Private Sector Conservation Enterprises in Australia*

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Abstract

If markets for nature conservation services are to ensure an efficient supply, property rights need to be well defined, readily defended and tradeable. However, some of these services have ill defined property rights that are costly, if at all possible to defend. This limits the incentives for private sector entities to deliver nature conservation benefits and has provided a rationale for public sector provision. Private Sector Conservation Enterprises (PSCEs) have the potential to fill any gap between the public sector supply of nature conservation services and the public's demand for them. This paper reports a two stage survey designed to determine whether or not PSCEs are active in Australia to fill this supply gap. The first questionnaire collected high-level information on conservation activities, scale of operation, revenue and expenditure. The follow-up questionnaire sought more detailed information on factors that either constrain or facilitate the work of PSCEs. The research shows that there is an active and substantial PSCE sector operating across all states and territories. Despite their private sector roots, most PSCEs in Australia receive a proportion of their revenue from government grants. However, these groups also creatively engage local communities in nature conservation and successfully leverage private sector funds.

Key words: Property rights, environment, conservation, private sector, enterprises

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1.0 Introduction

A growing emphasis is being placed on the significance of property rights as a key component in the development of natural resource management policy in Australia. The importance of clearly defined, well enforced and readily traded property rights to the efficient allocation of resources and hence economic performance is well established (North 1994 and Olson 1996). International evidence (De Alessi 2003) shows that the productivity of land is enhanced when property rights are defined, defended and traded. It also shows that land stewardship is encouraged under an institutional regime of strong stable property rights. Hence, the property rights regime can enhance both the use value and the asset value of land.

The property rights approach has been successful largely in terms of efficiency as defined by improvements in the welfare of society that are generated by the production and consumption of marketed goods. The ownership of rights to resources and the self-interested pursuit of individual wellbeing leads people to maximise their net benefits from resource use. The utility so generated relates to marketed goods. By definition, marketed goods are those that can be exchanged in markets because rights to them are defined and defended.

What then of goods which display the public good characteristic of non-excludability? For these goods, even if property rights can be defined, defence is problematic. Non-excludability implies that the exclusion of non-paying users is at best expensive and at worst technically infeasible. Can the decentralised process of social coordination embodied in the property rights approach work to secure the efficient production of these goods?

For instance, rights to land where the habitat of an endangered species is located may be defined to the extent that trespass can be punished through legal processes. Other rights associated with the land resource are not defined. The rights to prevent the use of the knowledge that the endangered species continues to exist are neither defined nor defended. One way of looking at this is through an analogy: property rights are akin to a ‘bundle of sticks’. Different bundles include different sticks. Hence, resources can have associated with them different combinations of rights. An area of land, for instance, may have rights defined over access but not over product extraction. In the case of a resource that produces some non-excludable benefits, some elements of the rights to the resource (i.e. some of the sticks in the bundle) may not be defendable at acceptable cost to an owner, even if they are defined. Knowing who benefits from the non-excludable benefits is at the outset difficult because of the free-rider problem.

Proponents of the property rights approach to the protection of environmental values associated with land and water have tended to put their case in terms of environmental use values. For instance, Anderson and Leal (1991) cite cases in the UK and the USA where the protection of environmental assets has been successful due to the purchase of use rights by groups seeking hunting and fishing opportunities. Similarly, documentation of the revitalisation of the African Elephant population in Zimbabwe (Sanera and Shaw 1996) demonstrates the significance of hunting property rights. Thus, by securing use rights to resources, people interested in types of uses that are consistent with non-use benefit provision effectively provide for the wider public

good. In a sense, the use benefits for which rights can be defined and defended 'piggy back' the non-use benefits where property rights are more problematic[1].

The question remains whether the property rights approach can be used to protect environmental assets for which there are only minimal use values, but for which there are significant non-use values. Such assets are prevalent in Australia. With a relatively small population in comparison to the extensive array of environmental assets, the ratio of use to non-use values tends to be low.

As discussed above, the hunting of native species is one use-value associated with environmental assets. In Australia however, these values are restricted because hunting is highly regulated by government. Ownership of native species is vested in the Crown and most jurisdictions limit hunting to the culling of birds and animals when their populations reach pest proportions.

A wide range of entities is potentially capable of forming for the provision of public good producing environmental assets. Profit maximisers, not-for-profits, clubs and societies all may arise. The issue is, will they?

