AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
http://ageconsearch.umn.edu
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

‘If you build them, will they pay?’ – Institutions for private sector nature conservation [*]

Stuart Whitten[#]

January 2001

[*] Paper presented at the 45th Annual Conference of the Australian Agricultural and Resource Economics Society, Adelaide. A Land and Water Australia Travel Fellowship and a Political Economy Research Center (PERC) Graduate Fellowship provided funding for the research presented in this paper. Particular thanks are due to Professor Jeff Bennett (The Australian National University) who provided significant input. Thanks are also due to the following people: Professor Daniel Bromley (University of Wisconsin), Professor Elinor Ostrom (Workshop in Political Economy Theory and Policy, Indiana University) and Dr Richard Stroup (PERC and Montana State University). The views and interpretations in this paper are those of the author and should not be attributed to the individuals and organisations associated with the research.

[#] School of Economics and Management, University College, The University of New South Wales, Canberra 2600. Email: sm.whitten@adfa.edu.au

Abstract

The nature conservation sector within Australia is dominated by the government sector. The degree of dominance in Australia is not necessarily exhibited in other countries, in particular the United States. The degree of dominance is suggested to be, in part, a product of the institutional framework that nature conservation is undertaken within. The institutional framework along with the characteristics of the goods and services produced shapes the range and type of activities undertaken by the private sector. The range of constraints faced by the private sector within Australia differs from those faced in other nations. In this paper some of these differences are identified. The implications are examined by reference to institutions and the resulting incentives in the United States and the United Kingdom in particular. The paper concludes with suggestions for policy strategies to mobilise the non-government nature conservation sector.

Key words: Institutions, Incentives, Non-government nature conservation

1 Introduction

Three quarters of Australia is privately managed via ownership or long-term lease.[1] Nevertheless, natural resource management, particularly with respect to nature conservation, has long been considered the domain of government. Governments have given relatively little consideration to the potential contribution of the non-government sector until recently. This has reduced the opportunities for private sector capital and expertise to be motivated and involved in natural resource management in Australia. The involvement of the non-government sector in natural resource management in some other countries, such as the United States and England, is much larger.[2] The two questions in Australia are; firstly, whether a larger non-government sector is desirable; and, secondly how it might be facilitated.

The first of these questions is comparatively easy to answer. The national significance of natural resource degradation in Australia is well known. The federal government alone has contributed several billion dollars to natural resource management and restoration as part of the Natural Heritage Trust fund, and more recently $700 million towards salinity issues. The problem is essentially the size of natural resource management problems relative to the size of government budgets to address these issues. Hence any increase in the contribution of the private sector to natural resource management is welcome.

The size of the non-government contribution in Australia is in marked contrast to the US in particular. The Nature Conservancy, the largest non-profit nature conservation organisation (NPO) in the US has protected over 4.5 million hectares, has over one million members and has an annual cash turnover of nearly $1.5 billion Australia (The Nature Conservancy 1999). Several other US private sector organisations have also conserved over one million hectares. The National Trust (not a nature conservation specific organisation) owns over half a million hectares in England, Wales and Northern Ireland. While there are several similar groups in Australia, their landholdings are relatively small (none hold more than 100,000 hectares except Birds Australia who recently purchased a 262,600 ha property in the Northern Territory). Although the fledgling organisations in Australia are growing rapidly (for example Bush Heritage has acquired several properties in each of the last three years) they do not have access to the range of tools available to US, and to a lesser extent, English NPOs as is demonstrated in this paper.

A second strong reason for a larger non-government sector is avoidance of government failure. There are several components to government failure. Firstly there is the impossibility of knowing the community's desires and how they change over time. Secondly, there are several incentive problems relating to any form of government action including legislative reform and collection and redistribution of taxes.

---

[1] While only 20.6 percent of land in Australia is held under 'freehold' ownership an additional 42.1 percent is privately managed under crown leasehold and a further 14.25 percent is owned by Aboriginal or Torres Strait Islanders.

[2] The contribution of the non-government sector in England is considered in this report but conclusions would be similar for Wales and Northern Ireland. The institutional framework differs significantly between Scotland and the remainder of the UK.

This paper is primarily concerned with how the contribution of the non-government sector might be increased. The outputs of natural resource management have generally been considered to be public goods and as such preclude production by the private sector due to market failure.[3] In this paper market failure is shown to be neither as pervading as is often considered, nor to necessarily lead to zero production of public goods as is often thought. The underlying hypothesis is that the degree of market failure is, in part, a result of the institutional structure rather than the nature of the goods and services produced.

Ways to increase private sector contributions are sought via examining the nature of the incentives facing natural resource managers. The current set of institutions generates a particular set of incentives that, in conjunction with the values held by managers, result in the private decisions that are made. Altering the current set of institutions will change the incentive structure facing resource managers, possibly leading to different outcomes. The challenge is to identify alternative sets of institutions that will improve natural resource management and hence increase the benefits to society. A partial answer to this challenge forms the conclusions to this paper.

A brief overview of the issue addressed in this paper has been provided in this introduction. A framework used to examine decisions about natural resource management, focusing on nature conservation, is summarised in Section 2. In Section 3 an overview of the framework for analysis is provided. The framework is used to analyse the institutional differences and to identify institution and incentive opportunities in Australia in Section 4. The paper concludes with a brief summary of the suggestions for policy changes.

3 A framework for analysis

The incentives of private sector natural resource managers are determined by their 'relationships' with:

1. Consumers of natural resource outputs;
2. Owners and managers of other resources required to produce outputs; and,
3. Those harmed if the resources were reallocated to other uses.

These relationships define the nature of the marketplace, or lack thereof, goods and services (both benefits and harms) are traded in.[4] These relationships are also shaped by the institutional arrangements relating to natural resources. To simplify the analysis, it is initially assumed there is a single owner of all resources combined to produce the outputs, and, that no restrictions exist as to how the manager can use these resources. These assumptions are progressively relaxed.

The relationship with consumers of natural resource outputs

The manager is assumed to seek to maximise the benefits from allocating the resources that jointly define the natural resource in question. Three questions then arise:

1. Can the consumers of particular natural resource outputs be identified?

[3] Where actions by the government sector 'crowd-out' actions by the non-government sector an issue of whether government failure is worse than market failure arises.

[4] Managers of natural resources are also consumers of the benefits and harms that are produced. The value they place on these benefits and harms also forms part of the incentive structure. These incentives may be significant as reported in Whitten and Bennett (1998, 2000a).

