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Influences on the uptake of covenant mechanisms for nature conservation on private lands in Australia

Thomas I. Kabii
Edith Cowan University

Edith Cowan University

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Influences on the uptake of covenant mechanisms for nature conservation on private lands in Australia

Thomas Irungu Muchiri Kabii

B. Sc. For. Moi University

M. For. Sc. Melbourne University

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USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

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Declaration

I certify that this thesis does not, to the best of my knowledge and belief:

(i) incorporate without acknowledge any material previously submitted for a degree or diploma in any institution of higher education;

(ii) contain any material previously published or written by another person except where due reference is made in the text; or

(iii) contain any defamatory material.

Signature..... .....11th March 2004

Thesis Abstract

Globally management agreements have emerged as more effective in assuring long-term nature conservation on private land, than regulatory mechanisms alone. Restrictive permanent covenants in particular, which are legally binding management agreements in perpetuity, have been adopted in most States and Territories in Australia. However, there is reluctance among landholders to take them up.

Sound understanding of the factors that influence the decisions of landholders regarding the uptake of permanent covenants is important in planning and strategizing for increased covenant uptake. The aim of this thesis is to further this understanding and to support the design of a coordinated covenant mechanism for nature conservation on private lands in Australia. This thesis postulated that the decision of landholders regarding the uptake of permanent covenants could be explained within the theoretical framework of landholders' adoption of land and agricultural conservation practices and technologies.

Three self-administered questionnaires were employed in this study through mail surveys on three groups of landholders in two Australian States (Victoria and Western Australia): one for permanent covenant holders, another for fixed-term agreement and fixed-term covenant holders in Victoria and Western Australia respectively, and another for non-holders of covenant or agreement holders in both States. Data, both qualitative and quantitative, were collected on demographics, socio-economics, landholders' attitudes, and property characteristics. The data analysis included frequency distributions and proportions, analysis of variance, multivariate regression path analysis, and content analysis of written views of landholders on incentives and disincentives for covenant uptake.

Landholders' decisions regarding uptake of a permanent covenant are influenced directly, and/or indirectly by several interactive factors categorised into five non-mutually exclusive constructs: landholders' confidence in permanent covenant mechanisms, nature conservation ethic, outlook on property rights, level of economic dependence on the property, and nature conservation equity.

In both States, there is lack of comprehensive knowledge about permanent covenant, leading to negative perceptions about the purpose, intentions, and ability of permanent covenants to deliver the desired outcomes, and these affect landholders' confidence in permanent covenants. In addition, misconceptions and misunderstanding abound on the rights

attached to private property and the relationship between these rights and permanent covenants. Furthermore, policy measures to compensate for loss of landholders perceived property rights are likely to induce relatively similar measure of response to permanent covenant uptake among all landholder categories. There is a need for clarification of the allotment of property rights over biological resources that have a public good on private property among the different claimants.

Voluntary uptake of management agreements mostly attracts the landholders who are least economically dependent on their property and those who have a high conservation ethic and appreciation of conservation values on their property. The presence of the economic dependent category of landholders justifies the use of financial incentives to motivate their uptake of permanent covenants.

Recent amendments to the taxation law to address loss in land value are likely to have disproportionate magnitude of impact of conservation policy on different landholder groups, confirming the need for a pre-implementation policy impact assessment on the relevant landholder groups.