In Australia, the Federal Government and a number of State Governments have actively promoted the concept of private sector involvement in the field of nature conservation. This has been an addition to their 'privatisation' endeavours in fields such as health care, education, telecommunications and finance. In other words, a policy climate has been established that is supportive of private sector involvement in conservation activities. The question addressed in this report is whether or not, given this favourable climate, private sector conservation enterprises are active and if so, what type of operations they are pursuing?

2.0 Methodology

The survey approach used for the research included two sequential questionnaires: the first to identify organisations that fit the definition of a private sector conservation enterprise, developed for this research project, and the second to build a more comprehensive picture of these organisations.

2.1 Sample frame

The sample frame of nature conservation organisations (NCOs) sent the initial questionnaire was developed specifically for this research because no comprehensive list of relevant organisations existed. Three sources of information were used. The Australian Government Department of Environment and Heritage (DEH) provided a database of organisations that had received assistance under the Natural Heritage Trust (NHT) Programme. This grant programme was established in 1997 to 'help restore and conserve Australia's environment and natural resources' (Natural Heritage Trust 2004). The NHT had a particular focus on providing community groups with funding for environmental and natural resource management projects, particularly on-ground works. The Programme was criticised because it distributed small grants to such a diverse set of projects that their combined impact on the environmental health

[1] In the same way, skins are produced because there is a demand for meat, even if ownership over the hides cannot be defined.

of the nation was minor. This programme characteristic was, however, an advantage to this research project because the database of grant recipients was consequentially extensive.

The DEH listing was however an incomplete source for the sample frame because it did not include, for example, those organisations that were unaware of, not eligible to receive grants from or unsuccessful in their applications to the NHT or those organisations committed to maintaining their activities independent of government funding. Conversely, the NHT programme was also used by agencies of governments at both State and Local levels as a source of funding. Organisations readily identifiable as government agencies were removed from the database[2].

To supplement the DEH listing, each of the state nature conservation councils (NCCs) was contacted. The NCCs act as peak bodies for member environmental groups in their respective states. In addition to supplementing the DEH list with NCC members, representatives of the NCCs were interviewed to establish if there were other organisations outside of both their own members and the DEH list. The 'grass roots' knowledge of these representatives resulted in a more comprehensive sample frame. Finally, internet searches were conducted to identify further organisations that were not listed in the DEH database or identified by the NCCs.

2.2 Questionnaire design

A two-stage survey process was developed through an iterative process that involved consultation with a range of NCOs. The initial questionnaire was designed to identify organisations that fitted the definition of a private sector conservation enterprise developed for this research project. A follow-up questionnaire was then used to seek more detailed information on a subset of respondents to the initial questionnaire.

A four-stage survey process, following the Dillman (2000) approach, was used for questionnaire administration. Prior to sending out the initial questionnaire a letter of invitation was sent to 626 NCOs throughout Australia. This letter was designed to generate interest in the questionnaire amongst potential respondents and to refine the sampling frame by culling listed organisations that yielded 'return to sender' responses and those that responded with a request to be excluded.

The initial questionnaire was sent approximately two weeks after the letter of invitation. A personally signed letter explaining the survey process and a stamped return envelope accompanied the questionnaire. A total of 606 questionnaires were dispatched. Two weeks after the questionnaire was mailed, a reminder postcard was dispatched to respondents who had, at that stage, not replied. Once analysis of the data was complete a thank you letter, accompanied by a summary of the findings of the questionnaire, was sent to all organisations that returned the questionnaire.

As with the initial questionnaire, the design of the follow-up questionnaire included consultation with NCOs. The follow-up questionnaire was designed to enable it to be tailored to the specific operations of individual organisations, that is, organisations

[2] Organisations on the DEH listing accounted for approximately 60 per cent of the organisations included in the final sample frame

were only sent questions relating to their operations as reported in the initial questionnaire.

Once again the questionnaire was accompanied by a personally signed letter and a stamped return envelope. A total of 185 questionnaires were dispatched to the organisations identified as fitting the definition of a PSCE. A week after the questionnaire was sent, a reminder postcard was sent to all organisations thanking those who had already returned the questionnaire and reminding others to return the questionnaire as soon as possible.

2.3 Method of analysis

On receipt of completed questionnaires the data were entered into an Excel spreadsheet. Once compiled the spreadsheet was imported into the statistical package JMPIN for analysis. Analysis was limited to examining the distribution of responses to each question and investigating possible relationships between the variables. These relationships were analysed through both correlation and contingency analyses.

