ongoing payment to manage their land according to an agreed management plan. The management plan specifies the performance measures that will be used to assess management. The land management is expected to generate benefits to the wider community that exceed the costs of the ongoing management payments.

**Examples:**

- Trial areas in Victoria through the Bush Tender program (see Case study #8), under which landowners nominate the conservation management actions they will perform and the cost of these actions. These bids are then assessed against an index of the benefits generated to select successful bids.
- The Liverpool Plains Land Management Committee and WWF Australia are trialling a conservation auction of this type in the Liverpool Plains Catchment of NSW, with the benefits index focussed on biodiversity and salinity outcomes.

**Major stakeholders:**

- Government
- Landowners
- NGOs

**Evaluation:**

**Ecological efficiency:**

- ❑ Currently targeted towards management of 'bush' on private land rather than wetlands.
- ❑ The degree of intersection between 'bush' and wetlands determines the degree to which wetland management goals are addressed.
- ❑ Currently the Victorian scheme referred to above is a 3 year trial and participation is voluntary. Hence, high value wetland areas may not be offered up for protection.

**Economic efficiency:**

- ❑ Costs are periodic payments from government to landowners in return for their services under a three year management agreement.
- ❑ Benefits are due to the management actions contracted through the agreement.
- ❑ Administrative costs of monitoring are likely to be relatively high (at least annual assessments) while operational costs are determined by participants bids.
- ❑ The auction system ensures that the financial costs of securing wetland protection benefits are the lowest available. The system ensures “cost-effectiveness” and is therefore highly suited for introduction in conjunction with other grant systems.

**Social impacts:**

- ❑ The Bush Tender trial is an ongoing (at least three years) transfer from taxpayers to landowners in return for specified management and hence outputs.
- ❑ The transfer is likely to be largely from metropolitan areas to rural Australia (depending on land ownership demographics).

**Flexibility:**

- ❑ As for grants schemes.

**Accountability:**

- ❑ Ongoing agreements on management require ongoing monitoring and an ongoing paper-tail. Hence, the costs of achieving accountability may be higher.

**Community involvement:**

- ❑ No specific community involvement in the trial and it is not likely that community involvement would be large unless community groups participate in organising applications.
- ❑ In the case of the Liverpool Plains Trial in NSW, the community is actively represented on the Liverpool Plains Land Management Committee. This committee represents 47 Landcare groups, which in turn comprise about a third of the landholders in the area. It has been extremely important to engage those landholders in all aspects of the approach, from the development of the appropriate technical options and land use changes that could be made, through to the types of outcomes desired. Further, the outcomes of the trial are intended to fit with the overall catchment planning of the area, which is also heavily dependent on community involvement.

**Comments:**

These incentive measures are currently popular because they are a more constructive alternative to ‘compensation’ as a means of changing land uses. Compensation is seen as a negative approach to restricting the rights of landholders. Ongoing payments are seen as a positive approach to sharing costs associated with the public and private benefits of conservation. The method has also been criticised as it may mean voluntary action is not taken while landholders delay decisions and action with the hope of receiving payments in the future. The chief strength of the measures is their capacity to secure wetland protection benefits at the lowest cost.

**Recommendation:**

1. The incentive option of ‘bush tenders’ (conservation auctions), and stewardship payments warrants further consideration in Australia. The Commonwealth Government is urged to evaluate the current trials of such schemes in Australia, and look to develop further trials around the country. In this context, such trials should focus on freshwater wetlands of recognised importance (see incentive 5 above) at the catchment, national or international levels. Depending on the success of the trials, a national approach to conservation auctions/tenders should be considered.

## **Case study #8:**

### **Bush Tender trial in Victoria**

Bush Tender is a trial scheme introduced by the Victorian Government to pay landholders for services that improve the management of bush, (which may include wetlands) on private land.

#### ***Selection requirements:***

Landholders in the trial areas who own native vegetation (including wetlands) are eligible to submit bids specifying the services they are prepared to offer to improve their native vegetation and the price they wish to receive for these services.

#### ***Wetland owner requirements:***

Bush Tender field officers will conduct a site visit with all landholders expressing interest in the program to discuss management options. An agreed management plan is prepared by the landholder in conjunction with the field officer. The management plan identifies the actions the landowner proposes to undertake. Successful applicants will be required to sign agreements based on their submitted management plan and report according to these plans. The actions agreed in the management plan may restrict future landuses for the duration of the management agreement.

#### ***Selection criteria:***

The site visit will assess the significance and quality of the native vegetation. The landholder bid will be assessed objectively on the basis of:

- current conservation value of the site;
- amount of service offered; and,
- cost.

There is a limited amount of money available and funds will be allocated on the above criteria according to the 'best value for money'.

#### ***Scale of incentives:***

The Bush Tender program uses an 'auction' mechanism whereby the landowner submits a bid to provide services that is ranked against other bids. Thus there is no maximum bid amount, but larger bids are less likely to succeed. The bidding market can be expected to stabilise as information about management services and bids becomes known in the future. Successful bidders will receive periodic payments per their management agreement.

### 13. REMOVAL OF PERVERSE MANAGEMENT (NON-TAXATION) INCENTIVES

**Jurisdiction:** State/Territory Governments

**Mode of operation:** Induce

**Brief description of incentive and how it works:**

A number of restrictions on landuse (especially landuse on pastoral leases) impact on the incentives of land managers to manage their land for conservation. For example, owners of pastoral leases are generally subject to minimum stocking rates, may be required to 'improve' the productive capability of the land and may find it difficult to undertake a landuse other than pastoral production on the lease (in part due to native title considerations). These restrictions may limit the ability of landowners to manage their land for conservation purposes and reduce their incentive to diversify into enterprises that are more compatible with healthy wetlands. Subsidies that encourage the use of wetlands for extractive purposes are problematic in that their impacts on wetlands are "spillovers" or unintended consequences of the pursuit of other policy objectives. For instance, subsidies on irrigation water may have been aimed at securing regional development goals but have had the unintended consequence of wetland deterioration.

**Example:**

- Minimum stocking ratios and land improvement clauses on leases discourage conservation management.
- Undertaking eco-tourism enterprises on pastoral leases requires approval.
- There is also currently no potential to establish conservation covenants over pastoral leases (Productivity Commission 2001).
- The cost of irrigation water remains subsidised despite the ongoing COAG Water Reforms (see section 5) with consequent impacts for over-extraction.

**Major stakeholders:**

- State/Territory Governments
- Landowners

**Evaluation:**

**Ecological efficiency:**

- ❑ Not directly targeted towards wetland management goals but removal of threats to wetland management being achieved.

**Economic efficiency:**

- ❑ Very low cost to government.
- ❑ Removes legal obstacles to generation of benefits by private landholders/leaseholders.

**Social impacts:**

- ❑ Depends on the degree to which perverse incentives discourage conservation management.

**Flexibility:**

- ❑ Removing perverse incentives has the potential to increase the flexibility to respond to changes in community demands.
- ❑ They also have the potential to stimulate innovative management focusing on the outputs valued by society rather than the specified management or inputs and hence stimulate additional private sector contributions.

**Accountability:**

- ❑ No significant accountability issues arise. Accountability of other requirements is reduced.

**Community involvement:**

- ❑ Little scope for community involvement.

**Comments:**

While it may seem like a very logical thing to do, identification and removal of perverse incentives can be a very controversial and difficult exercise. This is because the incentives are not “perverse” to everyone in the community. They are likely to be regarded positively by the people in the community who benefit from them. This does not mean that they should not be removed. Their removal needs to be assessed in terms of the costs they impose relative to the benefits they provide and relative to the efficiency of alternative ways of providing these benefits. Where removal is in society’s best interests, it should be done with consultation and community involvement.

**Recommendation:**

1. Perverse landuse incentives (such as minimum stocking rate requirements on pastoral leases or subsidies on irrigation water which may be aimed at securing regional development goals) which are impacting on wetlands need to be assessed in all jurisdictions, and where they are found to be contrary to the best interests of society (in a triple bottom line sense), they should be removed as soon as possible.

## 14. REMOVAL OF PERVERSE TAX INCENTIVES

**Jurisdiction:** Commonwealth Government

**Mode of operation:** Induce

### **Brief description of incentive and how it works:**

The current structure of taxation creates a number of perverse incentives that impact on wetland management. These include specific tax deductions that may have perverse impacts and structural elements of the tax system. A third perverse incentive arises when property is purchased for the primary purpose of conservation. GST is then incurred on the sale price. This must be claimed back later as an input credit with potential cash flow implications (Productivity Commission 2001). Specific tax deductions that may create a disincentive to wetland owners relate to whether a business is conducted on the land. Where a business is conducted on rural land the costs of management activities can be deducted from income (including interest payments on the cost of purchasing the land). Where the primary purchase of the land is for conservation these deductions do not apply. Hence, there is a perverse incentive to manage the land as part of a business enterprise in order to attract favourable taxation status. Some specific tax deductions may also create perverse incentives to damage or destroy wetlands. In particular, the cost of water storage construction is tax deductible. However, the lowest cost site for water storage construction is often in wetlands, reducing or removing their conservation values.

### Examples:

- A conservation group or private individual may purchase a property (currently used for business purposes) primarily for the purposes of conservation. Inclusion of the GST in the initial purchase price may create significant cash flow problems while waiting for return of the GST.
- An individual purchases a property for the primary purpose of conservation. Interest on the cost of purchase and the costs of management are not tax deductible. A neighbouring property is managed in part to generate income (and in part for conservation) and expenses (including interest on the cost of purchase) are tax deductible.
- A landowner wishes to construct a water storage on their farm. The cost of construction is reduced by the value of the tax deduction despite it being built within a wetland, thus destroying many conservation attributes of the wetland.

### **Major stakeholders:**

- Commonwealth Government
- Landowners
- Conservation organisations

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Does not ensure wetland management goals are achieved so much as reduce the threats to achievement of wetland management goals. For example, precluding tax incentives for water storages constructed in wetlands would reduce the incentive to construct such storages in wetland areas.

#### **Economic efficiency:**

- ❑ Win-win incentive as it reduces the transfer from taxpayers to landowners from which reduced environmental benefits are the direct outcome.
- ❑ Where deductibility extensions result in costs to the government budget, an assessment of the benefits achieved relative to the costs would be necessary to determine the efficiency of the measures.

**Social impacts:**

- ❑ Reduced transfer from taxpayers to landowners where tax incentives are removed. This may result in a marginal transfer from rural areas to metropolitan areas.
- ❑ Increased transfer from taxpayers to landowners where deductibility provisions are extended to conservation uses and where transfers are GST exempt. This may result in a marginal transfer from metropolitan areas to rural areas.

**Flexibility:**

- ❑ Increases flexibility of wetland production by generating more accurate costs of alternative management strategies.
- ❑ Is likely to indirectly increase net private sector contributions to wetland management by reducing contributions to wetland destruction or alteration.

**Accountability:**

- ❑ Accountability may be difficult where specific exemptions are made to continuing incentives (for example, no tax break for water storage construction in wetlands).
- ❑ Accountability in other cases may be easier as an exemption may be removed.

**Community involvement:**

- ❑ Little opportunity for community involvement.

**Comments:**

The implications of allowing tax deductibility for expenses incurred in providing the public good benefits of wetland protection are wide ranging. The extent of the potential impact on government revenue has not been estimated. Whilst the fiscal impact is likely to be minor for wetland protection, if the precedent was followed in the private provision of other public goods – including the protection of other ecosystems – there may be significant negative effects on government revenue flows. A benefit cost assessment of this strategy is required to determine if it would result in a net benefit to society. Because the extension of tax deductibility cannot be readily targeted to wetlands of significance there is a possibility that the measure would not be cost effective.

**Recommendations:**

1. Where taxation incentives are operating to encourage wetland degradation or destruction, and are found to be contrary to the best interests of society (in a triple bottom line sense), they should be removed as soon as possible.
2. The Commonwealth Government is urged to extend tax deductibility to include costs incurred in the protection of wetlands against other income sources.
3. Purchases of property for specific wetland conservation purposes should be exempt from the Goods and Services Tax.

## 15. TAX INCENTIVES FOR WETLAND MANAGEMENT

**Jurisdiction:** Commonwealth Government

**Mode of Operation:** Induce

**Brief description of the incentive and how it works:**

The Commonwealth government offers a number of tax incentives designed to reduce the cost of Landcare-related expenditures to landowners who are also eligible primary producers. These incentives are usually applicable to wetland management on farms. Wetland owners are able to claim a deduction for works to control land degradation so long as its owner qualifies for primary producer status. The incentive is offered under Sections 75B and 75D of the *Income Taxation Assessment Act*. Eligible expenditures include eradication of animal pests, destruction of weeds, fencing for specified purposes, and tree and shrub establishment. The works must also be part of a farm management plan that has been approved by the relevant government authority (for example, State/Territory departments of agriculture). Other business-related expenditure is deductible under the normal provision for writing-off business expenditure. Businesses are also able to claim back the goods and services tax that they have paid on these inputs to their farming business.

**Examples:**

- Availability depends on tax status. Individuals managing a farm business are able to claim GST and deductions related to landcare works listed on an approved farm management plan.
- See Case study #9.

**Major stakeholders:**

- Commonwealth government
- Landowners

**Evaluation:**

**Ecological efficiency:**

- ❑ These taxation incentives seek to reduce the costs incurred in land management rather than directly achieve specified wetland management goals. Hence, achievement of wetland management goals cannot be assured.
- ❑ Not targeted at wetland management but at land degradation and natural resource management costs generally.
- ❑ Participation is voluntary.

**Economic efficiency:**

- ❑ The costs of tax incentives schemes to the wider community depends on the degree to which they can be targeted towards inputs to wetlands management and the degree of subsidisation they embody.
- ❑ Administrative costs involved by both farmers (in claiming the incentive) and by government (in monitoring incentives) may be high.
- ❑ The benefits to the community are indirect and relate to improved wetland management due to reduced management costs.

**Social impacts:**

- ❑ Tax incentives are a redistribution from taxpayers to wetland owners that last so long as the incentive remains in place. Hence, they are likely to transfer from metropolitan taxpayers to people in rural regions.
- ❑ Tax incentives have an added disadvantage of distorting the tax system to some degree.

**Flexibility:**

- ❑ Tax incentives, like other legislative responses such as vegetation clearance laws, are relatively rigid and inflexible once in place. At its worst, compliance requirements for tax incentives can impose rigid management requirements that reduce scope for innovation in management.
- ❑ Tax incentives require a contribution from the private sector in order to claim them and may have a significant multiplier effect on private spending as a result.

**Accountability:**

- ❑ Accountability is difficult due to the nature of the incentive.
- ❑ It is difficult to ensure that the expenses claimed are used for the purpose stated and that they are achieving the management goals intended.
- ❑ The main landowner accountability measure is cross compliance of the expenses claimed with actions listed in an approved farm management plan.

**Community ownership:**

- ❑ No opportunity for community involvement.

**Comments:**

If a business is recognised as a primary producer, expenditure on wetland protection will be deductible if it has been approved by the relevant government agency. However, the issue arises when a property is managed solely for conservation purposes or when the property does not qualify for primary producer status. It is important to ensure that those who are willing to undertake conservation are not penalised by a taxation system that would recognise as a deduction that same expenditure if incurred by a primary producer.

Tax deductibility is also of little relevance to a wetland owner whose taxable income is very low or negative. Tax rebates can be a useful incentive measure in such cases. However, the Commonwealth Government's tax rebate scheme for landcare expenditures (potentially including wetland protection) has now expired.

There have been recent amendments to the Taxation Act to recognise conservation covenants. This is one way in which the taxation incentives can be targeted on wetland management goals. However, it is important that the costs of managing conservation covenants are allowable deductions.

**Recommendation:**

1. The taxation system needs to provide further options for allowing deductions and/or rebates for wetland protection expenditures and conservation covenants (see 14. above in relation to GST).

## **Case study #9:**

### **Landcare tax incentives as applied to wetland revegetation**

Landcare tax incentives are designed to reduce the costs of landcare-related activities to primary producers and businesses on rural land, and thus to encourage landholders to invest in landcare as an integral part of operating their business. Landcare activities include wetland rehabilitation and management.

#### ***Eligible expenditure:***

Expenses specifically relating to a wetland revegetation project are fully tax deductible in the year in which they are incurred. The expenses could include any property planning specifically for the purposes of the revegetation project, tree planting and maintenance costs and fencing to exclude livestock. These activities must be included in an approved farm plan.

#### ***Reporting requirements:***

Wetland revegetation expenses that are deducted from taxable income or claimed as a rebate are subject to the same reporting and auditing requirements as other tax provisions.

#### ***Wetland owner eligibility:***

Only primary producers and businesses on rural land are eligible to claim a tax deduction for landcare-related operations.

#### ***Scale of incentives:***

Eligible primary producers and businesses have a choice between receiving the tax deduction as a deduction or a tax rebate of 34 cents in the dollar. The rebate is only available to producers with a taxable income of \$20,700 or less. The maximum rebate that can be claimed is \$1,700 per annum (on a maximum of \$5,000 expenditure). On the other hand, there is no limit on the size of the tax deduction for landcare works and expenditure in excess of \$5,000 can be claimed as a deduction. Hence, for a wetland owner who faces a marginal tax rate of 30 cents in the dollar (for example with a taxable income of \$40,000) who revegetates a wetland at a cost of \$7,000, the incentive provided by the tax deduction is \$2,100. This would reduce the costs of revegetation to \$4,900.

#### ***Source:***

*A guide to tax incentives for Landcare*, Australian Taxation Office (1999).

## 16. TAX INCENTIVES FOR NON-GOVERNMENT ORGANISATION

**Jurisdiction:** Commonwealth Government

**Mode of operation:** Induce

### **Brief description of the incentive and how it works:**

A wide range of donations to eligible conservation organisations can be deducted from income or business taxes as applicable. Eligible donations include money and real property such as land, shares, art works and other assets. The cost to individuals of donating to such organisations is reduced while the community benefits from their actions in enhancing nature conservation efforts.

### **Examples:**

- Availability depends on tax status of individuals and nature of contribution proposed. Organisations that benefit include Wetland Care Australia, Wetlands and Wildlife, WWF and Australian Bush Heritage.
- A landowner donates a conservation covenant that reduces their property value by a significant amount. The value of this donation is tax deductible and donation reduces future capital gains tax liability.
- A land owner sells a wetland to a conservation organisation at half the full market value. They are currently unable to deduct the loss made on the sale from tax.