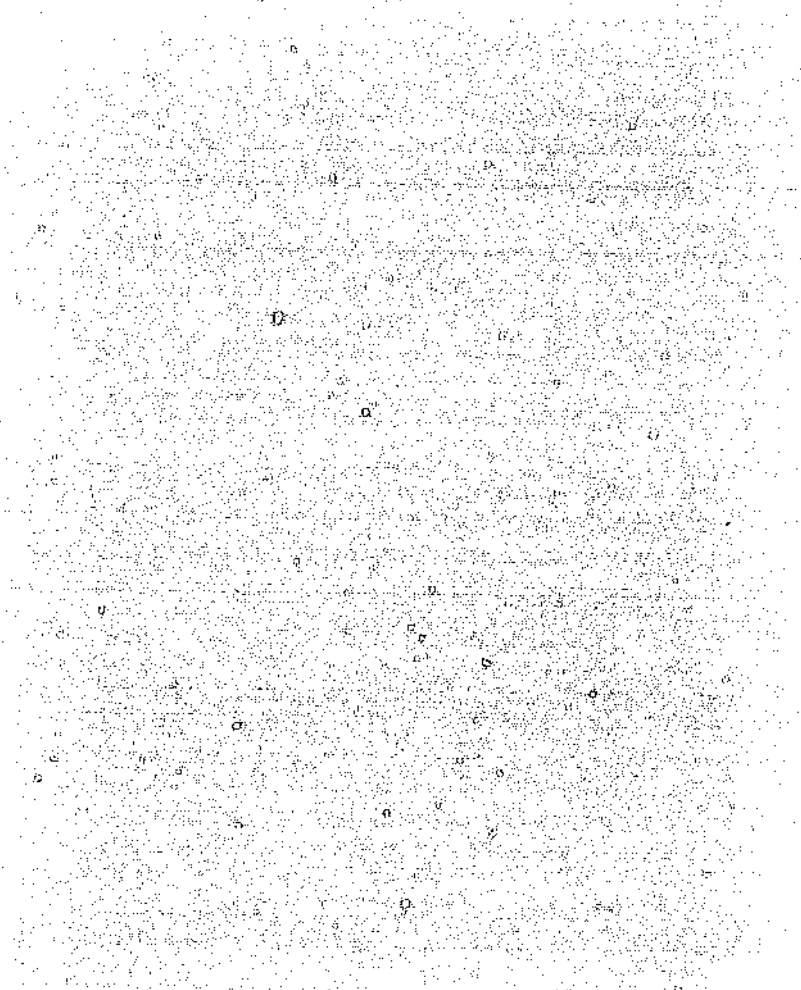
There is lack of a comprehensive policy framework for nature conservation on private land to address the complex issues that affect private conservation efforts. Development of incentive measures that ensure sustained motivation to conserve nature and a gradual shift from compensatory approaches to stewardship support measures are necessary. In view of the trans-generation and transferability of land, programs that promote a nature conservation ethic need to move beyond current landowners to potential future ones.

Extension programs can address perceived disadvantages to, and losses to be incurred by landholders caused by, taking up a permanent covenant. Extension programs and policies that clarify the connection between biodiversity on private land, landowners' goals and aspirations, and the link between human wellbeing and the healthy maintenance of the environment can encourage a value and ethic for nature conservation and in turn motivate the uptake of permanent covenants and land stewardship. Clarification to landholders of the importance of the biodiversity on a specific property to the overall regional and national biodiversity plans and needs, and the importance and value of a specific landholder's contribution to conserving biodiversity are necessary to motivate the uptake of permanent covenants.

Definition of terminologies and key abbreviations used in the thesis

- *Nature conservation areas:* refers in this study to areas set aside in their natural condition on private land to conserve some natural features such as wetlands, bushland, native vegetation, or native grasslands. They may also be areas that are habitat for rare, endangered or vulnerable plant or animal species, areas that are used as transit routes by some native animals, areas that serve an important environmental protective role, areas that serve important water balance functions to the region, and other functions which might be considered relevant for natural heritage purposes.
- *Permanent covenants (Covenants in perpetuity):* refer to a voluntary management agreement in perpetuity that is attached to the land title, binding current and future owners of the land
- *Covenant mechanisms:* refer to the social, economic, and institutional and organisational measures for providing voluntary opportunities to landholders to place a permanent covenant on their land.
- *Fixed-term covenants (Fcov-WA):* are legally binding conservation agreements between landholders and another party that are attached to the land title for the specified period. A fixed-term covenant in this thesis refers to a 15 or 30-year agreement practised in Western Australia under the Remnant Vegetation Protection Scheme.
- *Fixed-term agreements (Fcov-Vic):* refer to voluntary, non-binding informal agreements between a landholder and another party. In the context of this study, this refers to the Land for Wildlife Scheme in Victoria.
- *No covenant or agreement (Nocov):* refers to the absence of any type of agreement or covenant for nature conservation between the landholder and other party or parties.
- *Incentive measures:* refer to measures introduced by government, government agencies, private agencies, or individuals either in form of policy or direct provisions to landholders with a view to motivate them to make a decision to place a permanent covenant on land.
- *Landholder:* is a term used interchangeably with 'landowner', 'participant', 'subjects' and 'respondent' to refer to the proprietor of the farm or property targeted in the study.
- *Property:* refers to the demarcated piece of land under the private ownership of the landholder who is the subject of the study.