3.0 Discussion of Results

3.1 Private sector conservation enterprises defined

The unit of inquiry for the purposes of this research was defined as private sector conservation enterprises. Defining the private sector involved a circuitous process. The definition used by the Australian Bureau of Statistics (ABS) to classify the private sector is '(a)ll resident units[3] other than those classified to the public sector' (ABS 2002). The public sector is in turn defined as 'resident units that are part of the general government sector or are controlled by units of the general government sector' (ABS 2002:30). 'Control' is therefore the key term in the ABS's differentiation between the private and public sectors. Control is 'the ability to determine general corporate policy by appointing appropriate directors, if necessary' (Commission of the European Communities *et al*. 1993). The ability to control may occur when a government owns more than 50 per cent of the shares in a corporation or where special legislation empowers a government to determine corporate policy or to appoint the majority of a corporation's directors.

Organisations that rely on donations, memberships, and corporate sponsorships can be considered part of the private sector, as are publicly listed companies. Organisations that receive a substantial proportion of their funding from government may be perceived to be under the control of government; however their ability to refuse these funds indicates that they should be considered within the categorisation of the private sector.

Following the Australian Heritage Commission, conservation activities are those 'processes and actions of looking after a place so as to retain its natural significance' (2002:11). The initial questionnaire distinguished between 'direct' and 'indirect' conservation activities. Activities classified as indirect conservation in the questionnaire were lobbying the government for changes to nature conservation

[3] 'A legal entity that has a centre of economic interest within the economic territory of Australia' (ABS 2002:53).

policies and programmes, research into species and ecosystems to ensure their conservation, and community education. Direct conservation activities listed on the questionnaire were ownership of natural areas, managing natural areas including on-ground works, administering covenants and/or revolving funds that conserve natural areas, brokering between groups that undertake on-ground works and those wanting them and providing technical advice/support.

An Australian Business Number (ABN) was the criteria used to determine whether an organisation was an enterprise. Businesses require an ABN to register for the Goods and Services Tax (GST) and thus to receive tax credits for their costs of operation. According to the Australian Securities and Investments Commission (ASIC 2004), '(c)ompanies registered under the *Corporations Act, 2001* and business entities carrying on an enterprise in Australia are entitled to an ABN if they apply'.

3.2 Questionnaire response rates

Of the 606 initial questionnaires dispatched, 340 responses were received. Thirty-one of these responses were found to be from either government agencies that had not been detected in proofing of the DEH listing or organisations that were no longer active. A further 30 organisations were effectively removed from the original database because of late received 'return to senders' and organisations identifying themselves as not relevant to the research. With these responses and organisations removed, the overall response rate achieved for the initial questionnaire was 57 per cent.

Of the 309 organisations that responded to the initial questionnaire, 185 (60 per cent) were classified as PSCEs and 122 (39 per cent) were found not to fit the definition. The remaining two organisations were not able to be classified into either category on the basis of the information provided in the returned questionnaires.

The PSCEs identified in the initial questionnaire were the target for the follow-up questionnaire. The goal of which was to gather more complete information on the PSCEs. Follow-up questionnaires were sent to all 185 responding PSCEs. Eight organisations were removed from the database of PSCEs because they returned incomplete questionnaires, indicating they had insufficient time to complete them. The response rate for the follow-up questionnaire was 49 per cent (Table 1).

Table 1: Follow-up questionnaire distribution and response rate

State and Territory	Sent	%	Received	%	Response rate
ACT	6	3	1	1	17
NSW	40	23	22	25	55
NT	3	2	1	1	33
QLD	19	11	11	13	58
SA	27	15	12	14	44
TAS	7	4	3	3	43
VIC	43	24	24	28	56
WA	32	18	13	15	41
Total	177	100	87	100	49

On the basis of a range of criteria (place of operation, scale of operation, average gross annual revenue and conservation activities undertaken) the characteristics of the follow-up questionnaire respondents did not differ significantly[4] from the characteristics of respondents to the initial questionnaire.

3.3 The work of private sector conservation enterprises

Information on the nature of the conservation works being conducted by the PSCEs, collected in the initial questionnaire, is presented in Table 2. A clear majority (89 per cent) of responding organisations manage conservation areas including on-ground works.

Table 2: Direct conservation activities of PSCEs

Direct conservation activities	Number	Percentage
Management of conservation areas	164	89
Providing technical advice/support	106	57
Brokering between groups seeking and providing on-ground works	46	25
Ownership of conservation areas	29	16
Conservation of wildlife	7	4
Administering devolved grant schemes[5]	97	52
Administering covenants (heritage agreements)[6]	33	18

The following sections use data from both the initial and follow-up questionnaires to provide more detailed information on the conservation activities undertaken by PSCEs. Information is not provided on some of the conservation activities because the number of responses received was low, limiting the conclusions that could be drawn.