### **Major stakeholders:**

- Commonwealth Government
- Eligible NGOs
- Donors

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ These taxation incentives seek to reduce the costs of contributing to non-government groups.
- ❑ They seek to increase the resources available to these groups to participate in achieving conservation management.
- ❑ Some groups focus on wetlands management, others focus on other areas.
- ❑ The incentive increases the capability of these groups to achieve wetland management goals but does not ensure they can be achieved.

#### **Economic efficiency:**

- ❑ The costs of tax incentives is dependent on the level of donations to conservation groups. In turn, this is dependent on the ability of these groups to solicit funds to achieve conservation outcomes desired by the community.
- ❑ The benefits are enhanced conservation outcomes to donors and the wider community.
- ❑ Administrative costs incurred by donors (in claiming the incentive) and by government (in monitoring incentives) are likely to be relatively low.
- ❑ Compliance requirements faced by conservation organisations seeking to receive donations are an important aspect of administrative costs.

#### **Social impacts:**

- ❑ Tax incentives are a redistribution from taxpayers to conservation organisations that last so long as the incentive remains in place.

- ❑ They are likely to transfer from metropolitan areas to rural regions assuming most donors live in metropolitan areas and a majority of expenditure takes place in rural areas.
- ❑ Tax incentives have a disadvantage of distorting the tax system. This means that the principle of equal taxes on equal income is broken and that eligible nature conservation organisations gain a competitive advantage in soliciting donations compared to non-eligible organisations.

**Flexibility:**

- ❑ Tax incentives, like other legislative responses such as vegetation clearance laws, are relatively rigid and inflexible once in place.
- ❑ At its worst, compliance requirements for tax incentives can impose rigid requirements on organisations that may reduce their ability to adapt to changes in consumer demands.
- ❑ Such donations are more likely to facilitate innovative wetlands management via entrepreneurial responses of non-government organisations to minimise costs and maximise achievement of objectives.
- ❑ Tax incentives may have a significant multiplier impact on private spending because they reduce the cost of the donation to the donee.

**Accountability:**

- ❑ Accountability is difficult due to the nature of the incentive. However, eligible non-government organisations are subject to company regulation and auditing requirements as are other private sector businesses. Hence, accountability is no different to other tax deductions.
- ❑ Cross compliance measures (such as an approved set of goals, articles of incorporation and reporting requirements) are commonly suggested ways of improving accountability.

**Community involvement:**

- ❑ Accredited conservation organisations are either community groups or groups with strong community linkages.
- ❑ Community involvement in all stages is important to obtaining donations. Hence, there is a high potential for community involvement.

**Comments:**

The taxation position of conservation organisations requires clarification. For example, membership subscriptions are currently deemed assessable for GST if they involve the provision of a product (a newsletter for example) whilst cash donations are not. Similarly, donations are clearly tax deductible whilst membership fees may not be. Membership is now discouraged by many groups who seek a pattern of regular donations instead. This can create difficulties as the success of organisations is often assessed in terms of membership numbers rather than supporter numbers or funding base. Lack of a membership base and associated member rights can also reduce accountability within non-government organisations.

**Recommendations:**

1. The Commonwealth Government is urged to allow membership dues of those non-government organisations promoting wetland conservation and wise use to be GST-free and tax deductible.
2. Further, to extend tax deductibility to 'bargain sales' of 'important' wetlands (see incentive 5 above) and ensure that property value losses due to covenanting are also tax deductible.
3. Also, the Commonwealth is urged to consider a co-payment arrangement to non-government organisations where a clear public benefits test is met.

4. The removal of the current inconsistencies which apply in the determination of which organisations qualify for tax deductible status is also warranted.

## 17. State/Territory government fee and tax breaks for conservation groups.

**Jurisdiction:** State/Territory Governments

**Mode of operation:** Induce

### **Brief description of incentive and how it works:**

Land management boundaries in Australia are largely based on historical divisions that took little or no account of natural resource boundaries. Hence, the appropriate management of different parts of a single property unit can differ dramatically, especially where important natural assets and agricultural lands are on the same unit. In some cases society may benefit from a realignment of ownership that facilitates specialist management of natural landscapes. However, a number of restrictions on development (that are not related to conservation) act as a significant disincentive to such divisions of property units.

A number of fees are payable to State or Territory governments on property transfers to non-government organisations. For example, donation or purchase of a property generally requires payment of title transfer fees and stamp duty. These costs increase the cost of purchase or transfer and reduce the resources available to the organisation for managing the resource. It may be possible to exempt conservation groups from stamp duty payable on sales to conservation groups and through revolving funds; or allow landowners reduced (no) fees for subdividing property titles to enhance conservation outcomes (via sale to a conservation organisation, revolving fund or with conservation covenant attached)

### **Examples:**

- A property owner may wish to sell or donate a significant area of wetland, primarily for the purpose of ongoing conservation. However, the landowner faces time and monetary costs associated with preparing and submitting a development application. The monetary costs include surveying the proposed title split, application fees at the local and State/Territory level and in some cases additional costs associated with notification of development application. A significant non-monetary cost is the time required to prepare, submit and track an application through a significant period of time.
- Stamp duty is waived on land purchases made by Wetlands and Wildlife by the SA Government and purchases by the Victorian Trust for Nature revolving fund (see Incentive 20)

➤ **See Case studies #10 and 11.**

### **Major stakeholders:**

- NGOs
- Landowners
- Government

### **Evaluation:**

#### **Ecological efficiency:**

- Caution must be exercised to ensure that the measure is appropriately targeted towards achieving wetland and other natural resource management goals.

#### **Economic efficiency:**

- Costs of changing ownership to achieve improved wetland management are reduced. Costs are born by tax payers while benefits are generated through wetlands changing ownership for protection purposes.

- ❑ Cost savings make additional resources available to conservation organisations for future management therefore increasing the likelihood of benefits into the future.
- ❑ It is important that non-monetary costs administrative costs are minimised, for example by streamlining application processes.

**Social impacts:**

- ❑ The cost savings are a redistribution from taxpayers to conservation oriented ownership.
- ❑ There may be a small financial redistribution from metropolitan areas to rural areas.

**Flexibility:**

- ❑ Reduced fees themselves are relatively rigid and inflexible as they are a legislated government incentive. However, the incentive requires extensive action by conservation groups to raise funds and compete with alternative uses in the market. Hence the overall impact is likely to be quite flexible.
- ❑ The incentive also enhances the effectiveness and hence possibility of private contributions to conservation groups by the wider community.

**Accountability:**

- ❑ Accountability requires that only groups generating public benefits be exempt from fees and hence the reporting mechanism needs to reflect this.
- ❑ Ongoing monitoring (and hence ongoing costs) are required to assess the benefits of changed wetland management.
- ❑ The relatively small number of conservation groups that are likely to take advantage of such tools will keep overall accountability costs low but caution should be exercised that costs to these organisations are minimised.

**Community involvement:**

- ❑ Enhances opportunity for community to be involved by reducing the costs of involvement.

**Comments:**

Fees and charges on changes in land ownership can be significant costs that hinder the transfer of property to groups that intend to manage wetlands for protection purposes. Reducing these “barriers” to exchange would enhance the market’s ability to allocate wetland resources to their highest valued uses. This is of particular importance in the operation of “revolving funds” that operate specifically to facilitate ownership change (see Incentive 20). In such cases – notably where covenants have been added to land and water titles to ensure wetland protection – exemption from taxes and charges should also be extended to individual purchasers as well as conservation groups.

Given that the development restrictions are in place for non-conservation reasons, it is important to understand what these reasons are, and how to change them without creating a further perverse problem. One objection to making changes for, say, conservation reasons is that it sets a precedent for other objectives, eg on social or welfare grounds. However this does not suggest that a change should not be made, if a review determines that the system is not undermined.

Recommendations:

1. State and Territory Governments are urged to exempt conservation organisations from the payment of taxes and charges levied on the transfer of land and water titles in relation to wetlands.
2. Further, to extend the exemption to include individuals when purchases of property are made through a revolving fund.

3. Exempt private landowners from fees and charges associated with splitting property titles where the purpose is to facilitate sale or donation to a private or public conservation body.
4. Review planning procedures to ensure disincentives (such as costs associated with preparing and submitting a development application) for moving to a conservation management land management regime are minimized.
5. Local, and State/Territory governments should ensure that the re-alignment of titles to facilitate ownership changes for conservation purposes are not classified as development applications and are exempted from bureaucratic burdens and financial penalties.

## **Case study #10:**

### **Purchase of Carnarvon Station by the Australian Bush Heritage Fund**

The Australian Bush Heritage Fund (Bush Heritage) is a national, independent, non-profit organisation committed to the protection of the Australian bush.

The mission of Bush Heritage is to identify, acquire and manage private land and water of outstanding natural significance and high biodiversity value. Bush Heritage focuses nationally on areas of threat, where there is an absence of alternative means of protection. Bush Heritage's goal is to acquire and manage reserves in perpetuity and to use diverse mechanisms to protect nature conservation values in the long-term.

Bush Heritage currently owns and manages 13 conservation reserves - four in Queensland, five in Tasmania, one in Western Australia, and three in NSW.

Bush Heritage purchased Carnarvon Station, a 59,000 hectare property in central Queensland in 2001. This represents the largest acquisition yet and its purchase was supported by over 2,370 (tax-deductible) donations and the support of the Commonwealth Government. Bush Heritage has allocated funds to manage the property in perpetuity.

#### ***Eligible wetlands:***

Bush Heritage seeks to manage intact ecosystems wherever possible. Wetlands may be acquired in their own right or as part of a larger intact ecosystem. However, only nationally significant wetlands are likely to be acquired because of Bush Heritage's focus on high conservation value intact ecosystems and the resource and cost implications of managing properties in perpetuity. Small conservation areas present particular management challenges, particularly if partly or wholly bordered by agricultural or residential land. Bush Heritage rarely chooses to acquire land of less than 10 hectares as a conservation reserve. A number of other public and private organisations also purchase land for conservation.

#### ***Costs of a wetland sale:***

In some cases, particularly where a covenant or like management mechanism is to be applied, the purchasing organisation may be able to reduce costs by having some, or all fees waived. For example, some sales to conservation organisations are exempt from stamp duty. These options should be explored, including with private advice and with the organisation concerned.

Where a partial property sale is being considered in order to acquire quite specific areas of land or water this may incur development application fees, costs of surveying new property boundaries and other costs.

#### ***Incentives for property sales:***

The major incentives impacting on the sale of properties to Bush Heritage and other like-groups are:

- Bush Heritage has Deductible Gift Recipient status from the Australian Tax Office, thus allowing for tax deductible gifts of property (including land and other assets valued at more than \$5000) and "five-year apportionment" of the tax write off.
- Bush Heritage's status in being on the Register of Environmental Organisations assists in making application for funding from the Commonwealth Government
- Bush Heritage's tax-exempt status.

A major incentive for a reduced value sale to an organisation like Bush Heritage is the security of ongoing protection and management provided by sale to Bush Heritage. The difference between a reduced value (or 'bargain' sale price) and the full value of a property is not currently tax deductible in Australia, however a bargain sale value may reduce Capital Gains Tax liability thus reducing the costs to the landowner.

## **Case study #11:**

### **Donation of a property to Wetlands and Wildlife**

Wetlands and Wildlife is a non-profit company that owns wetlands for the purpose of conservation. Wetlands and Wildlife is eligible to receive tax deductible donations of land and other assets.

#### ***Eligible wetlands:***

Wetlands and Wildlife's goal is management of wetlands in perpetuity. However, not all wetlands can be accepted because wetland management requires resources. For this reason all potential donations, or bequests, should be discussed with the organisation in advance.

#### ***Permanency of protection:***

Donation of property is permanent and irrevocable. Wetlands that are retained by Wetlands and Wildlife for conservation purposes will pass to an organisation with similar goals in the event of dissolution, thus ensuring ongoing protection.

#### ***Costs of donation:***

In donating a property, landowners should fully consider the financial implications to themselves and their dependents. Donation may also impose direct costs on the donor and recipient organisation. Partial property donation may incur development application fees, surveyor's charges and other costs to split the property. In some cases the recipient organisation may be able to have some or all fees waived, or obtain services at lower cost than the donor, thus reducing the costs of donation. These options should be explored with the organisation in advance. For example, donations of land to Wetlands and Wildlife are exempt from stamp duty.

#### ***Tax incentives for donation:***

The full value of any property donated (valued at more than \$5,000) to an eligible organisation such as Wetlands and Wildlife can be deducted from an individual's taxable income over up to 5 years. This means that the tax benefits are not lost when a donor's income in a single year is less than the value of the gift.

This is particularly important for donors who are asset rich but on low incomes. For example, a gift of land worth \$100,000 can be split into five deductions of \$20,000 and claimed over five subsequent years, allowing greater total tax deductions to be claimed.

## 18. Mitigation banking, biodiversity credits and other tradeable rights systems

**Jurisdiction:** State/Territory Governments  
Induce

**Mode of operation:**

### **Brief description of incentive and how it works:**

Under credit or tradeable rights schemes property rights are attached to aspects of the wetland that can then be leased or sold. Examples of potential credit schemes applicable to specific aspects of wetlands include bio-diversity (relating to the relative bio-logical diversity and importance of the wetland flora and fauna), carbon (relating to the storage of carbon in wetlands) and salinity (relating to the storage or discharge of salts from the wetland).

Wetland mitigation banking is a similar concept relating to the complete package of attributes of recreated or rehabilitated wetlands. In each case an appropriate unit of measurement of the credits that are generated from wetland conservation, recreation or rehabilitation must be decided upon. It is this measurement unit that enables comparison of credits from different wetland sites and determines the 'exchange rate' between sites. The rights associated with purchase or sale of these credits must also be defined. Definition of these rights are important in determining the use of the credits once purchased and what is being purchased. For example, the property rights define whether purchase of the carbon credits from rehabilitation of a wetland includes the salinity or bio-diversity credits as well (which could then potentially be onsold). Where these credits can be both bought and sold a market exists. In other circumstances only a single buyer (government) may exist that makes purchases on behalf of the wider community. (It should be noted that credit schemes do not need to be traded). The requirement to ensure credits are in place before "debit" generating activities are allowed does not require tradeability. Trading may facilitate such schemes, and bring a number of advantages and disadvantages to a credit scheme. For example, under an "offset scheme", a particular developer has the responsibility to generate appropriate credits, and this may be possible, whether a trading scheme is in place or not.

### **Examples:**

- See Case study #12

### **Major stakeholders:**

- Landowners
- Government
- Potential buyers

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Can ensure wetland management goals are achieved in total but not necessarily on the site of currently existing wetlands.
- ❑ A weakness of mitigation banking overseas has been loss of existing habitat and failed mitigation banks. This can be alleviated by requiring banks to only sell credits to wetlands already successfully created. However, long term success still has some risk attached. Similar risks are attached to other credit schemes.
- ❑ Biodiversity, Carbon, Salinity and other credit schemes would not be directly targeted towards wetlands. The impact of such schemes on wetland on wetlands conservation is determined by the cost-effectiveness of using wetlands to generate credits relative to other options.

**Economic efficiency:**

- ❑ Allows wetland resources that have very high values in extractive uses to be transferred without a net cost to the community providing the 'exchange rates' are appropriately determined.
- ❑ Cost of the mitigation activity is borne by the developer.
- ❑ Similarly, costs of other credit schemes are borne by the purchaser (tax payer or industry).
- ❑ The costs to tax payers are largely dependent on how the schemes are set up. Schemes with high cost or inefficient monitoring and enforcement of contracts to supply credits are less likely to be cost effective.
- ❑ The benefits to society are the increase in wetlands that is generated from the schemes.

**Social impacts:**

- ❑ The social efficiency of wetland mitigation banking depends on the effectiveness of the location and the wetland attributes exchanged. For example, if an estuarine wetland in a large city were replaced by an inland wetland there is likely to be a transfer away from city residents.
- ❑ Redistribution of wealth under credit schemes is highly dependent on how the schemes are set up. For example, a carbon credit scheme could see transfer of wealth from carbon generating industry to wetland owners and other landowners who generate carbon credits.

**Flexibility:**

- ❑ Mitigation banking allows changes in community demand for specific sets of wetland resources to be acted upon but not the aggregate level of wetland protection.
- ❑ Mitigation banking compels private sector contributions if wetland protection values are to be diminished at a site.
- ❑ The flexibility of mitigation banking and credit schemes is highly dependent on the rules that underlie them. Markets are potentially highly flexible however if rules are too stringent they may be unable to adjust to changing community demands.

**Accountability:**

- ❑ Accountability requires that setting the units of measurement is transparent and consistent.
- ❑ Ongoing monitoring and enforcement is required. The distribution of the associated costs of monitoring will depend on whether a market is established where purchasers have an ongoing interest to ensure their rights are protected or whether government needs to ensure ongoing production of wetland outputs.

**Community involvement:**

- ❑ Community involvement in setting the units of measurement can help ensure accountability and equitable outcomes.
- ❑ Community involvement as purchasers or managers in some schemes could also be encouraged.

**Comments:**

These schemes are likely to be controversial in Australia. Those who consider their rights to develop are unfairly restricted by regulations are generally supportive of offsets and tradeable rights schemes. Those who consider that a minimum level of conservation has already been reached are reluctant to support such schemes. One potential way forward is to determine those contexts where a tradeable scheme is appropriate. For example, in an area where wetland quality and quantity are severely threatened, a tradeable credit scheme may be inappropriate, as enhancement of these wetlands is required. Mechanisms which encourage the development of “credits” with no associated “debits” would be preferred, eg ongoing payment systems (including

conservation auctions) and information incentives. Further, there is significant literature on the need for a baseline to determine eligibility to enter into a scheme.

**Recommendations:**

1. Further investigations are warranted into the potential use of wetland mitigation banking schemes in Australia. State and Territory Governments, possibly with Commonwealth Government involvement should examine the pros and cons of such schemes, and consider pursuing trials.
2. Likewise, the introduction on a trial basis of a wetland biodiversity credit scheme, with an associated performance bond (see Incentive 22), should be considered by all jurisdictions.

## **Case study #12:**

### **Wetland mitigation banking in the United States**

A mitigation bank creates, or rehabilitates, wetlands in one location that can then be used to replace degradation or destruction of natural wetlands in another. Wetland mitigation banking has become more common and consistent in the USA since 1995 when a uniform set of principles concerning the establishment and maintenance of mitigation banks. Mitigation banking requirements are governed by planning laws at the relevant level of government.