2. Can the natural resource system that produces these outputs be identified? and,
3. Can a fee be negotiated and collected for the goods and services consumed?

Identifying the consumers

Identification is simplified if thought of in two parts: first, the location at which consumption takes-place, and, second whether individual consumers can be identified. Consumers of goods and services that are consumed at the physical location of the natural resource are generally readily identifiable with the exception of aesthetic benefits to passers-by. For example, waterfowl are hunted in or near wetlands by hunters, domesticated stock that graze in the wetland are owned by the farmer, as are stock that become bogged in the wetland.

Consumers of goods and services provided to surrounding areas are more difficult, but not impossible, to identify. For example, pest control by waterfowl is only possible within a certain range of the wetland and only applies where the pest exists (for example in pastures). Consumers of 'fugitive resources'[5] are more difficult to identify. In many cases identification may be technically possible but prohibitively expensive. Some examples of the difficulty in identifying the consumers are shown for wetlands in Table 1. The implication is that a potential producer may not be able to identify the consumer with whom a contract can be negotiated to cover the costs of production.

Identifying the source of outputs

The reverse problem occurs where an output and consumer can be identified but the specific natural resource system that produced the output cannot. For example, in Table 1 these benefits and harms are represented by a 'No' or a 'Sometimes' in the column headed 'Defined link to wetland'. For many natural resources the linkages between the physical location of the natural resource that produced the output is poorly defined. For example, current knowledge and information is inadequate to measure the effectiveness of individual wetlands in providing flood mitigation or water quality outputs in most cases (Scodari 1990). Identifying a second class of outputs is subject to a stronger constraint. Benefits such as biodiversity and option benefits are concealed by the impossibility of predicting the future. Here it is not possible to measure the benefits that accrue from nature conservation.

The implication is that a potential consumer may not be able to identify the producer with whom a contract can be negotiated in order to secure supply of the output. This is in contrast to production processes for standard consumer goods that produce well identified outputs, for example a car factory produces cars and specific, measurable waste or by-products.

Negotiating and collecting payment

Goods and services produced by natural resource systems range from pure private goods (for example grazing for livestock) through to pure public goods (for example existence values)(see Table 1 for a classification of wetland outputs). Public goods are characterised as exhibiting non-rivalry and non-exclusion in consumption. Excludability here relates to the technical impossibility, or lack of cost-effective

[5] Fugitive resources are resources that can and do leave the physical location of the natural resource (for example birds). An alternative way of viewing fugitive resources is as resources that require inputs from multiple locations.

exclusion, rather than excludability issues relating to the property rights (or institutional) structure. In contrast to public goods, pure private goods are completely rival in consumption.

Table 1: Links between consumers and producers of wetland outputs

Benefit / harm	Location to which output supplied	Identifiable consumer	Defined link to wetland *	Type of good #
Wetland Benefits				
Waterfowl hunted	Wetland	Waterfowl hunter	End product	Private
Trapping/hunting	Wetland	Trapper/hunter	Yes	Private
Birds seen and identified	Wetland	Birdwatcher	End product	Private
Fish and crustaceans	Wetland	Fishers	End product	Private
Fish and crustacean nursery	Water linked areas	Fishers	No	Private
Timber	Wetland	Timber harvester	Yes	Private
Scenic vista	Wetland	Land owner and passers-by	No	Near public
Recreation	Wetland	Wetland visitors	Yes	Near public
Pest control	Surrounding areas	Neighboring farmers	Sometimes	Local public
Erosion control	Downstream	People downstream	Sometimes	D–public
Flood mitigation	Downstream	People downstream	Sometimes	D–public
Grazing input	Wetland	Land owner	Yes	Private
Fire break	Wetland	Land owner and neighbors	Yes	Local public
Ground water supply	Aquifer	Land owners within aquifer	Sometimes	Private
Water supply	Wetland	Land owner	Yes	Private
Improved water quality	Downstream	People downstream	Sometimes	D–public
Unknown future benefits	Unlimited	The wider community	No	Public
Future alternative wetland uses	Unknown	The wider community	No	Public
Existence of natural areas	Unlimited	The wider community	No	Public
Wetland harms				
Nuisance and disease vectors	Surrounding areas	Local community	Yes	Local public
Weeds	Downstream	Downstream farmers	Sometimes	D–public
Feral and pest animals	Surrounding areas	Land owner and neighbors	Yes	Local public
Reduced productivity	Surrounding areas	Land owner and neighbors	Yes	Local public
Fire danger	Surrounding areas	Land owner and neighbors	Yes	Local public
Bogged livestock	Wetland	Land owner	Yes	Private
Foul odors	Surrounding areas	Local community	Yes	Local public
Access difficulty	Wetland	Land owner	Yes	Private
Subject to regulation	Wetland	Land owner	Yes	Private

Note: Beneficiaries can and often do include the landowner.

* 'Yes', if the benefit can be linked to wetlands that produce the benefit.
'No', if the benefit cannot be linked to a particular wetlands.
'Sometimes' where some benefits can be linked and not in others.
'End product' where only the final output can be linked to the wetland.

\# Goods are defined as public purely on the basis that they are non-rival and non-excludible. Hence local public goods are non-rival and non-excludible within an area surrounding the wetland and downstream public goods (D-public) are non-rival and non-excludible downstream of the wetland.
'NPG' = Near public goods are goods that are non-rival but are excludible and may be subject to congestion.

The writings of Olson (1965) and Cornes and Sandler (1996), are pessimistic about the potential for private sector production of public goods but do provide a theoretical framework within which it can occur. Entrepreneurs and local communities (see for example Ostrom 1990) also find ways of excluding consumers from goods that were previously non-excludable. Some ways that public goods are produced include:

- The owner may receive sufficient incentive from personal consumption of outputs. Owners of natural resource systems are in a unique position in this respect – they often live very near the system and can enjoy many of the public and private benefits provided.
- The owner may be able to internalise sufficient outputs in addition to those they personally consume. That is, the total private benefits outweigh the apparent monetary costs.
- Using institutional structures that reduce otherwise prohibitive transaction costs. Nature conservation organisations can act as franchises for consumers seeking to purchase conservation outputs by attaching their 'brand name' to conservation. These organisations also reduce the asymmetric information between consumers and producers. These groups also reduce the free-rider problem by use of newsletters and public acknowledgment of participation.