3.3.1 Management of conservation areas

Management of conservation areas is the predominant activity undertaken by PSCEs, with 89 per cent of PSCEs responding to the initial questionnaire managing conservation areas. The results of the follow-up questionnaire indicate that most conservation areas (56 per cent) managed by PSCEs are public land, with only 12 per cent managing private land only. A further 28 per cent of follow-up questionnaire respondents indicated they manage both public and private land.

[4] The results for each contingency analysis respectively are $\chi^2 = 6.2$ and P-value 0.51, $\chi^2 = 2.9$ and P-value = 0.40, $\chi^2 = 15.1$ and P-value = 0.03 and for the conservation activity managing natural areas $\chi^2 = 0.98$ and P-value = 0.32.

[5] The high percentage of organisations that indicated they 'administer devolved grant schemes' (52 per cent) may indicate that this option was misinterpreted. This option was intended to refer to organisations that provide devolved grants to organisations rather than referring to organisations that receive them. The high response to this option suggests that some organisations which receive devolved grants are also included.

[6] The number of organisations that indicated they administered conservation covenants may be overestimated. The first question in the conservation covenant section of the follow-up questionnaire sought to clarify the nature of the PSCE's role in administering conservation covenants. Of the six responding organisations to answer this section, five indicated they neither owned nor managed areas that were covenanted or held covenants on areas of land owned by individuals or other organisations.

Table 3 provides data on the extent of conservation areas being managed by PSCEs. The national data indicate that although over the period 2000/01 to 2002/03 there was an increase in the number of areas being managed for nature conservation, the total area managed declined. There is however considerable variation within the data at the State and Territory level. For example, Queensland, Tasmania and Western Australia showed increases in both the number and area of land managed for conservation.

Table 3: Extent of conservation areas managed

State/ Territory	2000/01		2002/03	
	Number	Total area	Number	Total area
ACT	n/d	n/d	n/d	n/d
NSW	88	110,322	122	45,768
NT	n/d	n/d	n/d	n/d
QLD	11	59,856	17	61,806
SA	23	422,742	20	381,205
TAS	5	400	7	820
VIC	64	6,390	59	6,404.6
WA	8	2,108	17	70,908
Total	199	601,818	242	566,912

n/d – no data

3.3.2 Technical advice and support

Following management of conservation areas, provision of technical advice and support was the most common conservation activity undertaken by responding PSCEs, with 57 per cent of responding PSCEs. According to the results of the follow-up questionnaire, individuals and organisations to which a significant number of PSCEs provide technical advice and support include members of the organisation (98 per cent), the general public (88 per cent), and Local Government (71 per cent). The full breakdown is provided in Table 4.

Table 4: Individuals and organisations in receipt of technical advice and support

Individual or organisation	Number	Percentage
General public	43	88
Members of organisation	48	98
Donors to organisation	15	31
Other conservation organisations	34	69
Private land managers	32	65
Commonwealth Government agencies	12	24
State Government agencies	27	55
Local Government	35	71
Philanthropic trusts	4	8
Corporations	14	29

The prevalence of conservation area management amongst the PSCEs surveyed is also reflected in the fact that 100 per cent of the organisations providing technical advice and support provide information on on-ground works (including weed and

feral animal management, and bush regeneration). A large proportion of these organisations also provide advice on preparation of grant applications (59 per cent) and effective lobbying (45 per cent). Other topics, not listed in the follow-up questionnaire, on which information is provided include how to prepare management plans, wildlife management, and plant identification and propagation.

3.3.3 Brokering conservation activities

Of PSCEs that responded to the initial questionnaire, 25 per cent indicated they acted as a broker between groups undertaking on-ground works and those wanting them. According to the results of the follow-up questionnaire, individuals and organisations most likely to seek conservation works were members of a PSCE (72 per cent), Local Governments (67 per cent) and private land managers (61 per cent) (Table 5).