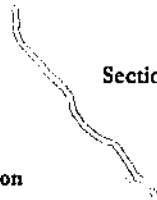
- *Biodiversity*: this term is applied in this study in reference to the variety of all life forms- the different plants, animals and micro-organisms, the genes they contain, and the ecosystems of which they form a part (as defined in Australia's National Strategy for the Conservation of Biological Diversity).



CHAPTER 1

The Nature Of The Study

The aim of this chapter is to provide the background and justification for the research and its theoretical underpinning.



Section 1: The Setting

1.1.1 Introduction

The need to conserve biodiversity on private land in Australia is widely recognised (Bates, 2001; Binning & Young, 1997; Commonwealth of Australia, 1994; Woodhall & Sutherland, 1995) because the biodiversity is under threat and private land contains much of the country's un-represented or under-represented biogeographical regions (Productivity Commission., 2001). Legal mechanisms, widely used in public protected area systems, are alone ineffective for assuring long-term nature conservation on private land – they have high cost and inefficiency of enforcement (Briggs, 1998; Farrier, 1995; Hawks, Cubbage, Haney, Shaffer, & Newman, 1993; Klapproth & Johnson, 2001).

Management agreements and covenants have emerged as significant alternatives throughout the world, and more recently in Australia. Covenants-legally binding management agreements in perpetuity have received attention in Australia lately because of their ability to ensure long-term (permanent in terms of land tenure) nature conservation. Their effectiveness in conservation is confirmed by different social science models and empirical findings (Brant, 2000). Despite this, there is a noted reluctance of landholders to take up permanent covenants (Binning & Young, 1997). Furthermore, the decision of a large cross-section of landholders to enter a voluntary covenant on their land is motivated little by the desire to conserve (Binning & Young, 1997; Trust for Nature, 1996) and more by other reasons that have not been comprehensively investigated or understood.

Most studies on nature conservation on private land have focussed on motivational factors and the necessary incentives for landholders to retain native remnant vegetation and grasslands (Australian and New Zealand Environment and Conservation Council, 1997; Binning & Young, 1997; Denys Slee and Associates, 1998; Elix & Lambert, 1998; Gilfedder & Kirkpatrick, 1995; Jenkins, 1998; Walpole, Lockwood, & Miles, 1998). Some of the studies have recommended the use of management agreements to support long-term nature conservation on private land.

There has been limited empirical research on factors that influence the decision of private landholders in the use of specific mechanisms such as voluntary covenants for nature conservation in Australia. Preliminary studies in this area have been carried out in Western Australia and Victoria (e.g., Orsini, 1996; Safstrom, 1993) and more recently, a national survey on landholders' perceptions and attitudes to permanent covenant has been conducted by Stephens (2002). These studies provide a framework on which comprehensive studies on the

array of factors that influence landholders' decisions in the uptake of voluntary covenant can be carried out.

Understanding the reasons for landholders' decisions regarding the uptake of permanent covenants is fundamental to the formulation of effective and efficient policies on nature conservation on private land. The purpose of the present study, therefore, is to determine the viable mechanisms and options for achieving long-term nature conservation on private land through a comprehensive understanding of the factors that influence private landholders' decisions towards the uptake of a permanent covenant.

Specifically, this study explores the factors that influenced or are likely to influence the decision of landholders in Victoria and Western Australia on the uptake of a permanent covenant and the necessary State and Local governments' policy tools for encouraging the uptake of permanent covenants. An assessment is made of the factors that influence the decision of landholders in the uptake of a permanent covenant in different categories of landholders who include the following: permanent covenant holders in Victoria, fixed-term covenant holders in Western Australia, fixed-term agreement holders in Victoria and non-holders of conservation covenants or agreements in Victoria and Western Australia. Justification for inclusion of Victoria and Western Australia in the study is made in Chapter 2.

The broad hypothesis of this study is that the motivation of landholders in the uptake of permanent covenants is a function of an interaction of factors that include landowners' perceptions and attitudes to covenant mechanisms, their perceptions of the necessity of a permanent covenant for long-term nature conservation, and the will to conserve nature on their land. Landholders' motivations can also be hypothesized to be a function of their assessment of the present and future utilitarian value of the land, the institutional arrangements by government and the level of incentives available to sustain the motivation. These motivational factors form the decision framework of landholders on the uptake of a permanent covenant and they are the basis for designing effective policy measures for encouraging voluntary permanent covenant uptake on private land.