The relationship with owners of other resources combined to produce outputs from natural resource systems

Ownership of resources that are combined in natural resource systems is usually divided. Furthermore, ownership rights and responsibilities are often further subdivided. For example, land can be divided into floodplain and non-floodplain areas and vegetation into indigenous and non-indigenous species and further between endangered and non-endangered species. Ownership of each of these classes of resource may grant the owner a different set of property rights and hence access to differing rent streams. As a result, different resource owners will have access to differing benefit streams, some of which may be negative. The institutional framework defines the relationship between these different resource owners. Institutions are defined as 'rules of human conduct whose violations carry sanctions' (Kasper 1998, p. 44).

<u>The meaning of resource ownership</u>

Resource ownership can be defined by a set of property rights. Property rights are defined as 'a claim to a benefit (or income) stream that the state will agree to protect through the assignment of duty to others who may covet, or somehow interfere with, the benefit stream' (Bromley 1991, p. 2). Barzel (1997, p. 3) provides an identical, albeit refocused, definition based on the degree of protection afforded the property right holder: '*the individual's ability, in expected terms, to consume the good (or the services of the asset)* directly or to consume it indirectly through exchange.'

Property rights must be excludable, divisible (in both space and scope), and, alienable (or transferable) to be effective (Kasper and Streit 1998). Excludability confers exclusive access to the benefit stream that gives value to the resource. Exclusivity relies on the practicality of excluding potential consumers from benefit streams. Alienability grants the ability to exchange one benefit stream for another that generates higher values, either directly or in combination with other resources. Divisibility is the ability to separate the bundle of property rights in space and scope. Divisibility allows property right owners to exchange excess resources.

The problem with many natural resource benefit streams is that they are essentially non-excludable, for example scenic vistas or flood mitigation via wetlands. Private access to other potential streams of benefits from wetlands have been reduced or removed by the state. For example, land clearance regulations (in most Australian

States) and banning duck hunting (in New South Wales) remove access to the associated benefit streams from timber harvesting and access for waterfowl hunting. Some property rights over other outputs are inalienable or owned by others. For example, many potential benefits from ranching native fauna are retained by the state (such as: sale as pets, for game production or to restock areas where they have become extinct).

Decision making with multiple resource owners

Agreements between owners of multiple resources required to produce natural resource outputs are costly (Barzel 1997). The size of the losses in exchange (the transaction costs) is, in part, determined by the structure within which the resources are exchanged or combined. These exchanges include those both within and between individuals, firms, governments, clubs, families and non-profit organisations (Barzel 1997). [6] Alternative institutional structures may reduce the size of the transaction losses. Repeat negotiation and enforcement costs can be replaced by one-off transaction costs via purchase of the resource. Hence, Coase's famous article on the nature of the firm (1937) and the subsequent body of literature (see for example Williamson and Winter 1991). These costs then become organisational costs within the purchasing entity. Three points are of importance:

1. Organisational structure influences production and purchase costs through incentives provided by taxation institutions.
2. The organisational costs within alternative structures may differ significantly. For example, different organisations specialise in different areas and tasks.
3. Purchase of resources can also allow the benefits of horizontal or vertical integration to be realised.

Governments have sometimes sought to create institutions that further reduce the transaction costs by concentrating decision-making or granting specific organisation structures a competitive advantage. Organisations also reduce transaction costs via delivering facilitating consumers or contributor ownership of some or all production resources. Institutional structures that are able to meet threshold requirements for taxation incentives have a major competitive advantage. The largest example of NPOs acquiring resources to produce public good outputs is The Nature Conservancy in the US.

The relationship between natural resource managers and access to benefit streams

Individuals are not privileged with free and unfettered access to all potential benefit streams that resource ownership could provide. Access to benefit streams is restricted by two main constraints:

1. The right to freedom from wrongful harms as traced from common law precedents, in particular from the English Court system.
2. Regulation imposed as a result of government legislation.

[6] The costs of contracting between these parties may well be significantly different. For example, discussions with non-profit and government officials undertaken by the author suggest that contracts between government and individuals are more costly than between individuals and non-profit organisations. Direct analysis of this phenomenon is beyond the scope of this paper, but important in determining the relative extent of government versus market failure.

Common law restraints

Common law precedents have evolved differently over time in England, Canada, the United States, Australia and other countries.[7] They are based on the maxim 'use your own property so as not to harm another's'. 'The maxim reflects a balance under the common law between the rights of neighbors to both *use* and *enjoy* their property; in using one's property, another's enjoyment must not be compromised' (Brubaker 1995, p. 40). Many polluters argued that their actions were for the greater 'public good', however judges explained that it was for government to consider the 'public good' and for the courts to protect individuals' rights (Brubaker 1995). A major technological problem is tracing the source of the harm. Brubaker (1995) suggests that while this remains a problem, new technologies, particularly those that place a 'signature' on the pollutant or damaging agent, are strengthening the usefulness of common law.

Regulation

Legislation that results in regulations constrains the freedom of contract. Individuals are denied the opportunity to contract to have their rights imposed upon hence freedom of contract is constrained. These changes have generally been premised on one or more of the following:

1. The 'public good' outweighs the harm to individuals;
2. Attempts to reduce the transaction costs associated with litigation in the courts by replacing it with a regulatory structure; or,
3. Shifting the cost, or burden of proof, from those harmed (as is the case under common law) to those who are potentially harming. This is otherwise known as the 'precautionary principle'.

'Public good' regulation has two main impacts:

1. Beneficiaries receive a 'free good', while imposing harms without compensation on others is generally referred to as a 'taking' (Brubaker 1995); and,
2. It changes the incentive structure of both the beneficiary and those harmed.

Transaction costs in using courts remain high. Legal aid has increased court access in some countries but a base level of knowledge about rights and the legal system is required to access the courts.[8] Hence, government has often replaced common law rights with regulated outcomes. These systems are limited in the compensation they are able to provide and are potentially subject to 'capture'. Such institutions result in 'compulsory takings' at the arbitrator's price.

The transfer of the burden of proof is generically called the 'precautionary principle'. Use of the precautionary principle is warranted in some cases (such as inherently dangerous activities) but results in additional transaction costs to gain access to the benefit stream and potentially fewer incentives to produce some benefit streams.

---

[7] The right to freedom is only from specified harms that are determined to be wrongful. For example, a new shopkeeper opening next to an existing store may well harm that store's owner. However, such harms are a legitimate part of business and shopkeepers are not usually entitled to protection.