Table 5: Individuals and organisations seeking conservation works

Individual or organisation	Number	Percentage
General public	10	56
Members of organisation	13	72
Donors to organisation	3	17
Other conservation organisations	8	44
Private land managers	11	61
Commonwealth Government agencies	4	22
State Government agencies	8	44
Local Government	12	67
Philanthropic trusts	0	0
Corporations	4	22

Those individuals/organisations most likely to undertake conservation works for the individuals and organisations identified above were members of an organisation (89 per cent), State Government agencies (67 per cent) and the general public (67 per cent). Responding PSCEs indicated that organisations and individuals least likely to undertake conservation works were philanthropic trusts (0 per cent), donors to an organisation (17 per cent), Commonwealth Government agencies (17 per cent), and corporations (17 per cent). On-ground works commonly undertaken by these organisations included planting indigenous species (94 per cent), weed removal (83 per cent), preparation of management plans (67 per cent) and fencing (61 per cent).

3.3.4 Ownership of conservation areas

A small proportion (16 per cent) of responding PSCEs indicated in the initial questionnaire that they owned conservation areas. Nationally, the total area owned by responding organisations increased from 468,421 hectares in the 1997/98 financial year, to 546,437 hectares in the 2000/01 financial year and then decreased to 509,485 hectares in 2002/03 (Table 6). There was an overall increase in the number of conservation areas owned from 24 in 1997/98 to 38 in 2002/03. As with conservation areas managed, there is considerable variation between States and Territories in terms of changes in both the number and area of conservation areas owned. The largest change was found in Western Australia, with an increase in area from 516 hectares in the 1997/98 financial year to 70,187 hectares in the 2002/03 financial year. A

considerable decline was also noted in New South Wales, with the area owned declining from 65,120 hectares in the 1997/98 financial year to 977 hectares in the 2002/03 financial year. Considerable changes in private ownership of conservation areas occurred throughout Australia between the 2000/01 and 2002/03 financial years. Lack of data from some larger scale PSCEs may contribute to the pattern of conservation area ownership shown in Table 6.

Table 6: Number and area of owned conservation areas across Australia

State/ Territory	1997/98		2000/01		2002/03	
	Number	Total area (ha)	Number	Total area (ha)	Number	Total area (ha)
ACT	n/d	n/d	n/d	n/d	n/d	n/d
NSW	2	65,120	6	66,963	4	977
NT	n/d	n/d	n/d	n/d	n/d	n/d
QLD	3	680	5	59,685	7	61,505
SA	12	401,805	13	416,808	9	375,208
TAS	4	300	4	388	5	408
VIC	0	0	1	1,200	1	1,200
WA	3	516	4	1,393	12	70,187
Total	24	468,421	33	546,437	38	509,485

n/d – no data

Of the nine PSCEs providing information on their ownership of conservation areas, four indicated that they had received donations of land. Insufficient data were collected to make any statements about growth in area of land being donated to organisations, other than to note that for the 1999/2000, 2000/01 and 2001/02 financial years only one organisation provided information on areas being donated, whereas for the 2002/03 financial year three PSCEs had received donations of land. The increase in the area of land being donated may reflect changes in Commonwealth Government taxation policy that aimed to increase donations of land to non-profit organisations.

3.3.5 Devolved grant schemes

The high percentage of PSCEs that indicated in the initial questionnaire that they 'administer devolved grant schemes' (52 per cent) was considered an indication that this option was misinterpreted. The 'administration of devolved grant' category was intended to refer to organisations that provide devolved grants to organisations, rather than referring to organisations that receive them. The high response to this option suggests that some organisations which receive devolved grants are also included. This was supported by the results of the follow-up questionnaire with 79 per cent of PSCEs that responded to this section indicating they were the recipient of a devolved grant.

Data collected from the eight organisations that provided devolved grants to other organisations shows that the amount distributed in devolved grants was greatest in the 2000/01 financial year, although the greatest number of devolved grants were distributed in the 2002/03 financial year. Of the eight responding organisations, seven

indicated the source of the devolved grants they distributed was the Commonwealth Government, whereas only three organisations received funds for their devolved grant scheme from State Government.

3.4 Funding the work of private sector conservation enterprises

3.4.1 Annual revenue and revenue sources

The results of the initial questionnaire show that the modal average revenue class for PSCEs is ($1,000 - $9,999) with 30 per cent of respondent organisations. Sixty six per cent of organisations had annual revenue of less than $50,000. However, there was a small proportion (9 per cent) of organisations with revenue over $1m. Revenue sources received by PSCEs are shown in Table 7. The three most common sources of revenue received by PSCEs were government grants (89 per cent), memberships (79 per cent) and donations (66 per cent).