#### ***What constitutes a 'credit':***

Credits are normally generated by wetland creation, restoration and enhancement and, in exceptional circumstances, by protection of wetlands. Wetland restoration and enhancement is the favoured means of generating a credit because it is easier and more likely to be successful than wetland creation. The challenge is then to identify and quantify the values gained through the credit, and their comparability to those lost elsewhere – this is a major area of difficulty for wetland mitigation banking.

#### ***Appropriate credit/debit ratios:***

A credit/debit ratio that requires more units of wetland to be created (however measured) than destroyed acts as a hedge against the future failure of the mitigation bank. However, determination of an appropriate rate may prove difficult.

#### ***Timing and siting of mitigation banks:***

Mitigation banks should generally have successfully generated the credits that they propose to sell prior to their sale. Hence, a project is required to purchase credits from a successful project rather than seeking to restore or enhance a wetland following wetland destruction. Similarly, mitigation is to be preferred on-site rather than off-site, thus ensuring local benefits are maintained. Sometimes mitigation is limited to a specified 'geographic service area'. In other cases higher credit/debit ratios are required the further from the site destroyed.

#### ***Permanence of mitigation:***

Wetland mitigation banking activities are permanent as they are designed to ensure no net loss of wetland services. Often bonds are required to ensure the continued viability of the mitigation banking credit site.

## 19. **THIRD PARTY INDEPENDENTLY ASSESSED CERTIFICATION SYSTEMS**

**Jurisdiction:** Commonwealth/State/Regional    **Mode of operation:** Induce

### **Brief description of incentive and how it works:**

Independently assessed certification systems are increasingly being used in many facets of environmental and natural resource management areas. Certification can take many forms from narrow focus on a particular process or operation, to broader emphasis on management. Certification may take place under the international standard organisation framework (ISO), or under other independently developed standards. Systems may be focussed on particular products, say particular crops or livestock products, or they could be focussed more generally on sustainable property management, regardless of products produced.

This incentive works by ensuring that management and operations of a particular activity conform to environmental management standards. Independent assessors are “accredited” to be appropriate to “certify” management systems of those undertaking the activity. The managers wishing to certify their systems incur costs of making management changes and in engaging independent assessors. The benefits of doing so may include improved (and guaranteed) market access where consumer demand requires sound environmental performance, price premium (in some cases, at least in the short term), and other intangible benefits associated with corporate responsibility. There is some debate as to how “material” the benefits of certification are, although there are many successful examples. In turning this to an “actual” incentive, this materiality will need to be explored.

From a community/government perspective, costs may be incurred to provide adequate research, planning, facilitation for a system to be developed and implemented. Costs could also be incurred should marketing and other support services be put in place. The benefits to government and community would be those associated with the public good benefits of conservation and management of wetlands.

There has been a concern that the ISO approach does not focus enough on specific performance benchmarks, and is insufficiently inclusive of public interests in the certification process. To counter this, the Marine Stewardship Council (MSC) and Forestry Stewardship Council (FSC) certification systems have been established (See examples below). It is more likely that these types of systems will be needed in agriculture, as opposed to the ISO system, if say, wetland management goals are going to be successfully managed through this incentive.

This incentive provides a further possibility to link catchment management outcomes with property management. For property management to be certifiable, it could be linked to outcomes of a catchment management plan. This approach is being investigated and promoted by the Liverpool Plains Land Management Committee for example. This provides an option for a system to be focussed on property management regardless of the agricultural products produced on that land.

### **Examples:**

- The Forestry Stewardship Council (FSC) and Marine Stewardship Council (MSC) are examples of product based certification systems, that have mutually agreed principles and standards for performance incorporated into them. The FSC aims to support environmentally appropriate, socially beneficial, and economically viable management of the world's forests. The MSC focus on environmental standards for sustainable and well-managed fisheries.

- The Victorian Department of Natural Resources and Environment has considered the particular issues of managing biodiversity through environment management systems. This will hopefully inform the approach taken by AFFA to develop a National Framework for the Development of Environmental Management Systems in Agriculture.
- The Liverpool Plains Land Management Committee has developed a Catchment Investment Strategy seeking to encourage landholders to develop EMSs in line with Catchment Planning needs.
- The Nature Conservancy in the US has established a “Compatible Ventures Group”, developing three compatible business initiatives. These pilot businesses are in forestry and agricultural/specialty food products. Each of these seek to use ecolabelling as a means to gain funds for conservation activity from consumers. In the case of Conservation Beef, it is independent scientists who provide the assessment of performance by landholders against stewardship plans and to assess ecological conditions.

**Major stakeholders:**

- Agricultural enterprises
- Local government
- Catchment bodies
- State/Territory and Commonwealth Governments
- Environment NGOs and broad community interests.

**Evaluation:**

**Ecological efficiency:**

- ❑ The potential for this incentive to provide ecological outcomes depends on the ability to set site-specific standards for wetland outcomes.
- ❑ Under the ISO system, wetland outcomes will only be assured if a) the system identifies wetlands as a aspect or impact of the activity concerned; and b) if the accredited assessor considers wetland aspects or impacts to be significant.
- ❑ An approach which sets specific performance based requirements (eg with links to catchment management plans or outcomes) will be more likely to produce wetland management goals.
- ❑ In short, management systems and wetland outcomes will only work if the link between them is made as strong as possible.

**Economic efficiency:**

- ❑ The economic efficiency to landholders needs to be investigated. The benefits of such schemes have been borne out by the significant expenditure undertaken by fishing and forestry companies in order to secure market access. However, the cost to smaller landholders may be significant, and access to markets or price premiums are particularly uncertain. That is, the larger the enterprise, the greater the costs, but the greater the size and confidence in the returns. The smaller the enterprise, the smaller the costs, but perhaps the lower benefit cost ratio, and the greater the level of risk.
- ❑ For government, the costs can be significant to establish the appropriate information base, and facilitate standard development, as well as marketing and support services. However, this is certainly to be cheaper than acquisition, and if properly designed, risks should be low.
- ❑ The costs of setting up such schemes and the costs to landholders to achieve certification must be compared against the benefits to wetland management for a full comparison.

**Social impacts:**

- ❑ There may be some social friction between those who are involved in the system and those not undertaking the system.
- ❑ These differences are only likely to be present in the short to medium term.
- ❑ If management systems become more important as a means of market access, other landholders will need to engage in the system, or change their activities. However, it is unlikely that this management incentive system would be the major or sole cause of such changes, but will simply be a response to existing market trends.

**Flexibility:**

- ❑ The system is flexible in the sense that a landholder is able to decide on a cost-benefit basis as to whether certification is desirable or otherwise.
- ❑ Governments and catchment bodies can increase their support of the system, and thus increase the level of incentive to landholders, depending upon willingness of the community for wetland management outcomes.
- ❑ Further, changes in community preferences could be reflected as changes in performance standards.
- ❑ Care must be exercised that such schemes facilitate continued innovation to improve on current best management practice.

**Accountability:**

- ❑ Varies according to the type of system in place.
- ❑ An ISO system does not appear to be as accountable as say the FSC/MSC approach. Accredited auditors under ISO have no accountability to others, and those wishing to certify systems have significant choice over the scope of the certification, and the choice of significant aspects and impacts.
- ❑ Further, there is no accountability test on the level of continuous improvement that might be desirable by the community. However, the FSC and MSC system offers a high degree of accountability.

**Community involvement:**

- ❑ This depends to a degree on the type of certification system in place.
- ❑ Under ISO, there is little opportunity for community involvement, unless individual ISO certifications are linked to catchment scale plans. Alternatively, an FSC/MSC style certification will provide greater opportunity for community involvement in the setting of performance standards, and the relationship between public and private outcomes.
- ❑ Individual landholders may be more interested in an ISO framework, and may have less inclination to be involved in a more public process. However, this incentive, regardless of the method chosen, is likely to have more landholder and community support than land acquisition or legislative models.

**Comments:**

There has been much debate in Australia (and elsewhere) about the appropriate form of EMS for agriculture. There have been discussion papers, conferences and even certifications to ISO 14001 in various different agricultural products. Agriculture, Fisheries, Forestry Australia (AFFA) have a discussion paper out on the development of EMS in agriculture for comments in March 2002). However, the focus to date has largely been on agricultural outcomes rather than some of the more difficult to assess and provide outcomes, such as biodiversity and wetland management. This incentive needs to be strongly focussed on building the links between wetland goals and management systems, rather than supporting EMSs *per se*. It would involve government taking an active role in making sure that whatever schemes are involved strongly reinforce this link.

**Recommendation:**

1. It is recommended that the Commonwealth Government consider facilitating the establishment of suitable independently assessed certification systems in relation to primary production in conjunction with wetland sites. A prime candidate for this is beef production.

## 20. FACILITATING CHANGE OF OWNERSHIP (See Incentive 17 also)

**Jurisdiction:** Local/ regional

**Mode of Operation:** Facilitate

### **Brief description of incentive and how it works:**

In addition to waiving fees and charges for title changes deemed to be for conservation purposes as suggested in Incentive 17, governments can actively facilitate ownership changes by providing a “revolving fund”. Revolving funds assist buyers searching for properties with important nature conservation attributes that they would like to own and manage – perhaps because they obtain great enjoyment from such places. They also help sellers with such properties find buyers interested in maintaining these values into the future. Revolving funds sometimes act as an agent in bringing parties together while at other times they may buy property, realign titles, incorporate covenants and then to re-sell the property at a future date.

### **Examples:**

- A revolving fund is operated in Victoria by the Victorian Conservation Trust for Nature.
- See Case study #13.

### **Major stakeholders:**

- Local/State/Territory governments
- Potential purchasers, receivers of donations
- Landowners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Can be targeted towards achieving wetland management goals in areas with high ecological values.
- ❑ Action by land-owners would be voluntary.

#### **Economic efficiency:**

- ❑ Low cost at the delivery and operational level when incorporated with existing development application processes.
- ❑ It is important to minimise non-monetary administrative costs.
- ❑ Likely to increase the benefits where an ownership change leads to improved wetland management.

#### **Social impacts:**

- ❑ Facilitates a market transfer whereby potential wetland owners are able to achieve ownership at lower cost.
- ❑ Results in a transfer from new owners to exiting owners.
- ❑ The distributive impacts on rural and regional Australia will depend on who buys and who sells.

#### **Flexibility:**

- ❑ Some flexibility as it acts on individual preferences and encourages entrepreneurial and innovative management of wetlands.
- ❑ Cross compliance accountability measures such as conservation covenants are likely to significantly reduce the flexibility.

**Accountability:**

- ❑ High level of accountability as participating wetlands can be identified and ongoing legal protection achieved.
- ❑ Costs of ongoing monitoring may be important.
- ❑ The decision making process about who is eligible for reduced development restrictions must also be transparent.

**Community involvement:**

- ❑ If community groups or other community based organisations purchase wetlands there is likely to be a high level of community involvement.

**Comments:**

Revolving funds are most effective when there is a high level of recognition in target segments of the community (appropriate buyers, sellers and community groups). They are highly efficient in terms of their outcomes because they are able to recycle the initial contribution many times over.

**Recommendation:**

1. State/Territory governments are urged to allocate funds to establish, or expand existing “revolving funds” specifically for properties (and potentially water rights or allocation) containing significant wetlands.

## **Case study #13:**

### **Revolving Fund operated by Victorian Trust for Nature**

A revolving fund is a fixed pool of funds dedicated towards purchasing properties with significant native habitat or of cultural value, and then reselling the land to conservation-minded people wishing to own a native habitat property.

The advantage of a revolving fund is the ability to recycle the funds many times over as lands are progressively purchased and resold with a conservation covenant attached. The Victorian Trust for Nature has operated a revolving fund since 1989 having purchased and resold 14 properties by 2000 with a further 8 awaiting sale.

#### ***Eligible wetlands:***

Eligibility requirements are similar to those for conservation covenants. The land must be of sufficiently high conservation significance to be covenanted. Such wetlands may have threatened plants or animals, or be one of the last remaining wetlands in the area. The wetland may also form part of an important riparian or wildlife corridor or contribute important functions for riverine 'health'. Important factors include: degree of disturbance; diversity of flora and fauna; presence of threatened or endangered species; value as a buffer or wildlife corridor; size and shape of area; and, management input required to maintain the ecological integrity of the site. Eligible sites are often brought to the attention of the fund by Trust for Nature supporters or property vendors.

#### ***Costs of a wetland sale:***

Future income earning potential of the land is lost. Partial property sales may also incur development application fees, costs of surveying new property boundaries and other costs.

In some cases the purchasing organisation may be able to reduce costs by having some, or all fees waived or by obtaining services at a lower cost than the vendor, thus reducing costs. These options should be explored with the organisation in advance. For example, sales to conservation organisations may be exempt from stamp duty.

#### ***Incentives for property sales:***

The major incentives impacting on the sale of properties to a revolving fund are the security of ensuring ongoing protection of the wetland via protection of a conservation covenant and resale to a conservation-minded buyer. A similar array of incentives are available to revolving funds as to other eligible non-profit organisations in seeking donations from the wider community and monetary support from government to fund purchases. The difference between a reduced value (or 'Bargain' sale price) and the full value of a property is not currently tax deductible in Australia, however a bargain sale value may reduce Capital Gains Tax liability thus reducing some costs to the landowner.

## 21. VOLUNTARY OR COMPULSORY LAND ACQUISITION

**Jurisdiction:** All

**Mode of Operation:** Induce/compel

### **Brief description of the incentive and how it works:**

In some circumstances government may seek to purchase wetlands and/or other important natural areas from private landowners in order to incorporate them into reserve systems for ongoing conservation.

### **Examples:**

- Various environmental levies are charged in over 13 local government areas, but not all are used to directly purchase land for conservation. For example, the Bushland Protection Levy of the Brisbane City Council has been used to purchase wetlands among other objectives.
- Most States/Territories dedicate at least some funds to acquiring land for reserves (National Parks, Regional Parks or other open space).
- At the Commonwealth level funding is available for purchases of high value ecosystems in any part of Australia under the National Reserve System Program of the Natural Heritage Trust.

### **Major stakeholders:**

- All governments
- Landowner

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ At the local scale, levies can be used to purchase landholdings (but are not specifically for wetlands purchases) thus ensuring wetland management goals are achieved.
- ❑ Likewise at the State/Territory and Commonwealth levels, funds can be used to purchase properties (but are not specifically for wetlands purchases) thus ensuring management goals are achieved in these areas.
- ❑ Funds are unlikely to be sufficient to ensure wetland management goals are achieved over large areas.
- ❑ Acquisition for comprehensive adequate reserve systems can lead to achievement of goals for specific ecosystem types (if sufficient resources for management are available).

#### **Economic efficiency:**

- ❑ Purchase of full property rights of wetlands by government may be expensive relative to other options.
- ❑ Purchase imposes high upfront costs and ongoing management costs on the community. However, purchase potentially allows a much greater degree of control over management of the wetlands for community benefit.
- ❑ There are significant costs involved in raising and administering taxation systems used to fund purchases that should also be taken into account if conservation can be achieved without government expenditure.
- ❑ Government acquisitions can “crowd-out” lower cost/higher benefit private sector initiatives.

**Social impacts:**

- ❑ The community gains the wetland outputs but at the cost of a transfer to the current wetland owner and ongoing costs.

**Flexibility:**

- ❑ The difficulty in buying and selling conservation lands indicates very little flexibility.
- ❑ Government ownership ensures few incentives for innovative management.

**Accountability:**

- ❑ The transfer of ownership may facilitate increased accountability compared to grants to existing wetland owners depending on the reporting processes in place.

**Community involvement:**

- ❑ Community input in selection of sites may be significant if a community contribution is required.
- ❑ Creation and sponsorship of 'friends of' groups, or other direct involvement of the community in management post purchase can ensure ongoing community involvement in wetland management.
- ❑ Public acquisition of land can often generate community conflict, and this needs to be carefully managed. The community can also expect a lot from Government in the management and use of the site, and can be very critical of Government if these expectations are not delivered.

**Comments:**

It is recognised that the public reserve system is important, and additions to the system to ensure it meets requirements will be necessary. However, the assumption in this report is that conservation on privately owned or managed lands is also of high priority. Most of the incentives in this report are presented as complements to this type of incentive. Of course, it is possible these other incentives could replace the need for such "interventionist" measures, however in practice, there appears to be a need to assure a minimum conservation area and hence a reliance on traditional regulatory and acquisitive measures.

One issue is that the Government can occasionally be made to take over properties which are not of high conservation value, or land which is highly degraded and would require significant expenditure on rehabilitation. Further, in some cases, Government can be 'held to ransom' by sellers in the event it is known that Government is seeking to purchase a particular parcel of land. The end result can be that important high conservation value land does not end up in a comprehensive and representative system, whereas other less important land does.

**Recommendations:**

1. As part of the efforts to develop a national system of reserves which is comprehensive, adequate and representative there is a need to consider how this can be achieved for wetlands from a scientific perspective (see incentive 5 above), before then exploring options such as acquisition by government or through non-government organisations specialising in such acquisitions.
2. Where acquisition is deemed socially desirable, options to involve private sector management of protected wetland areas should be explored to ensure more cost-effective, flexible and innovative operation that forges links with the community.

## 22. PERFORMANCE BONDS

**Jurisdiction:** State/Territory Governments  
Induce/Compel

**Purpose:**

**Brief description of the incentive and how it works:**

A bond is deposited (or an insurance policy taken out) as part of the permit process to engage in an activity that may damage the environment (including wetland areas). If the activity is successfully completed without damage to the environment the bond is returned. If the environment is damaged the bond is used to remedy the damage.

**Examples:**

- Performance bonds have been applied to mining (to encourage site rehabilitation), pollution reduction in New South Wales and effluent control in South Australia.

**Major stakeholders:**

- Industry
- Governments

**Evaluation:**

**Ecological efficiency:**

- ❑ Not targeted at wetlands at present.
- ❑ Potentially could be used as an incentive to protect wetlands where development is proposed. Could also potentially be required for any activity that may damage outputs from wetlands on private land.

**Economic efficiency:**

- ❑ Imposes relatively high costs on the developer or industry in order obtain a benefit to undertake an activity that may potentially damage wetlands or other natural resources.
- ❑ Has potential to ensure ongoing generation of benefits to the wider community but at a high cost of policing.