Implicit in the present study is the premise that there are similarities in the factors that influence private landholders' uptake of voluntary nature conservation agreements such as covenants and the factors that influence the adoption of agricultural conservation practices and retention of native vegetation on private land. This premise is based on preliminary findings on the factors that influence landholders' uptake of permanent covenants (Orsini (1996) and Safstrom (1993); factors that influence the adoption of agricultural conservation practices and technologies (e.g., Campbell, 1991; A. Curtis & De Lacy, 2001; Reeve & Black, 1998); and factors that influence the retention of remnant vegetation on private land (Coates, 1987; Jenkins, 1998; Lockwood & Walpole, 1999a, 1999c; Miles, Lockwood, & Walpole, 1998)

However, most adoptions of agricultural conservation practices and technologies and retention of remnant vegetation on private land by landholders do not involve legally binding arrangements. Therefore, differences can be anticipated in the types and magnitude of factors that influence landholders' decisions on the adoption of conservation mechanisms and the uptake of permanent covenants.

The legally binding nature of permanent covenants on present and future owners of the land distinguishes them from other non-legally binding or binding management agreements. In effect, decisions of landholders regarding their uptake are likely to be influenced by different sets of factors and/or magnitudes to those that influence the uptake of other management agreements. This study is not intended to justify the use of permanent covenants as the best mechanism for long-term nature conservation on private land; but rather to establish how their use can be tailored to encourage their uptake by landholders as a long-term nature conservation option.

1.1.2 Aims and Objectives of the study

In order to achieve the stated purpose of this study, three specific aims and their respective operational objectives were identified. The first aim is to establish the factors that have influenced the decision of landholders to take up a permanent covenant, which can characterize the decision framework on permanent covenant uptake. In order to achieve this aim, an assessment was made of landholders' socio-demographic situations, economic situation, onsite factors, social affiliations and attitudinal factors in relation to their decision to take up a permanent covenant. In addition, the relative importance or influence of these factors in the decision on uptake of permanent covenants was estimated.

The second aim of the study is to provide evidence of the influence of particular socio-demographic factors, economic factors, onsite factors, and social affiliations, institutional factors and attitudinal factors, on the likelihood of non-holders of permanent covenants to take up a permanent covenant. This was carried out by investigating landholders' demographic data, socio-economic conditions including levels of income and economic dependence on the land, short and long-term goals and objectives for their land and perceptions and attitudes to long-term nature conservation. It was also carried out by assessing landholders' attitudes to permanent covenants as mechanisms for supporting long-term nature conservation, in terms of their necessity, impact on land value and property rights, equitability, compatibility with short and long-term objectives of the land and the economic implications on their property.

This second aim was also carried out by establishing the relationship between the above-mentioned factors and the likelihood of the landholder taking up a permanent covenant.

Comparisons are also made between the factors that characterise permanent covenant holders and non-holders of permanent covenants in order to establish the factors that most closely predict the likelihood of landholders' decision to take up a permanent covenant. An estimation of the relative importance of the identified factors is made.

The third aim of the study is to establish the barriers and incentives for permanent covenant uptake by investigating the views of landholders on, and expectation for, various economic and non-economic incentives measures.

1.1.3 Research Questions

The following research questions aim to address the objectives of the present study:

- Is there evidence of factors that typically characterize landholders who have a permanent covenant?
- Is there a relationship between exogenous factors such as the ratio of conservation to total land area, age, tenure on land, socio-economic disposition and landholders' uptake or likely uptake of a permanent covenant?
- Is there a relationship between endogenous factors such as landholders' knowledge and awareness and familiarity with permanent covenant mechanisms and landholders' uptake or likely uptake of a permanent covenant?
- Is there a relationship between endogenous factors such as perceptions and attitudes to permanent covenants as mechanisms for nature conservation, in terms of the covenants' benefits, necessity, and impact on land value, effectiveness in assuring long-term nature conservation and effectiveness over other mechanisms, and landholders' uptake or likely uptake of a permanent covenant?
- Is there a relationship between endogenous factors such as attitudes to private property rights, perceptions on equity and landholders' uptake or likely uptake of a permanent covenant?
- What are the specific barriers and incentives to landholders' uptake of a permanent covenant?