Table 7: Revenue sources received by PSCEs

Sources of revenue	Number in receipt	Percentage in receipt
Government grants	163	89
Memberships	146	79
Donations	122	66
Sponsorships	54	29
Merchandising	48	26
Events	42	24
Philanthropic grants	34	18
Tourism	25	14
Commercial environmental services	12	6

The follow-up questionnaire sought information on the proportion of PSCEs' revenue derived from a range of sources in the 2002/03 financial year (Table 8). The three sources of revenue received by the largest number of PSCEs (government grants, memberships and donations) were also found to contribute the most to organisational revenue. Government grants were found to make the greatest contribution. Total revenue data provided in the initial questionnaire was used to convert the data on proportions from various revenue sources to dollar amounts. The mean proportion of respondent organisational revenue from government grants was 52 per cent or $43,600 and from memberships was 17 per cent or $11,500.

Table 8: Revenue received from various sources

Revenue source	Percentage of revenue by source		Amount of revenue by source per annum($)	
	Mean	Median	Mean	Median
Government grants	52	60	43,600	5,100
Memberships	17	5	11,500	600
Donations	9	1	48,800	100
Sponsorships	1	0	1,600	0
Merchandising	6	0	5,300	0
Events	1	0	3,100	0
Philanthropic grants	1	0	4,000	0
Tourism	2	0	95,700	0
Commercial environmental services	1	0	29,700	0

N = 80

Using data collected from the follow-up questionnaire, the following sections consider the three main revenue sources in more detail.

Government grants

Government grants are the most significant revenue source for responding PSCEs, both in terms of number of organisations receiving them (89 per cent) and proportion of organisational revenue (mean of 52 per cent). Of the organisations in receipt of government grants the largest proportion was in receipt of Commonwealth Government grants (80 per cent). State Government grants were received by 63 per cent of organisations, and although Local Government grants were received by the least number of organisations it was still significant with 50 per cent of organisations. Of the total amount contributed to PSCEs from the various levels of government, the Commonwealth Government contributed the largest proportion (a mean of 59 per cent).

According to 58 per cent of responding organisations, Commonwealth Grants are becoming more difficult to obtain, whereas 3 per cent of responding organisations found them less difficult to obtain. The proportions of organisations finding State and Local Government grants more difficult to obtain were lower than for Commonwealth Government grants, with 34 and 15 per cent respectively. The increasing difficulty in securing government grants is reflected in the amount of revenue being received from government grants, with 42 per cent of responding organisations noting a decrease.

Memberships

Seventy nine per cent of responding PSCEs received some revenue from membership fees, with $600 being the median amount received per respondent PSCE in the 2002/03 financial year. Respondents to the follow-up questionnaire indicated they had between 10-10,000 members, with a mean number of 248. Typical benefits associated with membership included the opportunity to attend group events (71 per cent) and access to publications (64 per cent). The age profile of organisational membership is

skewed towards older members (Table 9), with the largest number of members in the over 60 years category (38 per cent).

Table 9: Age profile of PSCE membership

Age profile of membership	Percentage of members (mean)	Percentage of members (median)
Younger than 30	5	1
30 to 39	11	10
40 to 49	19	19
50 to 59	26	25
60 and older	38	30

Although most (50 per cent) organisations indicated that the profile of their membership was not changing over time, 26 per cent indicated the age profile of their membership was changing. Age groups that most organisations indicated to be increasing were 40 to 49, 50 to 59, and 60 and older. The only age group identified by a substantial number of organisations (26 per cent) to be decreasing was 30 to 39.

Donations

Of the PSCEs that responded to the initial questionnaire, 66 per cent indicated they received donations. According to the follow-up survey, donations contributed a mean amount of 9 per cent or, converted to dollars, a median amount of $100 in the 2002/03 financial year. Groups from which a large number of responding organisations indicated they received donations were the general public (55 per cent) and members of the organisation (77 per cent).

Forty-two per cent of organisations indicated that the amount of money being donated was increasing. The number of people donating was also noted by 35 per cent of organisations to be increasing. Eighteen per cent of organisations found that both the amount being donated and the number of people donating were decreasing. Forty-nine per cent of organisations indicated they were seeking to receive a greater proportion of their revenue from donations. Forty-two per cent of organisations had tax deductibility status for donations.

Tourism

Another revenue source which requires comment is tourism. In response to the initial questionnaire 14 per cent of responding PSCEs indicated they generated revenue from tourism activities. Although only six respondents to the follow-up questionnaire indicated that a proportion of their revenue was derived from tourism, because the total revenue for these organisations was relatively high, the mean revenue received from tourism was $95,700. In contrast the median revenue was $0. Tourism activities and/or services from which PSCEs generate revenue include: self-guided and guided walks, charging entry fees to conservation areas, providing accommodation, and operating a gift shop or restaurant.