**Social impacts:**

- ❑ Could impose an ongoing transfer of wetland benefits from wetland owners to the wider community.
- ❑ It is likely to be highly unacceptable to farming communities because of the imposition of management requirements.

**Flexibility:**

- ❑ Can increase flexibility associated with wetland development proposals but may add another regulatory layer.
- ❑ The legislated requirement of a bond would not be flexible.

**Accountability:**

- ❑ The process followed to set the bond would need to be clearly defined and followed to ensure that they are not enacted for the benefit of some over others and that they reflect community values.

**Community involvement:**

- ❑ Communities may be involved via participation in forums or other bond decision making structures but are unlikely to contribute over the longer term.

**Comments:**

This is only a suitable tool where relatively high return actions are proposed. Low risk actions should be permitted while high risk action would require a bond. Hence, the rules that dictate the level of risk are crucial.

A bond is similar to requiring mitigation or prevention of damage to wetlands, for example via mitigation banking schemes. However, evidence from the US Mitigation Banking schemes are that very few wetlands successfully replace the full range of functions of the original wetlands. Hence, bond parameters will need to be carefully selected to ensure management of valued functions of wetlands. Further the timeframe for a performance bond needs to be carefully considered. In evaluations of wetlands, visual inspection suggested the wetlands have functioned well, however examination of specific functions reveals worse performance. Those landholders who have provided a bond will be keen to have that bond released as soon as possible. As the long term conservation of the wetland is the aim of the incentive, those managing the incentive will want to retain the bond as long as possible to ensure that the wetland is performing appropriately. There needs to be a means of ensuring long term commitment to the performance of the wetland, even after a bond has been released. A further problem is that trialling this mechanism could potentially take a long time, and a scheme could be approved which may not meet longer term needs.

Performance bonds may also be a useful adjunct to tradeable rights systems where commitment to the long term supply of a wetlands output is required.

**Recommendations:**

1. The use of performance bonds needs to be investigated as an incentive option. This should include a review of the experience with mitigated wetlands throughout Australia and the world to ensure that any scheme of this type has appropriate safeguards based on the lessons learnt and to ensure valued functions are adequately conserved.
2. The proposed trial of a wetland biodiversity credit scheme (see incentive 18) should also include a performance bond requirement as an adjunct.

## 23.

## ACCREDITED LICENCING SCHEMES

**Jurisdiction:** State/Territory Governments

**Mode of operation:** Induce/Compel

### **Brief description of the incentive and how it works:**

Accredited licensing schemes allow actions that carry a risk to the environment to be undertaken. In some cases they permit a specified level of damage to the environment. Accredited licensing schemes are essentially a legally binding management agreement between government and business to either permit or manage the level of risk associated with potentially environmentally damaging actions. Accredited licensing schemes are essentially uniform compulsory forms of Incentive 19 – third party independently assessed certification schemes.

### **Examples:**

- Have been applied by the Victorian EPA to industrial pollution problems.

Major stakeholders:

- Industry/landowners
- State/Territory Governments

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Not targeted at wetlands *per se*.
- ❑ Potentially could be used as an incentive to protect wetlands by requiring a licence to conduct specified actions (extending to grazing for example).

#### **Economic efficiency:**

- ❑ Imposes relatively high costs on wetland owner in order to access benefits of wetland resources.
- ❑ Has potential to ensure ongoing generation of benefits to the wider community but at a high cost of policing.

#### **Social impacts:**

- ❑ Could impose an ongoing transfer of wetland benefits from wetland owners to the wider community.
- ❑ It is likely to be highly unacceptable to farming communities because of the imposition of management requirements.

#### **Flexibility:**

- ❑ Impact on flexibility is mixed.
- ❑ Licencing may increase the skills of landowners to change management in response to community demands. However, licencing does not increase the potential for the community to signal demands.
- ❑ Licencing has significant potential to reduce innovation by requiring compliance with specified procedures.

#### **Accountability:**

- ❑ The process followed to set the licencing requirements would need to be clearly defined and followed to ensure that they are not enacted for the benefit of some wetland owners over others and that they reflect community values.
- ❑ The costs of policing of such licences would be extremely high, in part because the benefits to wetlands would be difficult to measure.

**Community involvement:**

- Communities may be involved via participation in forums or other decision making structures that set licencing requirements but are unlikely to contribute over the longer term.

**Comments:**

It is possible that many landholders would consider a licencing scheme as an alteration of their property rights (even if applied only to 'new' activities), and would be unlikely to accept it without their full involvement. They would need to accept the licence requirements, and the authority of the licencing agency. An incentive would need to be provided to encourage landholders to become involved in the scheme.

Licencing is most appropriate in cases where high risk wetland management strategies are to be introduced. The risks involved could be managed through the specification of qualification requirements for those undertaking the new venture. They may therefore be useful in conjunction with performance bonds (Incentive 22).

**Recommendation:**

1. State and Territory Governments should investigate the possibility of applying an accredited licensing scheme to activities impacting upon wetlands, and how it might operate.

## 24.

## ZONING REGULATIONS

**Jurisdiction:** Local/Regional/State/Territory  
Compel

**Mode of operation:**

**Brief description of the incentive and how it works:**

Zoning regulations restrict the range of landuses available to landowners. For example, land zoned open space cannot be built on. Zoning regulations are enacted at the local government level, often within a legislative framework determined at the state government level. Zoning may also be applied at the state level, for example designated floodplains at the state level.

**Examples:**

- Available to some degree in all local government areas. Also sometimes applied at the State/Territory level.

**Major stakeholders:**

- Local government
- State/Territory governments
- Landowners

**Evaluation:**

**Ecological efficiency:**

- ❑ Not usually specifically targeted at wetland protection.
- ❑ Can ensure that land-uses are compatible with wetland management goals up to a cut-off point (beyond which compensation is required under the constitution)

**Economic efficiency:**

- ❑ Costs are entirely imposed on landholders and do not discriminate between wetlands with high value alternative uses and low value alternatives.
- ❑ Zoning may discriminate between high value wetlands and other wetlands but at additional cost of defining and policing zones.
- ❑ Administrative costs may be significant where there numerous conflicts between wetland owners and local government (requiring a high level of policing) or there are numerous zoning categories.
- ❑ Measurement of benefits is difficult as zoning usually precludes a future use rather than changing current permitted uses and many benefits and costs are site specific.

**Social impacts:**

- ❑ Costs of zoning are entirely imposed on wetland owners and only indirectly on the community via reduction in development opportunities. Hence, zoning may be electorally popular but extremely unpopular with wetland owners.

**Flexibility:**

- ❑ In general, zoning is a rigid, one size fits all approach to wetlands conservation.
- ❑ Reactions to changes in community demands are likely to be slow and zoning may also discourage innovatory management.

**Accountability:**

- ❑ The process followed to set zones needs to be clearly defined and followed to ensure that zones are not enacted for the benefit of some over others and that they reflect community values.

**Community involvement:**

- Communities may be involved via participation in forums or other zoning decision making structures but are unlikely to contribute over the longer term.

**Comments:**

General local government zoning regulations can offer some protection to wetlands, particularly those located in urban areas. However in agricultural areas, no special protection is generally afforded. Changes to current zoning regulations would be required to effect such protection.

**Recommendation:**

1. Zoning should be used as a measure of last resort for highly values wetland areas due to its inflexibility and inequity. Where zoning is introduced, compensation to wetland owners should be investigated.

## 25. RESOURCE BASED REGULATIONS

**Jurisdiction:** State/Territory Governments  
Compel

**Mode of Operation:**

**Brief description of the incentive and how it works:**

Resource based regulations apply to specific natural resource types or combinations such as vegetation or coastal wetlands. The regulations act to restrict the range of uses that the resource can be put to by the owners of land where the resource is physically located. For example, native vegetation clearance laws require landowners to obtain a permit to clear vegetation (beyond a specified area) on their properties but do not restrict their rights to graze native vegetation on their lands. The distinction between zoning and resource based regulations is that zones are geographically specified while resource regulations pertain to the specified resource wherever it is located.

**Examples:**

- Vegetation clearance acts have been enacted in all States/Territories. Other legislation varies between and within jurisdictions. A specific wetland example is the State Environmental Planning Policy 14 relating to coastal wetlands in New South Wales.

**Major stakeholders:**

- Government at all levels.
- Landowners

**Evaluation:**

**Ecological efficiency:**

- ❑ Resource based regulations are generally designed to prevent wetland resources (land, water, flora and fauna) from being split and used separately (for example, water to irrigation) and hence ensure ongoing production of wetland outputs. However, such legislation is not usually able to prevent more subtle separation of resources and degradation due to lack of management. Hence, management goals may be achieved in the short term but are unlikely to be achieved in the long term.

**Economic efficiency:**

- ❑ The costs of legislation are relatively low but the costs of policing such legislation are ongoing and may be high where legislation is not clearly defined.
- ❑ Legislation does not always impose a current monetary cost on landowners but usually imposes at least an opportunity cost (see glossary) because wetland owners may be unable to develop their wetlands for otherwise profitable uses (from their perspective).
- ❑ Benefits are provision of environmental benefits in the short term and the retention of the potential to produce environmental benefits into the longer term.
- ❑ Regulations provide no incentives to care for wetlands, only incentives to avoid regulations. This may create a situation of perverse incentives.

**Social impacts:**

- ❑ Legislation usually imposes an uncompensated cost on landowners. Hence, legislation imposes an effective transfer from landowners to the wider community. As such the distributional impact is likely to be from rural Australia towards metropolitan areas.

**Flexibility:**

- ❑ Legislation is generally permanent, rigid and not able to be easily changed to accommodate changing community preferences.
- ❑ At its worst, legislation can impose rigid management requirements that eliminate scope for innovation in management.

- ❑ Legislation has some capacity to coerce contributions from the private sector.

**Accountability:**

- ❑ Few public moneys contributed means relatively high accountability. However, the difficulty in ongoing policing significantly diminishes the overall accountability.
- ❑ The process followed to set the regulations needs to be clearly defined and followed to ensure that regulations are not enacted for the benefit of some over others and that they reflect community values.

**Community ownership:**

- ❑ Different people within the community will be affected differently. Those people who consider the regulation as restricting a perceived right, will be opposed. Other community members have been frustrated by the increasing threats to biodiversity presented by land clearance, and wetland conversion, and these have been supportive of the regulations. The issue is how these competing community perspectives are resolved. Traditionally, communities have not owned such decisions, and conflict resolution methods have not been developed. The conflict enters the political realm, and also becomes costly in terms of the lobbying effort generated.

**Comments:**

This form of incentive is an important approach that Government will continue to apply. Many of the other incentives in this report will complement this type of incentive. Of course, it is possible these incentives could replace the need for such regulatory measures, however in practice, there appears to be a need to assure a minimum conservation area and hence a reliance on traditional regulatory measures.

There seems to be debate about the best way to introduce such regulations. The argument is that if they are rushed through, the community will not own them, however they will ensure there is no ‘panic clearing’ of protected sites. The alternative is a longer process of consultation and development, with increased panic clearing prior to the introduction of the regulations.

**Recommendations:**

1. The use of regulatory controls should be considered only as an interim protection mechanism for very high value wetlands.
2. If regulations are introduced, monitoring and enforcement activities will be required to avoid the ‘shoot, shovel and shut up’ response whereby landowners effectively destroy their wetland asset in order to avoid being forced into actions against their will. This may require the use of ‘safe harbour’ agreements (see incentive 27 below).

## 26. ENVIRONMENT PROTECTION AND BIODIVERSITY CONSERVATION ACT 1999

**Jurisdiction:** Commonwealth

**Mode of Operation:** Compel

### **Brief description of the incentive and how it works:**

The legislation gives the Commonwealth Government the opportunity to consider any development proposal or proposed action that may impact on what it describes as places or species of 'national environmental significance' (see below). Depending on the outcome of such an evaluation the Commonwealth may require an assessment, either in conjunction with State/Territory impact assessment processes or of its own. The option then exists to regulate unacceptable actions.

Note – the EPBC Act also includes options for conservation agreements in relation to areas of biodiversity significance, as well as the provisions relating to management planning for Ramsar-listed areas (see Incentive 5).

### **Examples:**

- Applies to all wetland areas that are Ramsar listed (or which would qualify for such status), World Heritage listed or offer important habitat for listed migratory species or nationally 'threatened species' or ecological communities. Also applies to actions that could adversely impact on such wetlands or the species and communities in question.

Major stakeholders:

- Commonwealth, State/Territory Governments
- Landowners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Government legislation is generally designed to prevent or regulate extractive uses of wetlands and hence ensure ongoing protection of wetlands. However, such legislation is not usually able to prevent more subtle extraction of wetland resources and degradation due to lack of management.
- ❑ The EPBC Act requires the preparation of management plans for all Ramsar Wetlands of International Importance, and recovery plans for threatened and ecological communities.

#### **Economic efficiency:**

- ❑ The costs of legislation are relatively low but the costs of policing such legislation are ongoing. EPBC legislation does not usually impose a current monetary cost on landowners but may impose an opportunity cost.
- ❑ Benefits are continued provision of environmental benefits in the short term and the retention of the potential to produce environmental benefits into the longer term.

#### **Social impacts:**

- ❑ Legislation usually imposes an uncompensated cost on landowners (and potentially the wider community). Hence, legislation imposes an effective transfer from landowners to the wider community.
- ❑ As such the distributional impact is likely to be from rural Australia towards metropolitan areas.

#### **Flexibility:**

- ❑ Legislation is generally permanent, rigid and not able to be easily changed to accommodate changing community preferences.

- ❑ At its worst, legislation can impose rigid management requirements that eliminate scope for innovation in management.
- ❑ Legislation has some capacity to coerce contributions from the private sector.

**Accountability:**

- ❑ Few public moneys contributed means relatively high accountability. However, the difficulty in ongoing policing will increase the cost of ongoing compliance.

**Community involvement:**

- ❑ Little scope for community involvement.

**Comments:**

This aspect of the EPBC Act is viewed as an ‘incentive’ of last resort for high value wetlands. As noted above and elsewhere in this report, the Act also has incentive built into it which are directed more at inducing rather than compelling changes in wetland management practices.

**Recommendation:**

1. The use of the controlled action provisions of this Act should be applied in order to protect places and species recognised as being of ‘national environmental significance’. In this context, the full use of this provision in relation to ‘important’ wetlands (see incentive 5 above) and threatened wetland-dependent species is necessary where other measures (incentives and planning processes) operating at the local and State/Territory fail to recognise the importance of these. There is a need to ensure that application of these measures is supported by appropriate incentives to appropriately manage wetlands and to police possible perverse ‘shoot, shovel and shut-up’ incentives that may result.

## 27. Use of 'Safe Harbour'/'duty of care' type agreements

**Jurisdiction:** State/Territory Governments

**Mode of operation:** Compel

### **Brief description of incentive and how it works:**

Safe harbour schemes are designed to reduce the perverse incentives sometimes associated with regulatory mechanisms such as native vegetation management restrictions. These schemes seek to preserve the current condition of the wetland or other resource as a minimum condition. Where the landowner improves this condition by active management of the resource the landowner does not become subject to increasingly stringent requirements based on the outcomes of their management actions. The increasingly stringent requirements (the most common of which is a responsibility to continue to maintain the improved environmental condition) would otherwise act as a significant disincentive to improved management.

### **Examples:**

- A landowner improves their wetland by revegetation, removal of levees and weed control. As a result a number of endangered species become resident. The landowner would normally then become subject to regulations governing landuse as a result of the endangered species becoming resident. However, because the landowner actively improved the condition of the wetland these landuse regulations do not apply beyond the initial baseline condition.
  
- See Case study #14

Major stakeholders:

- State/Territory Governments
- Landowners

### **Evaluation:**

#### **Ecological efficiency:**

- ❑ Specific wetland management regulations may discourage landowners from improving management in some cases. These cases will apply where landowners are potentially subject to increasingly stringent regulations on their landuse as a result of their own actions in improving natural resource management. For example, by rehabilitating wetlands.

#### **Economic efficiency:**

- ❑ Negotiation and monitoring costs of 'safe harbor' and 'duty of care' arrangements may be significant, especially during transition periods. However, these schemes have the potential to ensure ongoing wetland conservation where legislation may otherwise create a perverse incentive to change management.

#### **Social impacts:**

- ❑ These agreements have the potential to create a win-win whereby benefits of wetland production are gained with few direct costs on the wider community.

#### **Flexibility:**

- ❑ Safe harbour and duty of care type arrangements have the potential to increase the flexibility to respond to changes in community demands. They also have the potential to stimulate innovative management focusing on the outcomes valued by society rather than specific management actions in wetlands and hence stimulate additional private sector contributions.

#### **Accountability:**

- ❑ A clear and transparent framework for negotiating such agreements and the ongoing monitoring requirements are the major accountability issues.

**Community involvement:**

- ❑ Little scope for community involvement.

**Comments:**

As with tradeable market systems, this scheme is likely to be controversial, or be more applicable in some instances than others. The characteristics of areas where such a scheme will be effective are important to identify.

Recommendation:

1. State and Territory Governments are urged to review the potential for 'safe harbour' and 'duty of care' type agreements as an adjunct to their other incentive measures, and to consider undertaking trials to examine the utility of such schemes for Australia.

## Case study #14:

### **'Safe Harbor' agreements in the United States**

'Safe Harbor' agreements were developed in the United States by a non-government organisation called 'Environmental Defense' as a tool to reduce some of the perverse incentives generated by the Endangered Species Act.

#### ***What are 'Safe Harbor' agreements?***

'Safe Harbor' agreements indemnify landowners from land use restrictions imposed by the Endangered Species Act where, as a result of the landowners specific management actions, endangered species become resident, increase or are reintroduced to their land.

#### ***How 'Safe Harbor' agreements work:***

'Safe Harbor' agreements usually relate to a single species, and are negotiated between the landowner, a facilitating body (usually a non-profit conservation group or quasi-government organisation) and government. They can be negotiated where they will lead to a 'net conservation benefit' for the species concerned. The net conservation benefit is judged against baseline conditions on the landowner's property at the time the agreement is executed. Agreements can be as short as ten years or as long as 99 years. Lengthy agreements are preferred to preclude habitat destruction because the agreement is about to end. A landowner who enters a 'Safe Harbor' agreement may conduct actions detrimental to the endangered species in the future so long as the baseline condition is not breached.