1.1.4 Synopsis of the thesis

This thesis is divided into six chapters. The first section of chapter 1 contains an introduction to the study, including its aims and objectives. A brief overview of management

agreements and covenant practices and a detailed exposition of the application of specific management agreements schemes and covenants in perpetuity are provided in the second section. The third section contains a review of literature on the theoretical framework of landholders' decisions for adopting agricultural and conservation mechanisms and innovations on their land, which is proposed as the framework on which decisions on the uptake of permanent covenants are based. A review is made of selected Australia federal and state (Victoria and Western Australia) government policy tools that address nature conservation on private land. Victoria and Western Australia were selected for the review because they contain the sampling frame of landholders who are included in the study. These landholders are likely to be affected by the said policy tools in their decision on the uptake of permanent covenants.

The second chapter presents the method of data collection and analysis. It also contains an introduction to the study questions. A description of the measured variables, justification of the study methods, description of the survey design outlining the selection of study sites, the sampling methods and the operational issues encountered in sampling, are also provided. In addition, description of the development of the questionnaire instruments and the procedure followed in pilot testing and its findings are provided. Lastly, description of the procedures used in carrying out the main survey and data analysis is presented.

The objective of Chapter 3 and the following two chapters is to provide a description of the landholders in relation to their demographic, socio-economic and attitudinal characteristics and property characteristics. Section 1 of chapter 3 contains the findings of the descriptive analysis for permanent covenant holders. Description of the landholders based on a synthesis of their comments and views on policy incentives and the use of covenants is provided in section 2, while section 3 contains a discussion of the findings of this chapter.

Chapter 4 is divided into four sections. The first section contains a description of the characteristics of fixed-term covenant and fixed-term agreement holders as outlined above. The relationships between several independent variables in the study and landholders' attitudes to a permanent covenant uptake are also provided. Results of multivariate path analysis are presented in section 2, while a synthesis of comments and views of landholders on policy incentive measures for motivating a permanent covenant uptake is presented in section three. The last section contains a preliminary discussion and conclusion of the chapter carried out using a comparison between the States.

Chapter 5 covers landholders who do not have any form of covenant or agreement for nature conservation on their land. Its organisation is identical to that described in Chapter 4.

Chapter 6 is divided into three sections. The first section presents an introduction and description of a conceptual model that is constructed from the research finding, showing the relationships between the various factors and covenant uptake. The second section contains a

discussion on the interactions of these factors. Attention is drawn to the consistency of the five factor constructs, other factors and policy tools represented in the model with relevant theory and literature. Discussion on the appropriate incentive measures for uptake of permanent covenant and justification for their use is also presented. The third section contains the conclusions of the chapter including the contribution of the thesis to knowledge and recommendations for further research.

The section that follows presents a review of literature of some of the voluntary approaches to nature conservation on private land in Australia, in particular management agreements and covenants. The aim of this review is to outline the structure of these voluntary approaches including their function and the requirements for their uptake.

Section 2: Approaches to nature conservation on private land using management agreements and covenants

In this section, a general overview of management agreements as mechanisms for nature conservation on private land is provided. This is followed by a more detailed overview of specific nature conservation schemes represented by the groups of landholders in this study: Land for Wildlife program in Victoria, Remnant Vegetation Protection Scheme in Western Australia and Permanent covenant program under Trust for Nature (Victoria). These are reviewed with the aim of drawing attention to the schemes' attributes, which could have an influence on landholders' decision towards the uptake of a permanent covenant.

1.2.1 Management Agreements

Reviews of the use of management agreements as voluntary schemes for nature conservation on private land by Binning & Young (1997) and Stephens (2001) indicate that there has been an increase in their use in most States and Territories in Australia.

A "management agreement", in the context of nature conservation, is an umbrella term denoting a suite of contracts or arrangements between owners of land and other persons or agencies that will support conservation activities on the land (Findlay & Hillyer, 1994). These arrangements are sometimes referred to as stewardship agreements as they delineate the responsibilities of the contracting parties for the care of land. Management agreements are also a form of collaborative management arrangement (Renard, 1997). They are used on private land as an alternative to mandatory suite of legally enforceable mechanisms such as regulations and legislation (often referred to by the economic and legal fraternity as "regulatory command and control") because of their greater efficiency in cost and monitoring requirement.