[8] Legal aid does not reduce the transaction costs of a court action but rather redistributes them to all taxpayers. However, it can be argued that legal aid increases the likelihood of a legal suit, hence reducing the likelihood of actual damage and generating net benefits to society.

4 A comparison of the US, UK and Australia

In this section the tools used by the broad range of organisations active in the US and English conservation sectors are used to demonstrate the differences in institutions faced across the three countries. The tools are grouped into the following areas for ease of comparison:

- Property Rights;
- Regulatory Structure;
- Contracting and organisational structures; and to a lesser extent,
- Common Law.

The comparison is then used to develop some recommendations to build institutions that will increase the size of nature conservation activities by the private sector in Australia.

Property right tools

Natural resource property rights consist of the property rights associated with the constituent resources such as land, water, flora, fauna and minerals. In general, the underlying property right structure in the US and, to a lesser extent the UK, is more complete in terms of *exclusion, divisibility* and *transferability*. Hence, there are more avenues and incentives available to the private sector to conserve natural resources as demonstrated in this section.

Resource ownership and transferability tools

Ownership of non-land resources is not always well defined. Where resources are not scarce, well-defined ownership is generally not a problem (see for example Anderson and Leal 1991). Where competition to capture scarce resources exists, well-defined ownership is important in defining who has the right to exclude others from which benefit streams, and as a starting allocation point to facilitate gains from trade. The property rights associated with land resources depend on the title under which the land is held. Fee simple and freehold titles are the largest possible bundles of property rights to land but remain subject to the police powers of government. That is, the right of the state to restrict the actions of its citizens in order to protect their well being. Regulations, including zoning and planning laws, fall under this right. In addition, the crown (the state) is able to directly withhold specified rights (such as mineral rights in Australia) under freehold title.

The range of uses on leasehold land may be restricted.[9] The resulting restrictions on the actual or potential benefit streams may be significant. For example, leasehold title in Australia does not normally include the property rights that allow for nature based tourism to take place on the land (Tropical Savannas Cooperative Research Centre 1999, Industry Commission 1998). The mechanisms for acquiring these rights are generally not well defined. Hence, the first suggested incentive measure is a clearly structured set of steps for leaseholders to acquire (purchase) or be granted rights that would increase the incentives to conserve natural resources.

One resource subject to ongoing ownership disputes is water. In Australia, the state governments hold all water rights. Property rights to water are granted via licenses to use or otherwise control water. Historically these licenses have been poorly specified

[9] Many crown leasehold lands are held under perpetual leases. In such cases the ownership structure is essentially restricted freehold.

in terms of quantity (if specified at all), tied to land and indivisible. Major reforms are currently being enacted in most states that are aimed at increasing the security and flexibility of water property rights. Continuation of this process is critical to facilitating the access to tools suggested below, particularly those relating to water. In particular, secure, transferable title to water is crucial to facilitating efficient use of water – an issue revisited under 'Regulatory structures'.

Some wetland managers in Australia have applied for the rights to additional water that would be conserved if the wetlands were returned to a more natural wetting and drying patterns. The water rights would then be used to flood currently droughted wetlands. The underlying principle is that where a resource is conserved, access (or ownership) to the conserved proportion may create an incentive to improve management.

Native fauna rights are generally retained by the government in both the US and Australia but can sometimes can be obtained via a license. In some areas, such as New South Wales, whole areas of hunting rights have also been withdrawn. For example, the right to hunt waterfowl is not available except for pest control purposes. In other cases, landowners are able to purchase specific rights to engage in pest control. Landowners have no direct incentive to produce native fauna but can only indirectly benefit via charging to access their land resource to hunt. Separation of rights in the US, Colorado, California and Utah allow greater incentives to landholders that participate in 'ranching-for-wildlife' programs (Anderson and Leal 1991). Tasmania has a similar system of 'ranching for wildlife'. Hence, where a resource is conserved or increased, consideration should be given to allowing access to the resource (as argued above). Earth Sanctuaries provides a practical example of the lack of incentives to resource owners. Earth Sanctuaries has no title to the native fauna produced on its land, hence it is difficult for the company to list increases as an increase in assets or to sell the fauna.

Flora is generally considered a stick in the bundle attributed to land. In some cases the flora resource can be separated from the bundle. In Victoria and Tasmania in Australia the property right associated with trees can be separated under an agreement that is attached to the title of the property. The agreement gives access to the '*profit a prendre'* for the forest, or the right to trespass on another's land and take away the forest products (Industry Commission 1998). The separation of the flora stick can change the incentives to landowners to manage the flora on their land. For example, landowners may be able to sell the timber without harvesting it via an easement or 'profit a prendre' to a conservation organisation. This concept is extended in the next subsection.

<u>Tools relating to resource separation</u>

Once property rights are well defined, individuals are often able increase their welfare by trading access to benefit streams. Trades of access to some benefit streams from resource ownership can be thought of as dividing property rights in scope and space. If property rights are thought of as a bundle of sticks, separation in space is cutting the bundle into several shorter bundles (retaining the same bundle of rights but over a smaller area). Separation in scope removes stick(s) from the bundle.

The ability of private-sector organisations to use easements and covenants to separate some sticks from the bundle of property rights differs significantly between Australia, England and the US. The prerequisite for innovative use of easements is well-defined resource ownership. Within the US, the right to enforce an easement can be held by non-profit private-sector organisations; indeed the land trust movement is largely based on this ability. In England, restrictive covenants can generally only be held by neighbouring landowners but other rights, such as the right to fish from the land, can be separated from the bundle. Rights removed from the bundle by easements in Australia are either held by neighbouring landholders, or revert to the crown (usually the state government). Private sector organisations can help to broker such agreements in Australia but they are not (yet) able to hold the right to enforce the easement. Therefor easements and covenants become a contract between the crown and the landholder and not the NPO.[10] Hence, the instrument that facilitates ongoing protection is lost to the private sector, which must then rely on government to protect their gains. Many states in Australia are currently legislating remove this disincentive.

Use of easements in the US is extremely flexible. For example, easements can be used to restrict stock access to specified areas such as wetlands, timing of hay cutting and other activities. Easements could also potentially be used to restrict access to benefit streams associated with water, flora and fauna as follows:

- Water easements could be used to restrict use in many ways that may benefit wetlands including time of year, reach of river, maximum or minimum stream flows and end usage.
- Flora easements could be used to restrict timber harvests by deferring harvest, defining tree species or sizes that can be taken, time of year harvesting operations can occur and coup harvest strategies[11] among others.
- Fauna easements could be used to restrict species harvest by age, sex, time of year or areas that can be harvested.