#### ***An example:***

A widely cited 'Safe Harbor' arrangement in the US concerns habitat for the Red Cockaded Woodpecker. The woodpecker nests in hollows in longleaf pine ecosystem but these hollows do not form until trees are mature. Where Red Cockaded Woodpeckers are present the Endangered Species Act can be invoked to prevent harvesting of the pine trees along with a significant buffer area. But landowners can effectively prevent nesting by harvesting pines prior to hollow formation. Entering a 'Safe Harbor' agreement allows landowners the security that they can harvest their timber even if Red Cockaded Woodpeckers inhabit their forests once they become mature, thus removing the incentive to harvest younger pines to avoid formation of suitable habitat.

#### ***What are the incentives to wetland owners?***

Wetland owners must maintain the baseline conditions at the time of signing such an agreement. But any improvements they make after that time that result in the benefits to the species or habitat specified in the agreement can be reversed at a later date without penalty under the relevant act.

#### ***One potential application in Australia:***

A wetland owner who is considering recreating wetlands, but who is concerned about how this might limit his or her future management options could enter a 'Safe Harbour' agreement. The agreement would specify the current conditions of his or her wetlands as the 'baseline condition'. Any improvements that the wetland owner makes could be reversed at a later date thus ensuring future wetland management flexibility is retained.

## 4. Conclusions and recommendations

### 4.1 Introduction

The previous section reviewed 27 incentive measures either in use in Australia at present, or being used elsewhere. These 27 options (as listed in Table 3 in section 3) offer a comprehensive array of tools available now, or potentially available in the future, that governments at all levels can consider in order to support a national effort to see freshwater wetlands conserved through appropriate management actions.

Before proceeding to consider these incentive measures in more detail, it is worth recalling the primary mandates of this work, as described in section 1. These come from the Commonwealth's Wetlands Policy, a whole-of-government commitment to seeing wetlands conserved and used wisely, and the Ramsar Convention on Wetlands with its urgings that Contracting Parties should review their incentive measures and remove those that are counter to the goal of seeing wetlands managed for sustainability and biodiversity conservation.

It is also worth recalling section 2.6 of this report that described how incentive measures can operate through three basic forms; to facilitate, induce or compel changes in management practices. The decisions about which approach to apply, or indeed whether to use a 'cocktail' of options, is one that each jurisdiction must take. What is apparent is that these incentives need to be operating at all levels of government, and that a broader range of options is needed if wetland management goals are to be achieved.

What is also clear is that the evolution and up take of incentive measures for conserving freshwater wetlands by the three levels of Government in Australia to date has been *ad hoc*, and this is reflected by how different the approaches are in each jurisdiction and how little is being done in some jurisdictions to offer such incentives. There is a clear case for greater national leadership in this area by the Commonwealth Government.

Sections 4.2-4.6 following bring together the recommendations presented in Section 3 under the respective incentive options. This has been done to assist with gaining a consolidated view of the recommendations, which the authors argue is important if the necessary comprehensive and integrated approach to developing an overall national approach to incentives can be taken.

### 4.2 Incentives which seek to facilitate changes in wetland management practices

Section 3 identified 7 options in this area of incentives that are considered to be facilitatory in *modus operandi* as shown below in Table 4. Of these, the provision of management advice and assistance (1), 'Land for Wildlife' schemes (2) and the recognition of 'important' sites (5) are those most commonly in use at present. However, as indicated by the recommendations relating to these, there is considerable scope for doing more to extend their coverage and improve consistency in their application.

On the next tier of application are conservation covenants (3), followed by eco-tourism promotions (7). In the domain of those incentives yet to gain broader support from governments are capacity building of NGOs (4) and wildlife ranching (6). These incentives, and particularly the latter two, warrant further examination and development by governments.

**Table 4 (reproduced from Table 3 in section 3): Types of wetland protection incentives available for conserving wetland ecosystems\***

| How incentive operates |   | Type of incentive                | Local/regional application | State/Territory application | Commonwealth application |
|------------------------|---|----------------------------------|----------------------------|-----------------------------|--------------------------|
| Facilitate             | 1 | Management advice and assistance | ☺                          | ☺                           | ☺                        |
|                        | 2 | Land for wildlife schemes        | ☺                          | ☺                           |                          |
|                        | 3 | Conservation covenants           |                            | ☺                           |                          |
|                        | 4 | Capacity building in NGOs        |                            | ☺*                          | ☺*                       |
|                        | 5 | Recognition of 'important' sites | ☺                          | ☺                           | ☺                        |
|                        | 6 | Wildlife ranching                |                            | ☺                           |                          |
|                        | 7 | ECO-TOURISM PROMOTIONS           | ☺                          | ☺                           | ☺                        |

\* The incentives are grouped according to their mode of operation. The level of operation is also indicated. Where the incentive is operational at present the level is shown with a ☺. Where there is potential for seeing the incentive operating at other levels these are shown with an ☺\*.

## Specific recommendations relating to incentives options:

### 1. Management advice and assistance

**Jurisdiction:** Local, State/Territory and Commonwealth Governments

1. While some efforts have been made by Governments to transfer technology and best practice in wetland management there has been no concerted national effort to provide a 'clearing house' to make accessing these resources simpler for private landholders. The Commonwealth Government is best placed to adopt a leadership role here, engaging its Task Force on Wetlands Communication, Education and Public Awareness to develop a range of delivery tools and avenues, such as a web-based portal, fact sheets, management manuals in hard copy and on CD-Rom etc.
2. Likewise, the NGO sector needs to be encouraged and supported where possible by Governments to dedicate more resources into making its information resources and expertise more accessible to private landholders.
3. More resources also need to be applied for the provision of extension officer/on-ground facilitation, particularly focused on 'important' sites (see Incentive 5). Research into the most effective combination of Commonwealth, State/Territory and local government resources should be undertaken. It is possible that a national framework could assist in focusing State/Territory and local resources to achieve the desired wetland management outcomes.
4. The development of specific rural landholder training modules and programs in wetland management as part of whole farm management is strongly recommended.

## **2. Land for wildlife schemes**

**Jurisdiction:** State/Territory Governments, and the opportunity to expand into the local government arena also (see below)

1. Land for Wildlife schemes should be adopted in all States and Territories where they are not currently operating.
2. Commonwealth, State/Territory and local governments need to determine an appropriate means of resourcing the adoption of these schemes at local government level.
3. Where Land for Wildlife programs are operating (or begin), freshwater wetlands need to be identified as a priority, especially where they are seen as important elements of maintaining 'healthy' catchments. This could be promoted as part of the Natural Heritage Trust's programs and the National Action Plan for Salinity and Water Quality.
4. Skills training needs to be made available for Land for Wildlife Extension Officers in order to encourage conservation management practices for freshwater wetlands.

## **3. Conservation covenants**

**Jurisdiction:** State/Territory Governments

1. Encourage greater and more systematic use of conservation covenants as a permanent protection mechanism for those wetlands recognised as "important" at the catchment, national and international levels (see 4. below)
2. Develop and promote conservation covenants specifically for wetlands and include as part of this access to expertise in developing associated management plans.
3. Investigate further possibilities to encourage the uptake of conservation covenants generally, including the extension of covenants to cover water rights.
4. The ability to negotiate, hold and enforce conservation covenants should be extended to eligible non-government organisations. Eligibility rules should be minimal and be based on ensuring the organisations have appropriate goals and structures and possibly also include fiduciary requirements to ensure ongoing management capability.

## **4. Capacity building in NGOs**

**Jurisdiction:** Commonwealth, State/Territory Governments

1. Governments at the Commonwealth and State/Territory level are urged to consider ways to enhance the capacity of NGOs (both financially and skill-wise) to contribute to natural resource management, and in particular wetland management in this context, while seeking to leave NGOs with autonomy and at 'arms length' from Government so they can continue to actively facilitate shifts in wetland management practices toward sustainability.

## **5. Recognition of 'important sites'**

**Jurisdictions:** All Governments

1. The Commonwealth Government, in collaboration with the States and Territories needs to develop a more systematic approach to identifying 'important' wetlands. These

should then be given special consideration in catchment-based planning. This process of identification needs to meet the necessity for a nationally agreed approach to building a comprehensive, adequate and representative system of aquatic reserves, including Ramsar sites.

2. A ranking of 'important' wetlands should be established in order to facilitate decisions regarding the allocation of government funds for wetland protection. The ranking should be formulated on the basis of ecological and social factors, and also consider community preferences where possible.
3. Resources for managing Ramsar listed wetlands need to be made available in those cases where an excessive cost burden would be placed on individual landholders. This may require the development of additional incentive mechanisms.

## **6. Wildlife ranching**

**Jurisdiction:** State/Territory Governments

1. Ranching for Wildlife schemes involving suitable wetland-dependent species warrant further investigation as an incentive measure. There would seem to be opportunities to examine such ventures in conjunction with other wetland activities such as eco-tourism. It is acknowledged that such schemes may be controversial, and their success would rely heavily on information being available that would facilitate community understanding of the conservation gains being achieved.

## **7. Eco-tourism promotion and infra-structure development**

**Jurisdiction:** Local/State/Territory and Commonwealth Governments

1. The inclusion of wetland promotions in tourism literature at local/regional, State/Territory and national levels warrants further promotion. For example, Australia's Ramsar sites are promoted little as tourism destinations (with minor exceptions). The inclusion of such promotional material needs to promote the key environmental and social positives from sustainable wetland management and eco-tourism.
2. Governments at all levels are also urged to consider their opportunities and options for facilitating the development of wetlands based tourism on private lands. This may include an assessment of the likely private investment in infrastructure, and the levels of public investment needed to encourage this investment.

## **4.3 Incentives which seek to induce changes in wetland management practices**

There are 13 incentive options which aim to induce the desired changes in wetland management practices. Added to these are the 3 considered in the following sub-section which can be considered as operating to either induce or compel changes in management practices, depending on the circumstances.

The 13 incentive measures considered below are a 'mixed bag' of options, some fiscal, others more institutional. Only three would be considered as newer ideas in Australia at present; these being bonus development rights (9), mitigation banking and other tradeable rights schemes (18) and third party independently assessed accreditation systems for primary production (19). The

recommendations relating to these three options are necessarily cautious as each warrants further careful consideration and possible trials to determine their overall costs and benefits.

The remaining 10 incentive options, fall into the following categories:

- ❑ local and regional rate rebating schemes (8) that are becoming more common but still operating at relatively low levels;
- ❑ grants programs (10 and 11) and ongoing management payments (12), which again, while relatively common approaches, need to be ramped up and better focussed in order to see freshwater wetlands better managed;
- ❑ taxation arrangements; two relating to the removal of perverse incentives (13 and 14) and three examining ways of offering improved tax concessions or incentives (15, 16 and 17); and,
- ❑ mechanisms to facilitate the transfer of ownership of wetlands into the hands of those willing to see them managed for conservation and sustainability (20). Note – see incentive 21 also in this regard.

**Table 5 (reproduced from Table 3 in section 3): Types of wetland protection incentives available for conserving wetland ecosystems\***

| How incentive operates |                                  | Type of incentive  | Local/regional application | State/Territory application | Commonwealth application |
|------------------------|----------------------------------|--|----------------------------|-----------------------------|--------------------------|
| Induce                 | 8                                | Rate rebates/concessions                                 | ☺                          | ☺*                          | ☺*                       |
|                        | 9                                | Bonus development rights                                 | ☺                          | ☺                           |                          |
|                        | 10                               | Direct grants  | ☺                          | ☺                           | ☺                        |
|                        | 11                               | Devolved grants  | ☺                          | ☺                           | ☺                        |
|                        | 12                               | Ongoing management payments                              | ☺                          | ☺                           | ☺*                       |
|                        | 13                               | Removal of perverse land management incentives           | ☺                          | ☺                           | ☺                        |
|                        | 14                               | Removal of perverse tax incentives                       | ☺                          | ☺                           | ☺                        |
|                        | 15                               | Tax incentives   |                            |                             | ☺                        |
|                        | 16                               | Tax incentives for NGOs                                  |                            |                             | ☺                        |
|                        | 17                               | Fee and tax breaks for conservation groups               | ☺                          | ☺                           | ☺*                       |
|                        | 18                               | Mitigation banking, and other tradeable rights systems   |                            | ☺*                          |                          |
|                        | 19                               | Third party independently assessed accreditation systems |                            | ☺*                          | ☺*                       |
| 20                     | Facilitating change of ownership | ☺  | ☺                          |                             |                          |

\* The incentives are grouped according to their mode of operation. The level of operation is also indicated. Where the incentive is operational at present the level is shown with a ☺. Where there is potential for seeing the incentive operating at other levels these are shown with an ☺\*.

## **Specific recommendations relating to incentives options:**

### **8. Rate rebates/concessions**

**Jurisdiction:** Local/Regional/State/Territory Governments

1. Local and State/Territory Governments, with support from the Commonwealth Government, are urged to revisit the conclusions of *Conservation Hindered* by Carl Binning and Mike Young with a view to determining progress made in implementing its recommendations, and, if indicated mobilize further investments in rate rebating approaches for nature conservation.
2. Further, a Commonwealth and State/Territory supported system needs to be investigated to support under-resourced councils to manage rate decreases associated with such schemes.
3. Local governments, with Commonwealth and State/Territory Government support, need to establish criteria for identifying wetlands of highest priority for rate rebating schemes (see incentive 5 above).
4. Commonwealth and State/Territory governments are urged to consider extending rate rebates or exemptions to all other local and regional taxes where the primary land use is nature conservation, or there are broader river 'health' and similar issues at stake.

### **9. Bonus development rights**

**Jurisdiction:** Local/regional

1. Bonus development rights schemes operating as an incentive measure in Australia and elsewhere need to be carefully reviewed, and other trials possibly established to further investigate the costs and benefits of such schemes.

### **10. Direct grants**

**Jurisdiction:** All - Local/regional up to Commonwealth Governments

1. The lessons learnt from assessing the effectiveness of grant schemes in the past need to be clearly outlined and acted on in any continuation or expansion.
2. The targeting of grants needs to involve an assessment of the benefits generated against the costs involved. This will ensure that the best value for money is achieved. The targeting process can be coupled with Incentive 5 – 'recognition of important wetlands' – and Incentive 12 – 'ongoing management payments' to ensure efficiency.
3. See below also in relation to devolved grant schemes.

### **11. Devolved grant schemes**

**Jurisdiction:** Commonwealth Government

1. In its ongoing Natural Heritage Trust programs, the Commonwealth is urged to consider a continuation and expansion of devolved grant schemes for a range of wetlands-related activities. Such devolution is considered cost-effective with the added benefit of suitable NGOs being capable of using government funds to leverage

resources from the business sector and individual donors.

2. Government should continue to seek innovative ways to monitor the performance of devolved grant schemes but resist applying their own internal administrative standards as this could erode the cost-effective operation of the schemes. This may require coupling with Incentive 4 – ‘Capacity building’.
3. The targeting of grants needs to involve an assessment of the benefits generated against the costs involved. This will ensure that the best value for money is achieved. The targeting process can be coupled with Incentive 5 – ‘Recognition of important wetlands’ – and Incentive 12 – ‘Ongoing management payments’ to ensure efficiency.
4. Priority should go to targeting the payment of grants to leverage on private donations and sponsorships by offering dollar for dollar arrangements or similar co-payment schemes to assist in targeting wetland protection sites that are valued highly by communities.

## **12. Ongoing management payments**

**Jurisdiction:** State/Territory Governments, with the opportunity for greater Commonwealth Government involvement.

1. The incentive option of ‘bush tenders’ (conservation auctions), and stewardship payments warrants further consideration in Australia. The Commonwealth Government is urged to evaluate the current trials of such schemes in Australia, and look to develop further trials around the country. In this context, such trials should focus on freshwater wetlands of recognised importance (see incentive 5 above) at the catchment, national or international levels. Depending on the success of the trials, a national approach to conservation auctions/tenders should be considered.

## **13. Removal of perverse management (non-taxation) incentives**

**Jurisdiction:** State/Territory Governments

1. Perverse landuse incentives (such as minimum stocking rate requirements on pastoral leases or subsidies on irrigation water which may be aimed at securing regional development goals) which are impacting on wetlands need to be assessed in all jurisdictions, and where they are found to be contrary to the best interests of society (in a triple bottom line sense), they should be removed as soon as possible.

## **14. Removal of perverse tax incentives**

**Jurisdiction:** Commonwealth Government

1. Where taxation incentives are operating to encourage wetland degradation or destruction, and are found to be contrary to the best interests of society (in a triple bottom line sense), they should be removed as soon as possible.
2. The Commonwealth Government is urged to extend tax deductibility to include costs incurred in the protection of wetlands against other income sources.
3. Purchases of property for specific wetland conservation purposes should be exempt from the Goods and Services Tax.

## **15. Providing tax incentives for wetlands management**

**Jurisdiction:** Commonwealth Government

1. The taxation system needs to provide further options for allowing deductions and/or rebates for wetland protection expenditures and conservation covenants (see 14. above in relation to GST).

## **16. Tax incentives for non-government organisation**

**Jurisdiction:** Commonwealth Government

1. The Commonwealth Government is urged to allow membership dues of those non-government organisations promoting wetland conservation and wise use to be GST-free and tax deductible.
2. Further, to extend tax deductibility to 'bargain sales' of 'important' wetlands (see incentive 5 above) and ensure that property value losses due to covenanting are also tax deductible.
3. Also, the Commonwealth is urged to consider a co-payment arrangement to non-government organisations where a clear public benefits test is met.
4. The removal of the current inconsistencies which apply in the determination of which organisations qualify for tax deductible status is also warranted.

## **17. State/Territory government fee and tax breaks for conservation groups**

**Jurisdiction:** State/Territory Governments

1. State and Territory Governments are urged to exempt conservation organisations from the payment of taxes and charges levied on the transfer of land and water titles in relation to wetlands.
2. Further, to extend the exemption to include individuals when purchases of property are made through a revolving fund.
3. Exempt private landowners from fees and charges associated with splitting property titles where the purpose is to facilitate sale or donation to a private or public conservation body.
4. Review planning procedures to ensure disincentives (such as costs associated with preparing and submitting a development application) for moving to a conservation management land management regime are minimized.
5. Local, and State/Territory governments should ensure that the re-alignment of titles to facilitate ownership changes for conservation purposes are not classified as development applications and are exempted from bureaucratic burdens and financial penalties.