Management agreements are normally entered into voluntarily and can be initiated by the landowner (referred to as Landowner Initiated Agreements) or provided as transitional agreements to landowners that are disadvantaged by the implementation of new or modified nature conservation policy or legislation, or to protect priority areas of high conservation values as Unique-Site Agreements (Binning & Young, 1997). Management agreements can be legally or non-legally binding and their duration can be fixed-term or permanent (in perpetuity). In addition, they can include all or a portion of a landowner's property.

Management agreements are most useful where a private landholder does not have alternative mechanisms with which to secure the long-term protection of land and/or sufficient skills and/or resources to provide adequate protection to high value conservation features on the land. In Australia, management agreements have been used to protect wildlife habitats for

rare and threatened flora and fauna and biological diversity in threatened landscapes. They enable landholders to retain the management of the land thereby efficiently employing local knowledge, skills and resources, thus providing greater stability and continuity (Renard, 1997) particularly when the benefit of the agreement are apparent.

1.2.1.1 Non-legally binding management agreements

Landholders and resource users favour voluntary programs that do not require legal undertaking over binding contractual arrangements or compensatory measures. Some examples of voluntary non-legally binding management agreements in Australia include national programs such as the Land for Wildlife, the Indigenous Protected Areas program of the Natural Heritage Trust (NHT) and the Grassy Ecosystem Grant of World Wide Fund for Nature (WWF). Others include State or Territory based agreements such as the Wildlife Refuges Scheme, the Conservation Agreements by the Nature Conservation Trust in New South Wales and the Woodland Watch Scheme by WWF in Western Australia.

Land for Wildlife program (Victoria)

The Land for Wildlife program in Victoria is the only voluntary non-legally binding agreement included in this study. It is administered by the Department of Natural Resources and Environment (DNRE) with the assistance of Bird Observers Club of Australia (BOCA). The aims of the program are to support the maintenance and enhancement of native flora and fauna on private land through cooperative agreements, provide financial incentives and advisory services and to encourage the integration of nature conservation with other land management objectives (Land for Wildlife, 2000). The program membership has expanded rapidly from less than a hundred in 1981 to over five thousand members in the year 2002. It covers properties with a total area of over 115,000 hectares of wildlife habitat such as rainforest, freshwater wetlands, box and ironbark and red gum trees, scrubs and herb-lands and grasslands (Land for Wildlife, 2000).

Properties are registered under Land for Wildlife on satisfying a set of criteria, through a formal assessment by the staff of DNRE, members of BOCA or authorised volunteers. Assessment criteria are not strictly defined but require that properties satisfy at least one of two criteria- properties are managed in a way that pursues the maintenance and enhancement of native flora and fauna and properties and; properties are managed in a way that attempts to integrate nature conservation with other land management objectives. Clarification of the intentions of the landholder, the attributes of the property including its ability to support wildlife, its habitats and potential management problems, are included in the initial assessment. Landowners whose properties are accepted for registration receive a certificate of registration

and a signed Land for Wildlife Agreement containing the terms and conditions of membership (Land for Wildlife, 2000).

Properties that fail to meet at least one of the two assessment criteria may be reviewed in future for registration on fulfilment of recommended changes or actions. Registered properties are reassessed after a few years, providing the opportunity to review landholders' goals and to discuss any issues relating to the program. The incentives provided to landholders under the program include a signage showing that they are members of Land for Wildlife, encouragement and technical advice through visits by extension officers and a periodic newsletter with information on wildlife management issues. A limited edition badge and certificate to honour landholders who achieve a ten-year membership are also provided as incentives (Land for Wildlife, 2000).

The uncertainty of delivery of expected conservation outcomes in non-legally binding programs makes them less favourable choice to conservation organisations despite their lower operating costs than legally binding programs (Brotherton, 1989).

1.2.1.2 Legally binding agreements

The common characteristic of restrictive binding agreements is that they curtail certain rights of a landholder over their use of and impact on the property (Young et al., 1996). They are attached to the land title and are made between the owner of a property or agreement holder and a non-profit organization, government agency or department.