The above outcomes could also be accomplished via lease contracts but easements remove repeat negotiation costs and achieve long term protection. Easements can also be granted in reverse. For example, the state could grant access to specified native flora or fauna in return for restrictions on resource use such as an easement removing access to benefits from separating natural resources.

Easements are usually perpetual and essentially non-transferable.[12] Use of temporary easements and easement sales should be allowed to facilitate changes in conservation portfolios over time. While temporary easements are similar to leases, they are carried over to new resource owners because they are attached to the resource title rather than to the owner. Temporary easements allow resource owners to trade-off the benefits received if restrictions are imposed on access to specified benefit streams for a specified time-period. However, perpetual easements are a one-off decision about future landuse. For example, consider a timber company that owns a forest that has

[10] In some cases the NPO may retain contractual obligations relating to monitoring the easement but are unlikely to have legal standing to enforce the easement with the exception of the Trust for Nature in Victoria.

[11] Coup harvest strategies include how large an area is harvested at one time and how long before adjacent areas are harvested.

[12] Easements can be removed if the landowner and the holder of the encumbrance agree that is no longer serving the purpose for which it was intended.

reached the age of optimum timber returns. An easement that precludes harvesting essentially purchases the net value of the wood in the forest plus the expected future income stream from timber production discounted to a present value. However, an easement that defers harvesting will only cost the return on current timber value less additional timber produced (including risk). Such a tool would be useful where the perceived future value of forests differs between a development oriented owner and potential conservation oriented purchasers. The tax treatment of temporary easements is important to the incentive structure and is further discussed under 'Transaction incentives'.

Other restrictions on resource separation are also of importance. For example, there are minimum block and section areas. These landholdings cannot easily be further subdivided in some parts of Australia. Therefore, individuals who would like to purchase part of the area for its conservation benefits (for example wetlands) are unable to. Consideration should be given to relaxing such constraints.

Regulatory tools

Regulations constrain the range of benefit streams available to holders of property rights. Regulations are generally focused on either resource based or area based restrictions. Resource based regulations restrict access to benefit streams from specified resources. For example, endangered species legislation (ESL) often restricts access to benefit streams that may affect designated endangered species. Resource based regulations can be interpreted as a 'one size fits all' approach. Zone based regulations restrict access to specified benefit streams based on the geographic position of the resource.

Resource based regulations

ESL type resource based regulations are enacted at the state level in Australia. Most states have also enacted regulations that remove the right to clear native vegetation from land. Hence, landowners have reduced access to benefit streams relating to native vegetation. Resource based regulations have also been enacted restricting access to benefits from changing the hydrology of wetlands, or floodplains more generally. These restrictions can amount to conservation focusing on land inputs rather than a mix of land, capital and labour inputs (see for example Whitten 2000). Such restrictions also increase the perverse incentive for resource owners to 'shoot, shovel and shut-up' where they may be subject to the legislation. Alternative strategies would modify the incentive structure to the bureaucracy and landowners.

One potential strategy is to create and promote 'Safe Harbour' agreements as a way of reducing the perverse incentives under ESL type regulations. 'Safe Harbor' agreements guarantee to resource owners that they do not become subject to ESL type legislation due to improvements resulting from their management actions (Environmental Defense 2000). For example, if a landholder creates or increases endangered species habitat they are not precluded from modifying landuse in these areas later. In particular it is suggested that habitat rehabilitation and restoration projects (for example, wetland restoration projects) automatically qualify for 'Safe Harbour' type agreements.

A suggestion to increase the mix of inputs is transformation of the prohibition components of regulations to a 'duty of care to protect the survival of the species'

oriented framework.[13] Under such a framework, the landowner would be required to show that the endangered species, wetland, or native vegetation had been protected, either on his land or elsewhere. Under such an arrangement, landowners that successfully increase endangered species under 'Safe Harbour' agreements would be able to benefit by selling 'credits' to other landowners that wish to 'take' such species. This concept is known as 'mitigation banking' where applied to wetlands and 'conservation banking' when applied to other resources.

Using credits from projects that have already succeeded eliminates concerns associated with unsuccessful restoration projects. A second concern is that such projects do not lead to an increase in endangered species, wetlands or native vegetation. Critics are also concerned that a restored or created wetland (or area of native vegetation) does not possess the same attributes as that destroyed, hence net losses of value still occur (that is, there are quality concerns). Both concerns can be addressed by 'like for like' and 'exchange rates'. 'Like for like' would specify that the same endangered species must be provided, or similar wetland habitat or native vegetation, or that the environmental good must be provided within a certain distance of that damaged. The concept of 'Exchange rates' is similar but addresses quality issues. For example, a landowner could be required to provide 150% mitigation in order to take an endangered species. California is the only State in the US that currently embraces the concept of conservation banking (Environmental Defense 2000).

Use of mitigation strategies facilitates a broader mix of inputs into conservation of endangered species. It will also lead to greater efficiency in resource allocation. For example, users of resources that are of high value in alternative uses will mitigate in order to change resource use, while those with low value could become conservation banks. Unfortunately, the costs of such legislation remain largely off budget. One solution, though politically unpalatable at present, is to bring such enforced conservation on budget by requiring compensation for the removal of property rights. Such laws are termed 'takings laws' and seek to make potential pareto improvements operational. Where compensation is offered it should only be for the difference between the use prevented and the highest alternative benefit stream.

Zone based regulations

Zone based regulations are common at both state and local government levels.[14] The state government often sets a minimum or underlying zonal restriction. Local governments add additional layers of zoning regulations that further restrict resource use. Because of the specific bundle of resources that comprise many natural resources, resource based regulations are generally more restrictive than zone based regulations, particularly in agricultural lands.

Zone based regulations are developed within a planning framework. They usually require an application to access the property rights required to change resource use within the specified zone (if any changes are permitted). The planning process incorporates a number of inefficiencies: it is high cost (in terms of decision-making),

[13] I am indebted to Rick Stroup for this suggestion which I have combined with extensions to Environmental Defense's 'Safe Harbor' agreements.

[14] In England, zone based regulations are also applied at the national level, for example via declaration of national parks and sites of special scientific interest (SSSIs).

subject to regulatory capture, and, has few incentives to minimise bureaucracy. Hence, a question arises as to when the benefits of a command and control planning solution are sufficiently large to outweigh the potential costs.