#### 18. **Mitigation banking, biodiversity credits and other tradeable rights systems**

**Jurisdiction:** State/Territory Governments

1. Further investigations are warranted into the potential use of wetland mitigation banking schemes in Australia. State and Territory Governments, possibly with Commonwealth Government involvement should examine the pros and cons of such schemes, and consider pursuing trials.
2. Likewise, the introduction on a trial basis of a wetland biodiversity credit scheme, with an associated performance bond (see Incentive 22), should be considered by all jurisdictions.

#### 19. **Third party independently assessed certification systems**

**Jurisdiction:** Commonwealth/State/Regional

1. It is recommended that the Commonwealth Government consider facilitating the establishment of suitable independently assessed certification systems in relation to primary production in conjunction with wetland sites. A prime candidate for this is beef production.

#### 20. **Facilitating change of ownership (see Incentive 17 also)**

**Jurisdiction:** Local/ regional

1. State/Territory governments are urged to allocate funds to establish, or expand existing “revolving funds” specifically for properties (and potentially water rights or allocation) containing significant wetlands.

### **4.4 Incentives which seek to either induce or compel changes in wetland management practices**

As foreshadowed in the previous section, among the 27 incentives options under consideration, 3 can be classified as falling into either the ‘induce’ or ‘compel’ category, depending on how they are used.

Land acquisitions (21) can be either voluntary or compulsory. Where they are voluntary, reference should also be made to incentives 17 and 20 above.

The other options considered below; namely performance bonds (22) and accredited licensing schemes (23) are very new concepts for Australia and accordingly warrant further review and possible trial before being considered for more widespread adoption.

**Table 6 (reproduced from Table 3 in section 3): Types of wetland protection incentives available for conserving wetland ecosystems\***

| How incentive operates |    | Type of incentive            | Local/regional application | State/Territory application | Commonwealth application |
|------------------------|----|------------------------------|----------------------------|-----------------------------|--------------------------|
| Induce/<br>compel      | 21 | Land acquisition             | ☺                          | ☺                           | ☺                        |
|                        | 22 | Performance bond             | ☺*                         | ☺*                          | ☺*                       |
|                        | 23 | Accredited licensing schemes |                            | ☺*                          |                          |

\* The incentives are grouped according to their mode of operation. The level of operation is also indicated. Where the incentive is operational at present the level is shown with a ☺. Where there is potential for seeing the incentive operating at other levels these are shown with an ☺\*.

## Specific recommendations relating to incentives options:

### 21. Voluntary or compulsory Land acquisition

**Jurisdiction:** All - Local/ regional up to Commonwealth Government

1. As part of the efforts to develop a national system of reserves which is comprehensive, adequate and representative there is a need to consider how this can be achieved for wetlands from a scientific perspective (see incentive 5 above), before then exploring options such as acquisition by government or through non-government organisations specialising in such acquisitions.
2. Where acquisition is deemed socially desirable, options to involve private sector management of protected wetland areas should be explored to ensure more cost-effective, flexible and innovative operation that forges links with the community.

### 22. Performance bonds

**Jurisdiction:** State/Territory Governments

1. The use of performance bonds needs to be investigated as an incentive option. This should include a review of the experience with mitigated wetlands throughout Australia and the world to ensure that any scheme of this type has appropriate safeguards based on the lessons learnt and to ensure valued functions are adequately conserved.
2. The proposed trial of a wetland biodiversity credit scheme (see incentive 18) should also include a performance bond requirement as an adjunct.

### 23. Accredited licencing schemes

**Jurisdiction:** State/Territory Governments

1. State and Territory Governments should investigate the possibility of applying an accredited licensing scheme to activities impacting upon wetlands, and how it might operate.

## 4.5 Incentives designed to compel changes in wetland management practices

The options addressed in this final section are not technically ‘incentives’, but rather mechanisms available to governments to compel or require a certain code of conduct or management practice from a wetland owner.

Four options are considered here; these being the commonly used local zoning regulations (24), State/Territory-level regulations (25) and the relatively recently introduced Commonwealth legislation the *Environment Protection and Biodiversity Conservation Act 1999* (26).

The final option considered is another new concept for Australia, that of ‘safe harbour’ or ‘duty of care’ agreements. Here again, the inclusion of this option is to signal that in some parts of the world such approaches are being used. It remains to be seen whether they would be acceptable to the range of stakeholders in the Australian context.

**Table 7 (reproduced from Table 3 in section 3): Types of wetland protection incentives available for conserving wetland ecosystems\***

| How incentive operates |    | Type of incentive                        | Local/regional application | State/Territory application | Commonwealth application |
|------------------------|----|--|----------------------------|-----------------------------|--------------------------|
| Compel                 | 24 | Zoning regulations                       | ☉                          |                             |                          |
|                        | 25 | Resource based regulations               |                            | ☉                           |                          |
|                        | 26 | EPBC Act – controlled actions            |                            |                             | ☉                        |
|                        | 27 | ‘Safe harbour’/‘duty of care’ agreements |                            | ☉*                          |                          |

\* The incentives are grouped according to their mode of operation. The level of operation is also indicated. Where the incentive is operational at present the level is shown with a ☉. Where there is potential for seeing the incentive operating at other levels these are shown with an ☉\*.

### Specific recommendations relating to incentives options:

#### 24. Zoning regulations

**Jurisdiction:** Local/Regional/State/Territory

1. Zoning should be used as a measure of last resort for highly values wetland areas due to its inflexibility and inequity. Where zoning is introduced, compensation to wetland owners should be investigated.

## **25. Resource based regulations**

**Jurisdiction:** State/Territory Governments

1. The use of regulatory controls should be considered only as an interim protection mechanism for very high value wetlands.
2. If regulations are introduced, monitoring and enforcement activities will be required to avoid the 'shoot, shovel and shut up' response whereby landowners effectively destroy their wetland asset in order to avoid being forced into actions against their will. This may require the use of 'safe harbour' agreements (see incentive 27 below).

## **26. Controlled actions under the *Environment Protection and Biodiversity Conservation Act 1999***

**Jurisdiction:** Commonwealth Government

1. The use of the controlled action provisions of this Act should be applied in order to protect places and species recognised as being of 'national environmental significance'. In this context, the full use of this provision in relation to 'important' wetlands (see incentive 5 above) and threatened wetland-dependent species is necessary where other measures (incentives and planning processes) operating at the local and State/Territory fail to recognise the importance of these. There is a need to ensure that application of these measures is supported by appropriate incentives to appropriately manage wetlands and to police possible perverse 'shoot, shovel and shut-up' incentives that may result.

## **27. USE OF 'SAFE HARBOUR'/'DUTY OF CARE' TYPE AGREEMENTS**

**Jurisdiction:** State/Territory Governments

1. State and Territory Governments are urged to review the potential for 'safe harbour' and 'duty of care' type agreements as an adjunct to their other incentive measures, and to consider undertaking trials to examine the utility of such schemes for Australia.

## **4.6 Summary conclusions**

While the above recommendations have been grouped according to the mode of operation of the incentives, it is also apparent that another way to organise them is according to the level of government at which they are designed to function. This has not been done here quite deliberately here. The authors believe that in order for a comprehensive and effective menu of incentive options to be put in place in Australia it is important that the efforts of all levels of government are considered together rather than in isolation. This does not necessarily mean a uniform approach in all jurisdictions. The nature of wetland ecosystems, the relative importance of different types of wetlands, the differing threats to wetlands and the socio-impacts of various incentives will differ. However, it does mean that the effectiveness of the best mix of incentive options will require a range of incentive types and involve a range of jurisdictions in an integrated way. In many cases the Commonwealth government will be best placed to facilitate the coordination of incentives among the various levels of government. Furthermore, the most effective incentives to achieve Commonwealth policies may well require the introduction of incentives at State/Territory or local government levels.

The simple approach to using the recommendations from this report would be to dissect it along local, State/Territory and Commonwealth Government lines, and to leave each jurisdiction to 'do their own thing' in terms of taking on board the recommendations offered above. One of the

weaknesses of such as approach will be at the local government level where those councils with a limited rates base will be immediately constrained to act. For these councils to act, support will be needed from both the State/Territory and Commonwealth Governments.

It is also obvious that while some States and Territories have useful schemes such as 'Land for Wildlife' and revolving funds, others don't. Commonwealth assistance and encouragement to see these established and well resourced in all jurisdictions is a key, and appropriate, national response.

Many of the new incentive options identified in this report as worthy of further review and possible trial (such as wildlife ranching, bonus development rights, mitigation banking, biodiversity credit schemes, performance bonds etc). While these may be identified as an issue for the States and Territories to pursue, there is also a strong case for the Commonwealth to work with and support the further investigation of these options in a national leadership role.

A further key consideration is that of identifying those wetlands of 'importance' toward which conservation efforts, and incentive measures, can be directed in the first instance. The Commonwealth and States/Territories have jointly produced *A Directory of Important Wetlands in Australia* with 851 sites recognised as nationally important in the third edition of this published in February 2001. While this is a helpful start, and an ongoing effort, it is a concern that for many parts of Australia the knowledge of the wetland resources remain very poor. This serious gap in Australia's planning framework needs to be addressed urgently.

Allied to this same issue is that of ensuring that Australia's most important wetlands, and those of international significance, gain the earliest recognition and are 'protected' through appropriate management regimes, whether provided by the public or private sectors. At present there does not exist a scientifically rigorous method for developing a comprehensive, adequate and representative system of aquatic reserves for Australia. This also requires urgent attention from the Commonwealth and all State/Territory Governments.

Another strong theme to emerge from the above recommendations relates to continuation of so-called perverse incentives, both financial and administrative, which are working against efforts to see wetlands conserved. Identifying and acting on these should be a high priority for all levels of Government. They are an anachronism and need to be recognised as such.

There is also scope for some fine tuning of the taxation system to make it more economically attractive for private landholders to either manage their wetlands for stronger conservation results, or pass their wetlands on to organisations or individuals who wish to. There are some anomalies operating at present that are acting to limit the opportunities and capacities of these same organisations to take on management roles for these wetlands. Some well focused action, especially at the Commonwealth level, could see these organisations become key elements of the overall strategy for wetland conservation.

It is also acknowledged that through various grants programs, governments are providing significant opportunities and incentives for private landholders to access assistance for wetland management. Ensuring that wetlands are prominent in the development of national targets and the associated regional and catchment-based action plans under the National Action Plan for Salinity and Water Quality will be a significant step in the right direction. However, there does remain a need for other grants programs under the Natural Heritage Trust and similar State/Territory and local initiatives, to be directing greater resources to on-ground wetland management action. The use of devolved grants schemes, making use of the expertise, enthusiasm and direct dealings with wetlands owners which non-government organisations can provide has its obvious advantages.

This report also acknowledges that there are more regulatory measures in place at all levels of Government that can, and at times do, also play a role in helping to protect wetlands. These

measures are very much at the other end of the spectrum to the first incentive considered above, that being the provision of management advice and assistance. There can be no doubt that through greater investment in education, and the sharing of wetland management experiences, the need for these incentives which compel landholders to act in a certain way will be reduced. Positive flow-ons could also be expected in terms of landholder interest in most of the incentives which are described above under the categories of seeking to facilitate or induce changes in wetland management practices toward conservation management. There exists a considerable resource base to support such an effort to raise community understanding and appreciation of wetlands; all that is needed now is to mobilise and organise the use of these resources.

## **5. OPPORTUNITIES TO PROGRESS INCENTIVES FOR FRESHWATER WETLAND MANAGEMENT WITHIN THE COAG WATER REFORM FRAMEWORK**

### **5.1 Introduction**

The Council of Australian Governments (CoAG), as part of the National Competition Policy (NCP), adopted a strategic framework to reform the Australian water industry in 1994. The CoAG Water Reform framework, as it has become known, was (and is) intended to improve economic efficiency and natural resource management within the water industry. These twin goals were to be addressed by:

1. economic reforms that sought to improve water resource allocation and generate improved natural resource management outcomes; and,
2. direct action to correct for past mistakes in water resource allocations and reduce their future occurrence.

The mechanisms designed to address these goals were dependent on reforms across the water industry including water property rights, pricing reforms, more rigorous assessments of future investments, and, specification of environmental allocations. The impact of the CoAG-induced Water Reform process on wetland management is significant because of its impacts on the management of water, a fundamental input to freshwater wetland ecosystems.

The impacts of the Water Reform framework on freshwater wetlands are specifically covered by the CoAG process, despite them not being mentioned specifically in the initial CoAG Agreement of 1994.

In this section the key areas of the CoAG Water Reform framework are briefly reviewed to assess whether they may provide additional opportunities to protect freshwater wetlands on private land in Australia. The recommendations provided here are intended as avenues for future research and policy development rather than fully developed proposals.

### **5.2 Water property rights and trading**

A key element of the CoAG Water Reform framework is the development of property rights in water. The following principles were developed by the Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ) for the implementation of property rights in water (CoAG Reform Taskforce 1995):

1. That all consumptive and non-consumptive water entitlements be allocated and managed in accordance with comprehensive planning systems and basin-wide assessment of the resource;
2. That water entitlements and institutional arrangements be structured so as not to impede the effective operation of water markets and such that, as far as practicable, trading options associated with water rights in water reside with the individual end users of water;
3. That water entitlements be clearly specified in terms of:
  - ❑ Rights and conditions of ownership tenure;
  - ❑ Share of natural resource being allocated (including probability of occurrence);

- ❑ Details of agreed standards of any commercial services to be delivered;
  - ❑ Constraints to and rules on transferability; and,
  - ❑ Constraints to resource use or access.
- 4. That acceptable rules on the holding and trading of environmental flow entitlements be resolved by jurisdictions at the same time as determining the appropriate balance between consumptive and non-consumptive uses of water;
- 5. That where interstate trading of water entitlements is possible, jurisdictions cooperatively develop, on a catchment-by-catchment basis, compatible approaches for (or at least clear conversion mechanisms between):
  - ❑ Planning systems and basin-wide hydrologic assessment mechanisms;
  - ❑ Water entitlement specifications;
  - ❑ Pricing and asset valuation arrangements;
  - ❑ Water entitlements and trading arrangements; and,
  - ❑ Provisions for environmental and other in-stream values.
- 6. That, in implementing and initialising property rights in water, jurisdictions call on water users, interest groups and the general community to be involved as partners in catchment planning processes that affect the future allocation and management of water entitlements; and,
- 7. That governments give urgent priority to establishing the administrative and regulatory arrangements that are necessary to implement and support the strategic framework.

The reforms to property rights underlie the reforms to water trading and allocation. Where they are appropriately developed and applied they can support the conservation management of freshwater wetlands. Hence, they are also a prerequisite of many of the incentives measures reviewed in Sections 3 and 4 of this report.

At present, the emphasis of the water property rights reforms has been to provide greater security to water users, and establish a sounder basis for water trading. This process is intended to occur without impacting upon the environment. However, it is not certain that the environment is protected, and in particular wetlands and water for wetlands are secured. For wetland management goals to be achieved, the emphasis on water property rights needs to be strengthened and developed to emphasise the importance of wetland conservation and sustainable use.

### **5.2.1 Understanding the environmental impact of water trading better**

The trading of water entitlements will change the point and timing of water extraction and the volumes of water extracted may also increase due to activation of sleeper and dozer licences.

Shifts in the pattern and level of water extraction can produce either positive or negative environmental impacts at the source or destination of the trade. They will also alter the amount and timing of in-stream flows.

Potential environmental impacts due to trading have been identified (Young *et al*, 2000) as:

- ❑ Environmental degradation at the point of origin
- ❑ Diminished environmental flows
- ❑ Environmental degradation at the point of destination
- ❑ Off-site effects
- ❑ Cumulative effects

Modelling of the impact of trading on environmental flows showed that “...*trade in water entitlements is likely to increase the differential between extractive demand and historical flow regimes as extractive water use concentrates on the most profitable crops.*” However, flow regimes can be improved if allocations are reduced by 5-10 percent and water-harvesting arrangements take into account the environmental requirements of wetlands (Tisdell 2001).

Recent trials and analysis of past trading has revealed that the environmental effect of water trading has been mixed. An analysis of water trades in the Riverland District of South Australia in 1990-3 and along the Murray River 1987-93 by Bjornlund & McKay (1996) indicated that the movement of water up-river has potentially negative environmental impacts. Trading augmented the salinity level in the river due to increased drainage inflow and reduced river flows, and thereby the dilution effect down river. The two year review of the Inter-state water trading trials in the Murray Darling Basin revealed that the environmental flow impact was probably positive but that there was a negative impact on river salinity (Young *et al* 2000).

Impacts on third parties have also been identified as an issue. Outward transfers can reduce leaching impact on surrounding properties. For example, in the Murray Region, some properties require a minimum watering level to maintain a sufficient leaching fraction to prevent the rise of salinity. Retention factors on trades have been suggested as a means of reducing this impact (Marsden Jacob Associates 1999).

To ensure that there is no negative environmental impact from water trading, an effective planning process that establishes targets for environmental flows and sets maximum levels of irrigation for specific sites is required. It is argued that lack of environmental certainty requires an adaptive approach to planning be taken. At present each State/Territory takes a different approach to catchment and river planning. New South Wales has started to formulate River Management and Land and Water Management Plans under the recently introduced *Water Management Act 2000*. The South Australian government requires water buyers to have completed an Irrigation and Drainage Management Plan. However there is anecdotal evidence that many plans are not acted upon and that requirements are not policed (Bjornlund & McKay 1996 , 1998. In many cases it is considered that regulators do not have the professional capacity or information base to assess the impacts of water trades (AATSE 1999).

On current evidence, planning and monitoring of environmental impacts is not sufficiently robust to support a widespread water trading market. According to Young *et al* (2000), in their review of the Murray-Darling Basin’s water trading trial, “*With regard to environmental degradation at each trading destination, our conclusion depends upon the degree to which plans are enforced and the adequacy of standards set. All States express problems in monitoring compliance with these plans, so one cannot be confident that the final outcome will be consistent with the goal set.*”.

Jones *et al* (2001) in assessing achievements under the CoAG Water Reform framework considers that no jurisdiction has in place sufficient (if any) environmental monitoring to detect the environmental impacts of water trade and unless monitoring and benchmarking systems are in place “*.. significant opportunities to tailor trading rules to improve ecological rules to improve ecological condition will be lost. Worse water trading may lock in further degradation?*”.