3.4.2 In-kind contributions – equipment and voluntary labour

In addition to total annual revenue, organisations also receive in-kind contributions from both their members and volunteers. In-kind contributions to PSCEs provide savings to these organisations on both running and equipment costs. When compared with total annual revenue, in kind contributions represent a considerable proportion of PSCEs operating expenses. In-kind contributions received by organisations are between 0 – 1,272 times the amount of total revenue received by organisations. The median in-kind contribution as a percentage of total revenue was 90 per cent, whereas the mean percentage was 91 per cent.

Of the PSCEs responding to the follow-up questionnaire, 76 per cent had no paid employees. The median number of paid employees for PSCEs was 0.0, and the mean 4.8. In addition to the number of hours for which employees are paid, 67 per cent of organisations indicated that their paid employees also completed a number of unpaid work hours. The mean number of hours paid employees volunteer annually was 650 hours. The total annual number of unpaid hours completed by paid employees of the 15 organisations that completed this question was 9,800 hours. On the basis of $20 per hour, this is an in-kind contribution to the work of PSCEs that is valued at $196,000 per annum.

All responding PSCEs indicated that volunteers had undertaken work for their organisation in the 2002/03 financial year. The mean number of hours completed by volunteers annually was 2,900 hours and the median number was 1,000 hours. The total annual number of hours undertaken by volunteers working for the 77 PSCEs that provided information in the follow-up questionnaire for this question was 225,500. At a value of $20 per hour this is an in-kind contribution to the nature conservation sector of $4,510,000 per annum.

3.5 Private sector conservation enterprise expenditure

The pattern of expenditure of surveyed PSCEs, derived from the initial questionnaire, is displayed in Table 10.

Table 10: Breakdown of total expenditure for PSCEs

Expenditure Item	Mean percentage per organisation	Median percentage per organisation
Administration	27.6	15.0
Volunteers	1.4	0.0
Marketing/fundraising	10.4	2.5
Direct conservation activities	43.6	40.0
Indirect conservation activities	14.7	5.0

The follow-up questionnaire sought information on whether or not expenditure on various activities differed depending on the source from which the funds were received (Table 3.11). For most of the revenue sources (donations, sponsorships, merchandise and events), the pattern of expenditure on various activities is consistent

with that for total organisational revenue as shown in Table 3.10 above. There are two notable exceptions: the pattern of expenditure of government grants; and membership fees.

The proportion of government grants (mean of 81.4 per cent) spent on direct conservation activities is greater than the proportion of total expenditure (mean of 43.6 per cent, Table 3.10) spent on this activity. In contrast, the proportion of government grants spent on administration (mean of 6.1 per cent) is considerably less than the proportion of total expenditure spent on administration (mean of 27.6 per cent, Table 3.10). This result suggests that there may be limitations placed on the type of activities upon which government grants can be spent.

A different picture arises for expenditure of membership fees. Compared with organisational revenue from all sources (mean of 27.6 per cent, Table 3.10), a larger proportion of membership revenue (mean amount of 42.7 per cent) is spent on administration costs. In contrast, the percentage of membership revenue spent on direct conservation activities (mean of 21.7 per cent) is lower than the proportion of total organisational expenditure on this item (mean of 43.6 per cent, Table 3.10). Unlike government grants, there are unlikely to be restrictions on the manner in which membership revenue is spent. For this reason it is more likely to be allocated to expenses for which it may be difficult to raise revenue.

4.0 Conclusion

The PSCEs sector – as reflected by the respondent sample – is active in the provision of nature conservation benefits in every State and Territory in Australia. The activities undertaken by these groups are broad ranging, but most of the PSCEs surveyed are involved with the on-ground management of natural areas and the provision of technical advice/support. Several characteristics of the surveyed PSCEs provide support for Olson's (1971) theory regarding collective action, that is, that the social pressure and incentives which operate in smaller groups can lead to the generation of revenue flows despite the non-excludable nature of many nature conservation benefits. For example, a large proportion of PSCEs are active at either the local (37 per cent) or regional (43 per cent) scale, and have modal annual revenue of $1,000 to $9,999. There is a segment of the sector, however, that is larger in scale in terms of revenue/expenditure and number of employees/volunteers. For instance, seventeen of the responding PSCEs have annual revenue of over $1m.