Different types of legally binding management agreements are in use around the world and in Australia. Fixed-term agreements as opposed to restrictive permanent agreements are only binding over the specified period of the agreement. Some examples of legally binding restrictive fixed-term agreements in Australia include the 30 years conservation covenant under the Remnant Vegetation Protection Scheme in Western Australia, and the Property Agreement in NSW, which is contained in the Native Vegetation Conservation Act (1997) under the Department of Land and Water Conservation. The later Agreement is between a landholder and the Department of Land and Water Conservation. It outlines the management of native vegetation on the property for a specified period (Department of Land and Water Conservation (NSW), 1998). However, both agreements provide the option of permanency and offer incentives in form of fencing grants and financial assistance to cover on-ground conservation work in New South Wales (Sally Stephens, 2001).

A review of the Remnant Vegetation Protection Scheme in Western Australia examining its characteristics and operation is provided below, as it is the only legally binding fixed-term management agreement (fixed-term covenant) included in this study. Information

on this scheme is important in pointing out attributes that may have a role in influencing its members' decision towards the uptake of a permanent covenant.

Remnant Vegetation Protection Scheme (Western Australia)

The Remnant Vegetation Protection Scheme (RVPS) is a conservation mechanism established in 1989, which provided for both mandatory and voluntary protection of native vegetation on private land. The Scheme was developed in Western Australia following calls by people of different disciplines for the need to curb widespread and continued clearing of native vegetation on private land through the introduction of appropriate land clearing control regulations (Jenkins, 1998). Land clearing regulations that empowered the State Government to intervene and prevent clearing of land where such clearing was viewed likely to cause land degradation were gazetted under the Soil and Land Conservation Act (1986) thereafter

Under the Soil and Land Conservation Act, a private landowner is required to notify the Commissioner of Soil Conservation of intent to clear more than one hectare of land at least 90 days before such action. The Commissioner then assesses the likelihood of land degradation resulting from the clearing. If an assessment indicates there is likelihood of detrimental effect of clearing on the land, permission to clear is denied and the land is placed under mandatory clearing protection under the Soil and Land Conservation Act by the issuance of a Soil Conservation Notice, or by the landowner entering an Agreement to Reserve[1](Jenkins, 1998).

Remnant Vegetation Protection Scheme under the 'Agreement to Reserve' requires landowners to protect areas of high quality vegetation as a regulatory condition for grant of a permit to subdivide the property, make changes of land-use or to clear part of the land.

Following an amendment to the Soil and Land Conservation Act in 1990, provisions were made for landowners to protect remnant vegetation by use of Conservation Covenant mechanism. The covenant is registered on the Certificate of Title, either in perpetuity (Permanent Covenant) or over a fixed period of at least 30 year, in return for fencing subsidies for the land areas under protection. Under the RVPS, landholders received up to A$1200 per km for fencing areas placed under the scheme. Furthermore, grants for on-ground works maybe available through the Department of Conservation and Land Management where land is placed under a permanent covenant.

A landowner assessed to have valuable native vegetation the property, therefore, has the option of entering a fixed-term covenant voluntarily or placing the mandatory agreement

[1] A formal agreement between the Commissioner of Soil and Land Conservation and the landowner, registered as a memorial on the Certificate of Title, in which the landowner accepts the land assessment and the importance of retaining native vegetation on the land.

on the land under the 'Agreement to reserve' under Soil and Land Conservation Act (1986) at a time when an application to subdivided or change of land-use or clearing of land is sought from government. The conditional characteristic of this agreement (Agreement to Reserve), in which a landholders may only be permitted to change land-use type or to subdivide the property upon entry into a fixed-term covenant, invalidates the classification of the Agreement's as totally "voluntary", particularly because the primary intention of the landholder under the 'Agreement to Reserve' is not the conservation of remnant vegetation. Conditional grant of permit to landholders may create the perception of coercion into the scheme and therefore be less likely to guarantee quality conservation of the remnant vegetation. Currently the Scheme is suspended and under program review.

1.2.2 Covenants in perpetuity (Permanent covenants)

Although the retention of conservation feature of significant value on private land has benefit to the wider public, government or private agencies cannot afford to buy and maintain every conservation area on private property that merits preservation. Conservation covenants in perpetuity referred to in this study as "permanent covenants" or "easements" in the United States, provide the possibility of maintaining significant conservation features on the properties often at private expense.