### **Recommendations:**

1. Environmental impacts of transferring water use should be sufficiently understood to assess the full impacts of trades. Rules should then be structured to ensure that trades result in a net environmental improvement. This may include the potential for environmental improvements elsewhere (see Section 3, Incentive 18 – mitigation banking and other environmental trading schemes).
2. Catchment and resource management plans should require assessment and monitoring of the environmental impact of water trades including the impact of salinity and

provision for the necessary level of environmental flows. States/Territory Governments should implement adequate procedures for monitoring, review and enforcement of plan compliance.

## 5.2.2 Regulating total water extraction from rivers

Current scientific assessments support the need to reduce the extraction of water from rivers and increase environmental provisions. According to a report by the CRC for Freshwater Ecology on the Murray-Darling Basin (MDB) Cap: “*The Cap is set at a level of diversions that contributed to the current degradation of the riverine environment, and while the Cap is an essential step in slowing on-going decline, there should be no expectation that the Cap, at its current level, will improve the riverine environment*” (Jones *et al* 2001)

At the present time unused entitlements are the principle source of traded water. Analysis of the results of water trading in Victoria and South Australia showed few sellers of water reduced their present irrigation activity, with 70% of the water traded in South Australia and 60% in Victoria previously unused (Bjornlund & McKay 2000). In the MDB water trading trial, it was reported that virtually all water traded to date has involved previously unused water (Young *et al* 2000).

Permanent trading of water allows it to be valued at its long run financial opportunity cost. This provides an incentive for the holders of unused allocations (sleeper/dozer licenses) to recover their fixed entitlement costs by transferring their allocations (Alaouze & Whelan 1996). Some examples of the price of permanently traded water are:

|                         |                       |
|-------------------------|-----------------------|
| □ Goulburn/Murray(1993) | \$150-\$800 per ML    |
| □ Sunraysia(1993)       | \$1000 per ML         |
| □ South Australia(1998) | \$300-400 per ML      |
| □ Murray(2000)          | \$1000-1150 per ML    |
| □ Riverland(2000)       | \$500-\$10,000 per ML |

(Pigram 1993; Young *et al* 2000; Bjornlund & McKay 1998)

There is also a significant level of temporary trading of water allocations. Temporary trades account for the majority of water traded with between 200,000 and 700,000ML per year traded in NSW (Pigram 1999), and another 200,000ML traded in Victoria (Earl & Turner 1999). In NSW these do not require environmental impact assessment. Prices for temporary water trades varied significantly depending on the season and region. Prices averaged approximately \$65 per ML on the Goulburn system and \$25ML on the Murray (Earl & Turner 1999).

A report on water trading by the CoAG High Level Steering Group (2001) argues that a reduction of unused entitlements may be an effective and economically sound approach in valleys whose activation would threaten sustainable development of the resource. It suggests this as the primary tool for the re-allocation of water particularly where there are opportunities for structural adjustment.

### Recommendations

1. **Water trading should not be allowed to increase the total level of water extraction from river systems, given that water trading provides an economic incentive to activate sleeper or dozer licenses.**
2. The total extraction of water must not increase at the expense of the environment due to water trading. Both temporary, seasonal trades and the

activation of sleeper and dozer licenses are likely to lead to a higher level of extraction.

### **5.2.3 Adopting an adaptive framework with regular review of entitlements to water**

Well defined rights to water allocations are a precursor to establishment of a robust market for permanent trading of water. The more secure and less open to change the water entitlement is the more valuable it will be as an asset and the more active the market (HLSG 2001). Several authors identify unclear or poorly defined rights as a major obstacle to the access and use of water (Cruse *et al* 2000, Pigram 1999, Alaouze & Whelan 1996). Cruse *et. al.* (2000) state that the right to use water must be “*clearly specified, enforceable and enforced, exclusive and voluntarily transferable*”. They go on to observe that the adaptive approach to water management being adopted in NSW may reinforce environmental objectives but undermine property rights.

#### **Recommendations**

1. Given the natural variability of river flows and the scientific uncertainty of determining environmental flow demands, the adoption of an adaptive framework and regular review of entitlements to water is warranted. An adaptive framework requires that governments have the ability to alter entitlements as circumstances change. This is likely to conflict with requirements that the rights of irrigators to water need to be well-defined and strengthened to support establishment of a robust market for trading of permanent water.
2. To minimise this conflict, water rights should be classified with different levels of security and restrictions. The security of the licence could also reflect its vulnerability to confiscation.

### **5.2.4 Learning from experiences with terrestrial ecosystems**

The development of water property rights raises the possibility that a number of innovative conservation tools that have been applied to terrestrial ecosystems may be developed for application to water ownership. These property rights are used to achieve conservation outcomes with respect to land beyond those achieved by government through reserve systems and other conservation management activities. For example, some organisations such as the Australian Bush Heritage Fund, Wetlands and Wildlife and Birds Australia are actively purchasing land to manage for conservation outcomes (see Case studies #10 and 11 in Section 3). Similar organisations could be encouraged to purchase water for conservation outcomes in the way that ‘Water Trusts’ have been actively doing in the United States for some years.

Similar land conservation tools such as conservation covenants could also be developed to restrict the uses to which water property rights could be put. Taxation incentives<sup>7</sup> including tax deductibility of any loss in value could also be useful in encouraging donation of such encumbrances on water property rights.

Finally, further development of options and futures contracts in water markets could provide a useful tool for conservation organisations interested in participating in water markets to achieve environmental goals.

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<sup>7</sup> Such incentives may already apply in some instances but may need to be tested.

## Recommendation

1. A range of conservation and sustainable land use incentives operating for terrestrial ecosystems could also be applied in the area of water resource use in order to achieve aquatic conservation outcomes. Governments and non-governmental organizations are urged to explore these, and seek opportunities to see them operate.

## 5.3 Provision of water for the environment

The CoAG Water Reform framework requires governments to establish comprehensive systems of water entitlements including property rights to water for environmental and in-stream values. This was further clarified in January 1999 to define 'comprehensive' as requiring the establishment of a sustainable balance between the environment and other uses for both ground and surface water. The sustainable balance must be consistent with the principles in the 'National Principles for the Provision of Water for the Environment' ARMCANZ/ANZECC, (NCC 2001), in the process of being updated at the time of writing. These principles are:

1. River regulation and/or consumptive use should be recognised as potentially impacting on ecological values;
2. Provision of water for ecosystems should be on the basis of the best scientific information available on the water regimes necessary to sustain the ecological values of water dependent ecosystems;
3. Environmental water provisions should be legally recognised;
4. In systems where there are existing users, provision of water for ecosystems should go as far as possible to meet the water regime necessary to sustain the ecological values of aquatic ecosystems whilst recognising the existing rights of other water users;
5. Where environmental water requirements cannot be met due to existing users, action (including reallocation) should be taken to meet environmental needs;
6. Further allocation of water for any use should only be on the basis that natural ecological processes and biodiversity be sustained (ie ecological values are sustained);
7. Accountabilities in all aspects of management of environmental water provisions should be transparent and clearly defined;
8. Environmental water provisions should be responsive to monitoring and improvements in understanding of environmental water requirements;
9. All water uses should be managed in a manner which recognises ecological values; and,
10. Appropriate demand management and water pricing strategies should be used to assist in sustaining ecological values of water resources.

Furthermore, CoAG requirements state that: "*Jurisdictions are to consider environmental contingency allocations, with a review of allocation five years after they have been initially determined*" (Council 2002).

Despite these extensive definitions, Fisher (2000) regards NSW as the only state with consistent and widely applied environmental flow guidelines. Cullen (2000) noted that some environmental flows have been specifically designed to protect wetland values; for example, the Barmah-Millewa red gum forest, the Macquarie Marshes in NSW and the Goulburn river floodplain in Victoria. These allocations are the exception rather than the rule and few environmental flows will reach wetlands on the floodplain. However, the condition of many wetlands is highly dependent on receiving flows and the condition of the riparian area (including wetlands) is a major factor in overall river 'health'. Furthermore, considering the impact of altered flow regimes on floodplain wetlands, many of the incentives that were considered in Section 3 are likely to be largely ineffective if water is not returned to the system in sufficient quantities and at appropriate times.

In its assessment of the achievements of the COAG Water Reforms, the CRC for Freshwater Ecology considers it critical that the allocation of water be undertaken using an adaptive framework. (Jones *et al* 2001). It has defined adaptive management in this context as being:

- ❑ Understanding of the current condition of the water resource
- ❑ Assessment of outcomes of current management
- ❑ Use of information to improve future management

### **5.3.1 Considering floodplain wetlands in determining environmental flow allocations**

In setting environmental flows for rivers there are two interlinked issues relating to wetlands. First, the environmental flows required for 'healthy' rivers often do not consider floodplain wetland interactions and hence are largely focused on in-channel environmental flow requirements. Second, there is the difficulty of considering environmental flows in systems that have high levels of variation along their length and through time. A strengthened and more explicit requirement that wetland health be considered when setting environmental flows could improve the incentives to wetland owners for wetland conservation. Put simply, without water there is no wetland and no incentive for wetland owners to practice wise use and conservation of their wetlands.

The seasonal variations in wetting and drying required by floodplain wetlands is difficult to accommodate within an annual environmental flow allocation. The development of mechanisms that facilitate sufficient carryover or borrowing of water to provide inter-temporal variation is one potential mechanism. An alternative mechanism is for the State/Territory governments to either allocate environmental contingencies on a variable basis or allow the inter-temporal allocation to be sold in years when it is not required. The potential for such mechanisms was specified in the CoAG reforms but does not appear to have been actively pursued in any jurisdiction as yet (although the NSW water reforms contain provisions for both tradeable and non-tradeable environmental allocations). Decision making on when to use allocations or trade-water could be delegated to organisations such as 'Environmental Trusts' as discussed next.

#### **Recommendations**

1. If the 'health' floodplain wetland ecosystems is to be addressed through COAG-induced planning and water allocation processes, then there should be a specific requirement that wetlands be given explicit consideration in setting and managing environmental flow requirements.
2. Further emphasis and development of appropriate rules under which part or all of environmental allocations should be tradeable (per the ARMCANZ principles for the implementation of property rights in water) is warranted.
3. The development of mechanisms (water banking for example) to accommodate inter-temporal variations in riverine water requirements and flows is also recommended. These mechanisms should incorporate consideration of appropriate conditions under which part or all of environmental allocations can be traded.

### **5.3.2 Putting in place the necessary management frameworks**

Management for inter-temporal and interspatial variation requires a degree of specialised knowledge and ability to experiment and adapt to differing conditions in differing rivers.

Therefore the management in different catchments will need to evolve over time. Government agencies are often slow to adopt new and innovative management systems. Currently, in many jurisdictions, water management plans are being developed with expected lives of 10 years, some with reviews expected after five years. In many cases these water management plans are being written in the absence of overarching integrated catchment plans or without water management outcomes having been defined. These will place further restrictions on the adaptability of government decisions, as well as potentially delaying the implementation of catchment management targets once finalised.

Furthermore, the current system whereby environmental flow allocations are often managed by the same body as consumptive uses in many areas raises the potential for regulatory capture of the allocative authority. Hence, there may be gains from separating decisions about how and when to manage environmental flows from basic riverine management decisions. One potential mechanism is use of a private trust. A trust is a legal assignment of decision-making powers to 'trustees' who manage assets on behalf of other people or groups according to specified goals. The goal of such trusts would be to maximise the health of the rivers (as broadly defined including floodplains and groundwater interactions) using the assets over which it has control. The assets would primarily be water property rights but may also include some closely linked land assets such as wetlands. Such trusts would therefore make decisions about use of the water on behalf of the wider community including the ability to decide when environmental flows are allocated and the right to trade part or all environmental flows in achieving their objectives. Precedents for trusts to manage natural resources are widespread in Australia and overseas, although rarely on the scale required to manage the water resources of a catchment. In order to ensure the trustees act in the interests of the community and carry out the mission of the trust three aspects of accountability should be included (Anderson and Fretwell 1999):

- ❑ specifying ways of measuring and monitoring the trustees' performance;
- ❑ compensating the trustees for acting in ways that correlate with the beneficiaries' welfare; and,
- ❑ enforcing specific behavioural rules or policies.

It is suggested that the relevant natural resource management and environment protection agencies jointly appoint the trustees, and that appointments be staggered to avoid political interference associated with elections. To ensure balanced decision making, the trustees should be drawn from a range of interest groups including environmental groups, local government, forestry and farming groups. Such Trusts could be self-sufficient because they would be empowered to sell water when not required for environmental purposes which could generate sufficient revenue to achieve the trust's objectives (including environmental monitoring). The separation of the trust from government would allow the body freedom from political influences in achieving differing goals across each catchment. One criticism of trusts has been accountability and monitoring. Requiring trusts to provide an independently audited report against their goals would achieve the monitoring goal. Accountability could be improved by allowing for legal suits to be brought on behalf of the community where the trustees are acting against the specified goals. In both cases these measures would improve monitoring and accountability beyond the level state government management is normally subject to.

The development of environmental flows and separation of land and water rights may not be universally appropriate for protecting floodplain wetlands, particularly where they are closely linked to rivers in regulated systems. For example, there have been a number of recent projects in the Murray and Murrumbidgee directed towards restoring a pattern of wetting and drying of wetlands such as those conducted by Wetland Care Australia in the Gurra Gurra Lakes. In most cases, these projects require water from environmental allowances to be allocated to facilitate refilling but receive no reward for reduced evaporation when they are dried. Opportunities exist for tied environmental licences to facilitate the management of such wetlands. For example, where drying a wetland makes a net gain in water availability, that gain should be available for use

in wetlands elsewhere. Similarly, where a net loss would be made, a licence could be made available tied to refilling the wetland according to a management plan.

Cullen notes one impediment to wider environmental flows management incorporating floodplains is the potential for legal action by landowners. In such cases the use of 'flood easements' should be considered to facilitate passage of water for wetlands. Cullen, Whittington and Fraser 2000. Flood easements would remove the right of landholders to sue under normal flood conditions (rather than due to negligence or other causes). Such easements could be arbitrary (designated according to historical flood patterns) or purchased.

### **Recommendations**

1. Alternative and innovative organisational structures to facilitate improved management of environmental flows need to be considered and developed such as environmental water or river trusts and 'easements'.
2. Additional consideration should be given to better ways of ensuring property rights to water best achieve the environmental needs of wetlands. Such consideration should consider broadening the range of bodies that may hold and manage water property rights.
3. The potential for innovative property right tools to facilitate the management of the land/water interface on floodplains should be explored including flood easements and tied environmental water licences among other options.

## **5.4 Water pricing**

CoAG has developed a number of water pricing guidelines to assist in achieving the goal of full cost recovery. These guidelines are flexible in order to give consideration to the circumstances facing different jurisdictions and because application of a rigid formula based approach could lead to unintended consequences in both pricing and outcomes. The principles developed by CoAG and endorsed by ARMCANZ (NCC 2001) are:

1. Prices will be set by the nominated jurisdictional regulators (or equivalent) who, in examining full cost recovery as an input to price determinations, should have regard to the principles set out below.
2. The deprival value methodology should be used for asset valuation unless a specific circumstance justifies another method.
3. An annuity approach should be used to determine medium to long term cash requirements for asset replacement/refurbishment where it is desired that the service delivery capacity be maintained.
4. To avoid monopoly rents, a water business should not recover more than the operational, maintenance and administrative costs, externalities, taxes or TERs (tax equivalent regime), provision for the cost of asset consumption and cost of capital, the latter being calculated using a WACC (weighted average cost of capital).
5. To be viable, a water business should recover, at least, the operational, maintenance and administrative costs, externalities, taxes or TERs (not including income tax), the interest cost on debt, dividends (if any) and make provision for future asset

refurbishment/replacement (as noted in (3) above). Dividends should be set at a level that reflects commercial realities and stimulates a competitive market outcome.

6. In applying (4) and (5) above, economic regulators (or equivalent) should determine the level of revenue for a water business based on efficient resource pricing and business costs. Specific circumstances may justify transition arrangements to that level, and
7. In determining prices, transparency is required in the treatment of community service obligations, contributed assets, the opening value of assets, externalities including resource management costs, and tax equivalent regimes.

With respect to the above principle the COAG Water Reform framework requires that charges to rural water users comply with the principles of full-cost recovery by no later than 2000/01. The National Competition Council assessed performance of jurisdictions according to the following requirements:

- ❑ Achieve full cost recovery;
- ❑ Where full cost recovery has not been achieved, establish a price path to achieve full price recovery beyond 2000/01 with transitional community service obligations (CSOs) made transparent;
- ❑ Where full cost recovery is unlikely to be achieved in the long term, make the CSOs required to support the scheme transparent;
- ❑ Make cross-subsidies transparent.

Full Cost Recovery was defined by the SCARM Taskforce on Water Reform through pricing guidelines for full cost recovery (NCC 2001). The guidelines determined there was no one best way of achieving full cost recovery, due to the varying circumstances of service providers. It provided a range of cost recovery levels, which would satisfy the full cost recovery requirement. The minimum level was the price required to maintain a viable business including the payment of interest to debt providers and the provision of dividends. The maximum price was one that recovered all costs, including a positive return on invested capital. Businesses operating above this maximum level would be considered to be benefiting from monopoly pricing.

**Table 8: Pricing for Full Cost Recovery**

| Minimum-Viable Business   | Maximum-All costs recovered  |
|---|--|
| <ul style="list-style-type: none"> <li>• Operational Costs</li> <li>• Maintenance Costs</li> <li>• Administration Costs</li> <li>• Externalities</li> <li>• Taxes</li> <li>• Provision for asset replacement</li> <li>• Interest cost on debt</li> <li>• Dividends</li> </ul> | <ul style="list-style-type: none"> <li>• Operational Costs</li> <li>• Maintenance Costs</li> <li>• Administration Costs</li> <li>• Externalities</li> <li>• Taxes</li> <li>• Provision for cost of asset consumption</li> <li>• Cost of capital</li> </ul> |

It should be noted that the NCC will ‘encourage’ jurisdictions to establish price paths to move service providers towards achieving a positive return on assets over time. However an acceptable time period has not been defined.

Of major relevance to issues related to wetland management, is the approach to externalities. Recovered costs must include environmental costs as externalities. In principle the Experts Group considers that costs of meeting environmental requirements should be borne by the beneficiaries/impactors. However when the beneficiary is the wider public, the costs would be borne by the government. In addition costs of protecting the environment above sustainability (not defined) levels would be borne by proponents.