Where planning processes are used, it is important to ensure safeguards to facilitate input of community desires and protect environmental outcomes. Where individuals are adversely effected by the development, they should have access to the process.[15] Adverse effects should include both monetary and non-monetary impacts. Secondly, where a resource owned by the state is adversely affected, non-profit groups should have access to the process on behalf of the state. In both cases it is important to carefully consider the burden of proof as this can substantially change the threshold for access to the process and the costs of the process. As a first step in this process it is suggested that activities with well documented off-site impacts, or considered high risk, be required to prove these will be prevented (or compensated for). That is, the precautionary principle should be applied to high-risk activities. One scheme that has been used successfully in Canada and some US states is a development bond that is held until it is shown that impacts are negligible (for example some mines in British Colombia, Canada). A similar approach is to require an insurance policy to cover environmental damage because of the development.

Where some damage to natural resources is envisaged and accepted, as is often the case under both zone and planning based regulation, there is often a case for spelling out the maximum level of damage that would be acceptable. Once the level is quantified development rights can potentially be issued and traded (referred to as tradeable development rights). If some resources or zones have higher habitat value than others then exchange rates can again be used to specify a level of conservation. This approach is sometimes referred to as the 'Habitat Transaction Method' (Corkindale 1998). The habitat transaction method is being used to help protect valuable habitat in some parts of California, yet to retain flexibility in development decisions.

<u>Inconsistent regulations and property rights</u>

Alternative owners are sometimes treated differently under the same property right regime. Such problems are related to property rights, but the tools are available in these cases while access to them is restricted. For example, water property rights could not historically be owned unless riparian land was owned and the restrictive rights granted by easement or covenant can only be held by the State. Hence, it is recommended that, as a minimum, all potential participants have access to a similar toolbox of property rights and institutions.

Common law tools

The complexity of legal knowledge required to fully assess the differences between the common law in Australian, England and the US is beyond the scope of this paper. However, several potential disincentives to private sector conservation have been identified.

[15] Society explicitly allows many adverse impacts, such as the impact of new shops opening in an area on current shop owners. Planning processes should not seek to remove such impacts.

When natural wetlands are managed for conservation purposes, it is not possible for the resource owner to be sued for damages under common laws relating to trespass, nuisance or riparian law. It is unlikely that owners of a contiguous natural resource can prevent other another owner from destroying their portion even where they thereby damage the remaining owners. The potential for prevention could be increased by ensuring recognition of environmental interdependencies and non-market benefits. To prevent frivolous claims any extension would require a clear method of measuring damages.

With respect to rehabilitation or restoration of natural resources such as wetlands the law is much clearer – the rehabilitated resource cannot harm others or the owner is liable. For example, when the Viansa Winery (California, US) wetlands were restored, a large levy was constructed to prevent neighbouring properties from being flooded and a major obstacle to the project were concerns about flooding by neighboring landowners (Smith 1997). Hence, a restored or rehabilitated wetland and a natural wetland are quite different in the eyes of the courts and generate substantially different incentives to landowners.

A legal difference between Australia and the UK relates to the legal standing of non-government organisations as mentioned in the previous section. Although standing is granted in some cases, it is not uniform across differing issues and states. Where such organisations can identify appropriate forms of damage to their constituency, they should have legal standing.

Transaction incentives and organisational structures

Taxation incentives

Reducing the transaction costs to natural resource management via the taxation system does not remove the cost from society as a whole (as the costs are subsidised via the tax system). However, it may avoid government failure and may achieve a more efficient outcome.[16] Taxation incentives fall into three groups: treatment of donations, treatment of transactions, and, treatment of management inputs.[17]

In the US, nearly all forms of donation are tax deductible over a relatively long time-period (five years versus one in Australia). They are also exempt from capital gains tax (or receive favourable treatment). In addition, the 'value' of the rights that are extinguished under a conservation easement or covenant are tax deductible as is the discount under a bargain land sale. Hence, donations are treated similar to business losses. The taxation treatment of donations in Australia is more restrictive generating fewer incentives to donate. Donations of assets such as land and shares may remain subject to capital gains tax. Furthermore, it is not clear whether donation of an easement or covenant is tax deductible at present in Australia. Bargain sales to conservation organisations are not tax deductible at present in Australia. As a first step it is suggested that taxation incentives be made consistent across all assets and

[16] If the same outcome is achieved via a subsidy that is less than the losses due to government failure then a taxation subsidy is more efficient than use of government. Where market failure remains it is more efficient to use the private sector where the costs of market failure plus the tax subsidy are less than the costs of government failure.

[17] The majority of the information relating to taxation incentives in Australia is from The Ian Potter Foundation's (1999) booklet "Philanthropy, sustaining the land".

donation types. Other tax incentive suggestions that have been made in the US include:

- Treating of donations as a tax credit rather than a deduction in order to reduce the difference in the value of a donation to a cash rich donor versus other donors;
- A capital gains tax exemption for sales to conservation groups. An exemption would reduce the effective purchase price of conservation groups relative to other uses; and,
- Increasing the value of donations over 100% for tax deduction purposes. For example, if a donated property worth $100,000 is deducted at 150% for an individual paying tax at 33% the effective deduction becomes 50%.

Transaction taxation incentives are a similar situation. In the US, non-profit organisations are exempt from sales taxes and charges (for land and water transactions) in some states whereas they usually are not within Australia.[18] Land-swaps or exchanges and reinvestment from sale of land also attract capital gains tax within Australia, but they are generally exempt in the US (with some restrictions). It is also important that there is a sufficient time-period allowed for reinvestment in a broad range of authorised property rights (for example selling land to acquire water easements could be allowed). Hence, the costs of exchanging lands of lower conservation value for those with greater marginal conservation value are higher for Australian organisations.

Taxation incentives normally only apply to perpetual easements. Tax savings must be repaid to government (often including interest) if the easement is removed by the current landowner at any time in the future. Hence, the incentives for easement donation are strongly aimed towards perpetual easements, but perpetual easements are a rigid conservation tool. Two reforms are suggested. Firstly, donation of both perpetual and temporary easements should be tax deductible. Second, conservation groups should be permitted to sell easements back to the landowner, or a future landowner, without tax penalty, providing the funds are reinvested in conservation. For example, advances in knowledge indicate that the portfolio of easements held by a trust could be improved by relocating several major forestry sites. They are currently unable to sell their asset (the easement) and reinvest in the desired area. That is, current rules do not facilitate reallocation of resources if their relative values change.