PSCEs are responsible for significant funds, both public and private, being invested and considerable labour resources being mobilised for the achievement of nature conservation objectives. The PSCEs surveyed were found to have total annual revenues in the order of $105m and a total average value of assets exceeding $125m. Revenue from government grants was the most substantial revenue source, both in terms of number of organisations in receipt and as a proportion of total funds received. The sector also successfully garners financial support from the private sector through in-kind contributions and receipt of membership fees, donations and sponsorships. However, the key private sector resource leveraged by PSCEs is the labour input; the volunteer labour force in the sector is substantial. In the 2002/03 financial year around 32,000 volunteers worked with the surveyed PSCEs, representing the equivalent of over 1600 full time equivalent workers.

The PSCEs surveyed identified financial resources as a key constraint to the work they undertake. Although many organisations recommended an increase in the allocation of government grants for the purposes of nature conservation, a significant proportion of organisations also noted the importance of diversifying the revenue sources accessed by their organisation. This raises the question of whether the public perceives nature conservation benefits to be either public or private goods. Should people feel that nature conservation benefits are the government's responsibility and that they contribute to the achievement of these objectives through the tax system, it will be difficult for the private sector to raise funds from private individuals and organisations. To increase the level of altruism for nature conservation, the government will need to set out a clear role for the private sector in the provision of nature conservation benefits and to delineate the extent of government involvement in the supply. 'Crowding out' of the private sector is a potential limiting factor to PSCE involvement.

Whether nature conservation in a given location is provided by the private or public sector should be determined by the choice between the relative efficiency advantages afforded by competitive private ownership[7], and possible inefficiencies created when non-excludable benefits are predominant (Bennett, 2001). The appropriate level of involvement of both the public and private sectors should be determined on a case-by-case basis according to the characteristics of the benefits supplied at a given location. For example, where there is insufficient revenue to enable private ownership of a conservation area, the private and public sectors can work in partnership. Partnerships between the private and public sectors can be achieved through contracts for the delivery of services, such as reserve management. The results of this research indicate that such public/private partnerships already exist, with 84 per cent of the PSCEs managing natural areas working on public land. Under such a model there is scope for private managers to earn income (e.g. through entry fees) and thus reduce the cost to government of providing nature conservation benefits.

Although ownership of conservation areas was not an activity undertaken by a large proportion of PSCEs, there may be potential for PSCEs to take a greater role. For conservation areas characterised by close proximity to urban areas, the ability to inexpensively exclude visitors and generate considerable direct-use benefits, there may be scope for the private sector to become active in both ownership and management. In such cases, there is also the likelihood that non-use and indirect-use benefits will be jointly provided with the direct-use benefits of nature conservation. The potential for the 'piggy-backing' of non-use benefits (for which property rights are problematic) with use benefits (for which rights can be defined and defended) should be explored to identify other situations, beyond ownership of conservation areas in close proximity to urban areas, where this may be applied.

The above examples provide indications as to the possible roles the private sector can take in the supply of nature conservation benefits should significant changes in government policy be achieved. Despite the potential for changes in government policy to reduce barriers to private sector revenue raising, it is possible that the

[7] The relative advantages of the private sector compared to public sector provision are generally considered to be greater flexibility, increased cost effectiveness, higher customer responsiveness and equating supply and demand.

inherent problem of free-riding behaviour will always necessitate the public sector's role in the collection of funds for the delivery of some nature conservation services. The results of the research also indicate changes, to be implemented by the public sector, that would contribute to the private sector more efficiently and effectively providing nature conservation benefits in collaboration with the public sector. Measures identified by the research which could improve the provision of nature conservation benefits by the private sector, include:

- the provision of grants to PSCEs that cover salary and administration costs
- government funded awareness campaigns to raise the profile of PSCEs
- government funded training to assist PSCEs in the development of successful fundraising strategies
- assistance from government to facilitate greater collaboration and cooperation between PSCEs
- wide-spread implementation of rate rebates for properties managed for nature conservation
- policy changes to enable PSCEs to deduct nature conservation expenses against non-farm income
- simplification and promotion of revised guidelines relating to tax deductibility status for PSCEs.

An important aspect of future research in the area of the private sector's provision of nature conservation benefits will be a consideration of the comparative cost effectiveness of the private versus public sectors' contributions. The roles adopted by the public and private sectors in the area of nature conservation have evolved over time with little strategic consideration of how to optimise each sector's contribution. Optimising their contributions would improve the efficiency with which government funds are invested in the achievement of nature conservation outcomes. Future research should consider the relative merits of both non-government and government contributions to nature conservation.

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