The Experts Group (CoAG 1995) has classified environmental costs as:

- a) River management costs including :
  - ❑ Costs of implementing resource management initiatives;
  - ❑ On-going costs associated with resource management and monitoring; and,
- b) The allocation of a quantity of water from natural flows to meet environmental requirements.

The NCC did not penalise any States or Territories for lack of performance on full cost recovery, however it did identify flaws in the approaches taken by the jurisdictions. These points will be the subject of future assessments. For example, NSW has not provided a price path and has not achieved full cost recovery. Victoria has not included externalities into the pricing structure, and does not achieve full cost recovery.

The degree to which irrigation water pricing complies with the spirit of the CoAG Water Reform framework is debatable. The CoAG Reforms are intended to ensure the transparent inclusion of all costs associated with providing water are included in water prices, including a return on assets (where possible), and externalities. The main flaw with respect to wetlands management is the lack of inclusion of the ongoing costs of wetland degradation due to water storage and extraction.

CoAG principles indicate that inclusion of environmental management costs is sufficient, however environmental management costs are usually limited to direct intervention in relatively severe and directly related impacts. Further, costs of environmental management included in water prices are shared between extractive users and the broader community. The basis for these shares, and the definition of principles such as beneficiary pays and user pays, are not well defined in relation to water resource management costs. In many cases, it is the community paying to cover the cost of environmental damage caused by past users and water storages. Further, current users of water argue that they cannot be held responsible for past water damage, however the distinction between current damage and past damage related to irrigation practices is very hard to distinguish. The difficulty in identifying and estimating the cost of externalities imposed by consumptive use of water means that such a target is likely to be ongoing and require further research into the future.

The Commonwealth Government has developed draft Guidelines for Managing Externalities, (HLSGW, 2001a) however these have not been finalised, and do not provide sufficient guidance to jurisdictions on how to address these questions. Further, the time frame for the incorporation of externalities (once determined) by 2010 does not demonstrate sufficiently urgent government commitment or leadership to addressing this issue.

## **Recommendation**

1. Explicit estimates of the cost of the externalities of water extraction and use need to be developed so the full cost of consumptive uses of water are known. Methods for distinguishing between ongoing (and therefore avoidable) externality costs of past actions and sunk (or unavoidable) environmental costs need to be developed.
2. Appropriate cost sharing arrangements that split ongoing externality costs of past developments between consumptive water users and the wider community need to be developed and the water user share included in water pricing arrangements.

## **5.5 New water use developments and modification to existing developments**

Under the CoAG Water Reform framework, any new or additional development of water resources is required to explicitly include consideration of both economic and ecological sustainability.

### **5.5.1 Use of mitigation mechanisms**

As was considered in Section 3 (Incentive 18) the protection of freshwater wetland ecosystems could be enhanced by requiring all new water resource developments to mitigate their actions. Such a requirement to mitigate could be structured to encourage rehabilitation of degraded areas by use of exchange rates that favour such areas. For example, if water harvesting were proposed in a relatively undeveloped catchment the purchase of rights in an overdeveloped area could be required. The purchase of these rights would lead to an environmental gain compared to the environmental loss in the area proposed for development.

#### **Recommendation**

1. Explore the use of wetland mitigation mechanisms for new or expanded water use developments.

### **5.5.2 Taking into consideration international expert views and best practice**

In the past two years a number of significant international policy documents and guidelines have been produced which are of direct relevance to this area of water resource management and wetland conservation. Among these are the following:

- ❑ Report and recommendations by the World Commission on Dams
- ❑ Second World Water Forum and Ministerial Conference
- ❑ Guidelines on integrating wetland conservation and wise use into river basin management as adopted by the 7<sup>th</sup> Conference of Contracting Parties to the Ramsar Convention on Wetlands

It is both timely and appropriate that these, and other similarly authoritative resources be taking into consideration in updating the CoAG Water Reform framework.

#### **Recommendation**

1. The CoAG Water Reform framework requires revision to take on board the experience gained from implementation to date, and also the international best practice and guidelines which has become available in recent years.

## 5.6 Protection of high value rivers

The CoAG Water Reform framework supports the development of protection mechanisms for high value rivers.

Most Australian jurisdictions now have in place legal and other mechanisms which allow for rivers with significant heritage values to be identified and given special management status. Despite the availability of such mechanisms this tool for protecting high value rivers and their associated freshwater wetland ecosystems has not gained strong governmental support, and the concept of river ‘reserves’ is not yet being applied in any jurisdiction with any commitment or apparent system.

### Recommendation

1. The CoAG Water Reform framework provides the ideal vehicle for developing a nationally coordinated approach to developing a system of aquatic reserves and heritage rivers, and the Commonwealth Governments needs to take the lead to seeing this advanced.

## 5.7 Conclusions

The CoAG Water Reform framework for the water industry is a step in the right direction and offers significant potential to improve the conservation and wise use of wetlands in Australia. However, there are a number of areas where the CoAG reforms have either under achieved in terms of their original principles and goals, or in which further extension of the process could be used to improve the incentives to private wetland owners even more. The areas suggested for exploration have not been elaborated in a summary form here.

## 6. Future research priorities

Sections 3 and 4.2-4.5 identified through the recommendations they presented a range of immediate areas of research directed in particular at trialing certain newer incentive options. This relates to bonus development rights (Incentive 9), mitigation banking and biodiversity credit schemes (Incentive 18), performance bonds (Incentive 22), accredited licence schemes (Incentive 23) and 'Safe harbour'/ 'duty of care' agreements (Incentive 27).

Other areas of immediate priority are as follows:

### 1. Biophysical research related specifically to management of wetlands

There is need to have a greater understanding and ability to predict with greater certainty the impacts of alternative management strategies for wetland ecosystems. Wetting and drying cycles and varying grazing regimes are two prime examples. The National Wetlands Research and Development Program established in 1996, but which now seems to have been discontinued, should be reactivated and properly resourced to allow such practical, field-based trials of management strategies to be undertaken.

### 2. Estimation of 'transaction costs'

The costs of implementing, monitoring and policing the alternative incentive policies are not well understood at present. There is a need to be able to assess the relative cost-effectiveness of these alternative policies in achieving wetland management goals. It should be noted in assessing alternative policies that there is very little compliance monitoring of existing water management options. Comparisons between options also need to consider what 'should' be being spent on compliance in existing arrangements.

### 3. Identifying wetlands of 'importance'

Several of the recommendations relating to the various incentive measures described in Section 3, referred to focusing these efforts toward wetlands of recognized 'importance' at either the catchment/regional, State/Territory, national or international levels. Apart from developing better scientific systems for allowing such determinations of relative 'importance' to be made, there is also a need to consider how to integrate criteria for establishing ecological 'importance' with community preferences and attitudes at the appropriate scale. Without such research, which also examines how to factor in economic considerations, efforts to perform suitably rigorous benefit cost analyses will be hampered.

### 4. Integrating economic and environmental outcomes

Markets may be able to integrate environmental and economic outcomes if appropriate mechanisms, market structures and institutions can be designed. There is a need to better understand how environmental considerations can be best integrated into market structures and how these can be incorporated into wetland policies in particular.

### 5. Organisational structures and wetlands management

The policy mechanisms in this report clearly show that there are disadvantages associated with both a market and government approach to wetland conservation. However, differing organisational structures may be able to bridge this gap and deliver outcomes at market efficiency but without the disadvantages of market failures and similarly avoiding government inefficiencies. There is a need to better understand the range of organisational structures available to deliver policy and their advantages and disadvantages in policy delivery.

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## Appendix One:

Resolution VII.15 from the 7<sup>th</sup> Ramsar Convention Conference of the Contracting Parties, Costa Rica, 1999.

“Incentive measures to encourage the application of the wise use principle”

### “THE CONFERENCE OF THE CONTRACTING PARTIES

Paragraphs 1. – 10 omitted here.

11. **URGES** Contracting Parties to review their existing, or evolving, policy, legal and institutional frameworks to identify and promote those measures which encourage conservation and wise use of wetlands and to identify and remove measures which discourage conservation and wise use;
12. **FURTHER URGES** Contracting Parties more specifically to ensure that incentive measures are taken into consideration when applying the *Guidelines for developing and implementing National Wetland Policies* (Resolution VII.6) and the *Guidelines for reviewing laws and institutions to promote the conservation and wise use of wetlands* (Resolution VII.7);
13. **CALLS UPON** Contracting Parties, non-governmental organizations, donor agencies and others, in their application of the *Guidelines for establishing and strengthening local communities’ and indigenous people’s participation in the management of wetlands* (Resolution VII.8), to give special consideration to the introduction of incentive measures designed to encourage the wise use of wetlands, and to identify and remove perverse incentives where they exist;
14. **FURTHER CALLS UPON** Contracting Parties and others to share their experiences and lessons learned with respect to incentive measures and perverse incentives relating to wetlands, biodiversity conservation, and sustainable use of natural resources generally, by providing these to the Ramsar Bureau for appropriate distribution and to be made available through the Wise Use Resource Centre of the Convention’s Web site;
15. **REQUESTS** the Scientific and Technical Review Panel (STRP) and the Ramsar Bureau, recognizing that financial resources will be necessary for these purposes, to work in cooperation with the relevant bodies of the CBD and the Convention on Migratory Species, OECD, the International Association for Impact Assessment, and IUCN, and with the Contracting Parties and other relevant organizations, to: a) review existing guidelines and available information on incentive measures in order to prepare an Internet-based resource kit, including a catalogue of incentives and case studies; and b) explore the use of impact assessments as tools for identifying opportunities for implementing incentive measures;

16. **DIRECTS** the STRP and the Ramsar Bureau to prepare a report for Ramsar COP8 on progress in the design, implementation, monitoring and assessment of incentive measures and the identification and removal of perverse incentives, containing recommendations for specific actions to be taken by the Contracting Parties, governments, and other relevant organizations, as human and financial resources allow;”

## Appendix Two:

**Table 1: Wetland definitions used by selected governments in Australia**

| <i>Source</i>   | <i>Definition</i>  |
|---|--|
| The Ramsar Convention on Wetlands <sup>8</sup> (Article 1.1 of the Ramsar Convention)                               | Wetlands are “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the depth of which at low tide does not exceed six meters”. And “may incorporate riparian and coastal zones adjacent to the wetlands, and islands or bodies of marine water deeper than six meters at low tide lying within the wetlands”.   |
| Wetlands Policy of the Commonwealth Government of Australia (Environment Australia 1997)                            | Adopts the Ramsar definition given above, but specifically the following wetland types recognised under the Convention: ‘rocky marine shores and sea cliffs’ and the main in-channel elements of permanent rivers and streams, including waterfalls  |
| Floodplain Wetlands Management Strategy of the Murray-Darling Basin (Murray Darling Basin Ministerial Council 1998) | A floodplain wetland is a wetland situated in a depression on the floodplains of the rivers, creeks and tributaries of the Murray-Darling Basin.<br>The Council also notes:<br>These depressions often retain water, either permanently or temporarily, after floods recede. Hence, they develop or maintain distinctive wetland flora and fauna assemblages.<br>And:<br>They are important sites for breeding, feeding and drought refuge for an enormous number species dependent on wetlands for their entire life cycle or during critical parts of their life cycle.<br>It is recognised that floodplain wetlands perform many important functions necessary to maintain the hydrological, physical and ecological health of our river systems ... floodplain wetlands also provide economic, social and cultural benefits including grazing, forestry, fishing and agricultural activities and many recreational, educational and scientific pursuits. |
| The NSW Wetlands Management Policy (NSW Government 1996)  | Wetlands are defined as land that is: <ul style="list-style-type: none"> <li>• inundated with water on a temporary or permanent basis;</li> <li>• inundated with water that is usually slow moving or stationary;</li> <li>• inundated with water that is shallow; and,</li> <li>• inundated with water that may be fresh, brackish or saline.</li> </ul>  |
| A wetlands strategy for Tasmania (Department of Primary Industries, Water and Environment, draft, no date)          | Uses the Ramsar definition exclusions similar to those of the Commonwealth Wetlands Policy.  |
| Strategy for the conservation and management of   | Wetlands defined as “areas of permanent or periodic/intermittent inundation, whether natural or artificial, with water that is static or flowing, fresh, brackish or salt, including areas of marine water the   |

<sup>8</sup> The Convention on Wetlands, signed in Ramsar, Iran, in 1971, is an inter-governmental treaty which provides the framework for national action and international cooperation for the conservation and wise use of wetlands and their resources. There are presently 130 Contracting Parties to the Convention, with 1139 wetland sites, totaling 82 million hectares, designated as Wetlands of International Importance.

|   |  |
|---|--|
| Queensland wetlands<br>(Queensland Government 1999)   | depth of which at low tide does not exceed 6m.”  |
| Wetlands Strategy for South Australian Government (South Australian Government, draft, 2001)  | wetland - “...means a swamp or marsh and includes any land that is seasonally inundated with water.” ( <i>Water Resources Act 1997</i> )<br>this definition is taken to “... include tidal and estuarine systems, seagrass meadows, mound springs, salt lakes, permanent freshwater swamps and lakes, peat swamps and floodplain channels and swamps.” ( <i>State Water Plan 2000</i> )<br>And “Water is the dominant driver of the ecology of wetlands, with the duration, frequency, seasonality and sequencing of inundations being key factors in determining the productivity and biota of wetlands” ( <i>State Water Plan 2000</i> ) |
| Victorian Government (Natural Resources and Environment, no date)   | Victoria does not have a specific wetlands policy but incorporates a definition based on the Ramsar Convention within Victoria’s Biodiversity Directions in Management referring to:<br>“Naturally occurring depressions or floodplains which are covered temporarily or permanently by fresh, brackish or saline water.”  |
| Wetlands conservation policy for Western Australian (Western Australian Government 1997)  | WA applies the Ramsar Convention definition of wetlands but places emphasis on specific areas in its ‘Strategy for Implementation’ as follows:<br>“... applies principally to those types of environments that have more traditionally been regarded as wetlands. These include lakes, swamps, marshes, springs, damplands, impoundments, intertidal flats and mangroves.”   |
| A strategy for conservation of the biological diversity of wetlands in the Northern Territory of Australia (Parks and Wildlife Commission of the Northern Territory 2000) | A wetland is an area that is: <ul style="list-style-type: none"> <li>• covered by water for a substantial period, though not necessarily in every year;</li> <li>• contains water that is usually shallow, and slow moving or stationary;</li> <li>• contains water that may be fresh, brackish or saline; and,</li> <li>• contain water for a sufficient period for the plants and animals that live there to require adaptations to cope with or thrive in wet conditions for at least part of their life-cycle.</li> </ul>  |

## Appendix Three:

### The Ramsar Convention on Wetlands

Ramsar is not an acronym as many people think, it is fact a small city on the shores of the Caspian Sea in Iran. In 1971, the representatives of 18 governments, along with several non-governmental organizations and scientists, agreed to form an international convention to promote the conservation and wise use of wetlands. They recognized wetlands as vital for the future of humanity because of the roles they play in water and food supply, in protecting unique plant and animal species and for promoting economic development. Four years later, the Convention on Wetlands came into force, and because of its birthplace is today more commonly called the Ramsar Convention. The 2<sup>nd</sup> of February, the day when the text of the Convention was adopted in 1971, is now celebrated each year as World Wetlands Day. Australia is credited as being the first country to become a legal signatory of the Convention and has been a strong leader in the development of the Convention ever since.

Today, more than 30 years later, there are 130 countries that are members of the Ramsar Convention, with the expectation this will rise to 150 or more in the next 5 years. The Ramsar Convention is synonymous with the concept of wise use, which in Australia we equate to ecologically sustainable development. Ramsar is also an active player in promoting international cooperation for shared wetlands and river basins and the wildlife that migrates between wetland areas.

Ramsar's flagship is the List of Wetlands of International Importance, the so-called Ramsar sites. There are close to 1200 of these Worldwide; places recognized as having special natural values and which have qualified against the criteria established by the Convention (see Case study #11). Rather than being traditional 'protected areas' Ramsar sites are generally places where 'wise use' is practiced, and as such they are advertisements for the principles and approaches to sustainability. The Ramsar Convention is not anti-development, on the contrary it is about finding ways to use wetlands sustainably.

In Australia, there are 57 Ramsar sites at present, most of which are areas of public lands. Increasingly, there is trend toward private landholders seeking to have their wetlands Ramsar listed (see Case study #13 for example), and this reflects a realization that this is an action that can yield considerable benefits for the landowner, even though it is an action which cannot be reversed unless under extreme situations. The Commonwealth Government has enacted legislation (the Environment Protection and Biodiversity Conservation Act 1999) which recognizes Ramsar sites as having 'national environmental significance'. Accordingly, any area which is Ramsar listed must have a management plan that satisfies certain standards and criteria. Refer to section 6 for how to find out more about the Ramsar Convention and how it operates in Australia.

#### Sites of international importance for migratory birds

Australia has in place bilateral agreements with the Governments of both Japan and the People's Republic of China for conservation of the migratory birds which annually traverse the 'flyway' extending from New Zealand and Australia north through countries such as Papua New Guinea, Indonesia, Thailand, the Philippines and Vietnam, on through China, South and North Korea and Mongolia to the Russian Federation and Alaska.

At the 1996 global conference of the Ramsar Convention in Brisbane, Australia and Japan took the lead in seeing launched the Brisbane Initiative – the East Asian-Australasian Shorebird Site Network. This initiative aims to establish a network of the most important wetland sites used by migratory shorebirds on their annual pilgrimage to their breeding grounds and back. Today there are 29 sites on this network with 11 of these being in Australia. This initiative now forms part of

the over-arching Asia Pacific Migratory Waterbird Conservation Strategy 2001-2005 and is directed by the Shorebird Action Plan.

### **Nationally important wetlands**

In 1993, under the auspices of the Australian and New Zealand Environment and Conservation Council (ANZECC), the Commonwealth Government, in collaboration with the respective State and Territory Governments published “*A Directory of Important Wetlands in Australia*”. Applying criteria developed cooperatively for national application by the Commonwealth, State and Territory Governments this first edition of the *Directory* included descriptions of 520 ‘nationally important’ sites. The second edition of the *Directory* published in 1996 included 698 sites and in February 2001 the third edition of the *Directory* was made available with a total of 851 sites described. Further details can be obtained from the web site of Environment Australia at <http://www.environment.gov.au/water/wetlands>