Taxation treatment of ongoing costs also differs. Many US states offer exemptions or reductions to land tax and local government rates for conservation lands (generally those under easement). In Australia, there are no land tax exemptions and few local governments provide rate exemptions. This can be a significant disincentive. For example, Poe (1998) finds that US states with higher property taxes have a lower enrolment in the Wetland Reserve Program. There is also differential tax treatment of expenses between conservation land and agricultural land in Australia. Inputs to agriculture are tax-deductible business inputs whereas inputs to conservation are not (unless a business is being conducted). Hence, a potentially perverse incentive exists for landowners to conduct some form of primary production on land managed for conservation in order to claim a tax deduction on inputs (see for example, Binning, C., Young, M. and Cripps, E. 1998). It is suggested that inputs to conservation land (as

[18] The Trust for Nature in Victoria is exempt but it is constituted as a statutory authority rather than as a community based non-profit organisation.

designated by either a management agreement or an easement) are made tax deductible. These deductions should extend to negative gearing of such properties and access to the Landcare rebate in Australia.

There has been some criticism of the off budget nature of taxation concessions and hence the lack of control of the true costs of conservation to the government. The alternative suggested by critics is a refund of the incentive via a subsidy to conservation groups. While the lack of day to day control of such costs is a potential concern to government, monitoring of the deductions claimed allows assessment of the cost to government. In addition, tax based incentives eliminate the deadweight losses and potential government failure that result from collection and redistribution of funds while providing more direct incentives to potential donors.

Subsidies

A major historical cause of natural resource destruction in Australia, the US and the UK were subsidised development programs and farm income support programs (see for example Swope, Benjamin and Anderson 2000). Some hidden subsidies remain, such as tax policies designed to stimulate investment in agriculture and water supply subsidies. For example, water supply subsidies affect wetlands by:

- Cheap water leads to more water being removed from streams than is efficient, hence leaving less water for in-stream flows and wetlands;
- The costs of purchasing water rights for in-stream flows or wetlands are increased because cheap water becomes capitalised in licenses or water rights.
- Farmers have an incentive to develop more wetlands and other low lying areas to use the cheap water because it is cheap to purchase more water and it is expensive to pump water to higher areas; and,
- It may become profitable to develop deeper wetlands as buffer storages to hold the water while irrigating.

However, subsidised water also reduces the incentives for landholders to find ways of harvesting water from their wetlands for irrigation uses. It is recommended all such subsidies are either removed or their impacts on natural resources made more transparent.

Caution should also be exercised with respect to government programs that compete with the private sector to conserve natural resources. These programs have the potential to crowd out private sector investment. For example, the US WRP program purchases some wetland easements at full agricultural value rather than the difference between agricultural value and the highest conservation use. Hence, the WRP has been significantly oversubscribed (between five and nine applications to one accepted) since it was instigated. True auction type programs reduce the impacts of crowding out because they reduce the opportunity for rent seeking behaviour.

Private-public partnerships

Private-public partnerships are more widespread in the US, and to a lesser extent England, than in Australia. Examples previously raised include game management programs (ranching or land for wildlife programs), ‘Safe Harbour’ agreements and mitigation or conservation banking. Private-public partnerships (usually between NPOs and government) have been suggested as a potential solution to the incentive problems relating to publicly owned land management. A private-public agreement involves a private sector organisation or group signing a memorandum of

understanding setting out the private and public responsibilities. The private sector partner generally brings money and management skills while the public partner allows use of the land and other resources. For example, the Central Park Conservancy has raised over $250 million dollars and now manages Central Park, New York. Bryant Park in New York has been managed by the Bryant Park Restoration Corporation since 1988 with a budget six times the size the city previously spent (Walker). Anderson and Fretwell (1999) argue for a similar concept, a self-funding trust, to manage the 'Grand Staircase-Escalante National Recreation Area' in the US. The concept is similar in each case, private management is better able to read and act on incentives than government.

Organisational structures and strategies

A variation on private-public partnerships is use of special districts to provide conservation products. Special districts are a specific purpose governmental structure, but they are held explicitly accountable for a specific output each electoral cycle. Furthermore, the targeted and local goals of such districts facilitate easier monitoring for voters. Hence, the incentives to government are more direct and the problems of government failure less likely. A number of special district or collective action institutions exist in Australia, some of which have broad management responsibilities over natural resources (for example catchment management boards). Many of these organisations may have poor community input or accountability as the state government appoints their members. These districts cannot be self generated by the community, as in some parts of the US (for example via a referendum), but only created by government. Moreover, they do not have an independent source of funds.[19]

Significant resources are devoted to organisational training programs by a number of the larger conservation groups. These programs are designed to increase the capability of local conservation organisations to use many of the tools and incentives that are outlined in this paper. For example, TPL has sponsored a large number of land trusts in the western part of the US. Another US NPO, The Sonoran Institute, sponsors training for local groups to build capacity. Potential exists for similar capacity building approaches in Australia providing the tools are available for such trainees to actively contribute to nature conservation in their community.

6 Conclusions

In this paper, the range of conservation tools available to natural resource managers in Australia was compared to that available in the US and England. A number of tools are available in the US or England that are not available in Australia. These tools are generated by the differing institutional structures in the US and England. That is, if you build the appropriate institutions, the community will pay. Examination of the tools and institutional structures led to a number of policy suggestions for policy makers in Australia.

Policy suggestions can be divided into two groups as indicated in Table 2. Those that should be enacted to create competitive equality between private-sector NPOs, government and other private sector firms. Suggested changes to taxation incentives

[19] Catchment management authorities in Victoria were able to levy residents within their areas until this right was removed following a change of government early in 2000.

laws that do not extend the incentive are also included in Group 1. The second group comprises additional policy suggestions to increase the level of private-sector nature conservation and avoid government failure. Some opportunities could easily be enacted while others would require further research.

Table 2: Suggestions for institutional and incentive reform

Group 1
Property Rights
Continue reform of water property rights
Check no restrictions exist that could reduce incentives for conservation such as parcel size constraints.
Investigate and facilitate use of easements for land, water and fauna
Develop mechanisms to allow producers rights to access gains from production of natural resource outputs where possible
Transaction related incentives
Equivalent treatment of perpetual and temporary easements under NPO laws
Eliminate tax penalty for reinvested (like-kind) funds from extinguishment of easements
Ensure adequate period over which donations can be deducted from tax
Lengthen time period allowable for exchange or reinvestment
Allow a broad range of like-kind exchanges
Remove ongoing subsidies to wetland conversion (especially irrigation supply subsidies)
Remove remaining agricultural subsidies (for example higher rates of depreciation)
Increase use of private-public management partnerships
Investigate broader application of special districts
Develop institutions to capacity build organisations at the community level
Common Law
Investigate common law disincentives for wetland restoration
Ensure principle of 'Use your own property so as not to harm another's' remains for natural resources
Investigate the degree to which non-government organisations have legal standing to act on behalf of the community
Regulation
Ensure access adequate access to development planning processes covering both monetary and non-monetary environmental damage
Investigate use of bonds and insurance against environmental damage from development
Remove restrictions on conservation group ownership of easements or resources
Reduce or remove perverse incentives from endangered species legislation (and others)
Restructure input mix incentives to bureaucracy and landowners from endangered species and related type legislation
Facilitate use of mitigation strategies
Group 2
Make current taxation incentives more uniform
Ensure donations of water rights/licences are tax deductible
Remove differential tax treatment of conservation and business inputs
Equivalent treatment of perpetual and temporary easements under tax laws
Remove capital gains tax from donations
Allow bargain land sales to be tax deductible
Increase state and local tax concessions
Additional tax-based incentives
Remove capital gains tax from sales to conservation groups
Remove tax deductibility from business inputs that result in wetland destruction
Consider treating donations as tax credits rather than deductions
Consider allowing deductions at greater than 100%

Note: Some of these incentives may be available under current legislation but have yet to be tested as a formal ruling has not yet been issued by the taxation department.

References

Anderson, T.L. and Fretwell, H.L. (1999) *A Trust for Grand Staircase-Escalante*, PERC Policy Series PS-16, PERC, Bozeman, Montana.

Anderson, T.L. and Leal, D.R. (1991) *Free Market Environmentalism*, Pacific Research Institute for Public Policy, San Francisco.

Barzel, Y. (1997) *Economic Analysis of Property Rights* (2nd Edn.), Cambridge University Press, Cambridge.

Binning, C., Young, M. and Cripps, E. (1998) *Beyond Roads, Rates and Rubbish Opportunities for Local Government to Conserve Native Vegetation*, CSIRO Wildlife and Ecology, Canberra.

Binning, C. and Young M. (1997) *Motivating People: Using Management Agreements to Conserve Remnant Vegetation* (CSIRO Wildlife and Ecology: Lyneham).

Bromley, D.W. (1991) *Environment and Economy* (Basil Blackwell: Cambridge Massachusetts).

Brubaker, E. (1995) *Property Rights in the Defence of Nature*, Environment Probe and Earthscan Publications Ltd., London.

Coase, R.H. (1937) 'The Nature of the Firm', *Economica*, Vol. 4., pp. 386-405.

Corkindale, J. (1998) *Reforming Land-Use Planning: Property Rights Approaches*, IEA Studies on the Environment No. 12, IEA, London.

Cornes, R. and Sandler, T. (1996) *The theory of externalities, public goods, and club goods* (2nd Edn.), Cambridge University Press, Cambridge.

Environmental Defense (2000) *Progress on the Back Forty: An analysis of three incentive-based approaches to endangered species conservation on private land*, Environmental Defense, Washington D.C.

Industry Commission (1998) *A Full Repairing Lease: Inquiry into Ecologically Sustainable Land Management*, Report No. 60, Industry Commission, Belconnen, ACT.

Kasper, W. (1998) *Property Rights and Competition*, The Centre for Independent Studies, Policy Monograph 41, Sydney.

Kasper, W. and Streit, M.E. (1998) *Institutional Economics – Social Order and Public Policy* (Edward Elgar).

Landry, C. (1998) *Saving Our Streams Through Water Markets: A Practical Guide*, Political Economy Research Center, Bozeman Mt.

NSW Government (1999) *Water Reform, A Proposal for updated and consolidated water management legislation for New South Wales*, Department of Land and Water Conservation, Sydney.

Olson, M. (1965) *The logic of collective action: Public goods and the theory of groups* (Harvard University Press: Cambridge Massachusetts).

Ostrom, E. (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press, Cambridge

Pennington, M. (1996) *Conservation and the Countryside: By Quango or Market?*, IEA Studies on the Environment 6, IEA, London.

Poe, G.L. (1998) 'Property Tax Distortions and Participation in Federal Easement Programs: An Exploratory Analysis of the Wetlands Reserve Program', Agricultural and Resource Economics Review, vol. 27(1), pp. 117-24.

Scodari, P.F. (1990) *Wetlands Protection: The Role of Economics*, Environmental Law Institute, Washington DC.

Smith, R.J. (1997a) 'The M & T Staten Ranch, Walnut Grove, California', *Center for Private Conservation Private Conservation Case Study*, Competitive Enterprise Institute, Washington D.C.

Smith, R.J. (1997b) 'Viansa Winery Wetlands', *Center for Private Conservation Private Conservation Case Study*, Competitive Enterprise Institute, Washington D.C.

Swope, K.J., Benjamin, D.K. and Anderson, T.L. (2000) 'Bucks for Ducks or Money for Nothin'? The Political Economy of the Federal Duck Stamp Program', in Anderson, T.L. (Ed.) *Political Environmentalism: Going behind the Green Curtain*, Hoover Institution, Stanford, California.

The Ian Potter Foundation (1999) *Philanthropy : sustaining the land*, The Ian Potter Foundation, Melbourne.

The National Trust (1999) *Nature conservation in a living countryside*, The National Trust, London.

The Nature Conservancy (1999) *Annual Report Fiscal Year 1999*, The Nature Conservancy, Washington D.C.

Tropical Savannas Cooperative Research Centre (1999) 'Tourism: The new outback enterprise', *Savanna Links*, Issue 9.

Walker, C. (unknown) *Partnerships for Parks*, The Urban Institute, Washington, D.C.

Whitten, S.M. (2000) *Institutions and Incentives for Private Sector Wetland Conservation – Contrasting US and Australian Experiences*, Unpublished Paper, PERC, Bozeman, Montana.

Williamson, O.E. and Winter, S.G. (Eds.) (1991) *The Nature of the Firm, Origins, Evolution, and Development*, Oxford University Press, New York.