Permanent covenants are flexible documents attached to the land title and tailored to individual properties and the needs of individual landholders. They restrict the use of the land by specifying the obligations and entitlements under which the land is to be managed (Binning & Young, 1997). Permanent covenants, therefore, place a long-term commitment on the landowner and the private or public conservation agency for the protection of important conservation values of the land while allowing the landowner to retain possession of the land (Hillyer & Atkins, 2000).

In Western Australia, the Transfer of Land Act (1893) allows local governments or public agencies to enter into a covenant with a landowner on a wide range of issues including nature conservation (Clement & Bennett, 1998). The advantage of permanent covenants for nature over other forms of non-binding management agreements is their ability to restrain opportunistic behaviour such as the conversion of the conservation land to other land-uses when it is profitable to do so (Young et al., 1996). Such changes are likely to occur when there is a change in the titleholder.

Another advantage of permanent covenants is that they offer an opportunity for creating a new form of protected areas outside the conventional protected area system. In Australia for example, this is in accord with Federal Government's commitment to create more protected areas for biodiversity conservation, as a measure for implementing the National

Strategy for Conservation of Biodiversity (1996). In addition, permanent covenants are viewed as more cost effective than public acquisition and management of land (Hillyer & Atkins, 2000).

A review of the process and legal basis of a permanent covenant in this study is provided in the following text in order to accentuate the attributes that have possible influence on the perceptions and attitudes of landholders towards its uptake.

1.2.2.1 The process and legal basis for permanent covenants

The landholder or the covenantee can initiate the process of entering a permanent covenant on land. A private landholder (covenantor) can identify an authorised conservation organization or public agency (covenantee) with whom to enter into an agreement and negotiate the restrictions on the use of the conservation area that are to be included in the agreement. The agreement takes into account the goals and needs of the covenantor and the need for preservation of the conservation features on the properties. The agreement also sets out the monitoring and enforcement protocol to be followed. Legal representation is often required in the drafting and review of the agreement.

Conservation covenants can be modified or terminated with the agreement of both covenantee and covenantor or by a court of law, particularly when the conservation objectives of the covenant become impossible to achieve. This ability to challenge a permanent covenant in a court of law or change it in the future may cause them to be viewed by conservation-minded landholders as unreliable for assuring the long-term nature conservation and provides a reason for their reluctance in its uptake.

1.2.2.2 Provisions and management requirements under a permanent covenant

A covenantee often provides certain supports to a covenantor in return for a covenant. For example, in the National Trust of Australia's (Western Australia) covenant program covenantors have the possibility of receiving various incentives such as access to specialist environmental management advice, support in the preparation of management plans and access to regional officers and access to funding from the program and other funding programs to support the implementation of a management plans. In addition, covenantors can have linkages to a range of specialist community groups and other programs that can provide training and support with expertise, volunteers and specialist activities, such as seed collection, revegetation and weed control, advocacy and support. Financial support is also provided to cover legal costs of establishing the covenants. The National Trust collaborates with governments at various levels and other conservation groups to advocate for reduction in land rates and taxes on covenanted land.

In the Act to amend the law relating to taxation law (Taxation Law Amendment Act, No 2 of 2001, and No. 167, of 2001- Schedule 7- Conservation Covenants), provision is made for conservation incentives in the form of tax deductions for conservation covenanting or donations of land or bargain sales with retained rights of occupancy. The new measures also provide capital gains tax exemptions on land bequests for conservation. It addresses loss in land value by providing income tax deductions and concessions on capital gains tax treatment as incentives to landowners and certain deductible gift recipients to take up a permanent covenant for nature conservation. Such deductions are available to landowners at the time of property sale to cover any loss in market value of their property because of having placed a permanent covenant on it.

1.2.2.3 Permanent covenant schemes under Trust for Nature in Victoria and Fixed-term covenant in Western Australia

Permanent covenants in Victoria are established by an independent statutory body, Trust for Nature also referred to as 'The Trust' under the Victorian Conservation Trust Act 1972. A permanent covenant can only be placed on land that has significant ecology, natural aesthetic, historic interest, or importance for conservation of wildlife or native plants (section 3A (1)). It is enforceable as a restrictive covenant, though it may ascribe positive actions to be carried out by the covenantor in its agreement.

The Trust operates the largest number of covenants and is one of the most active covenant initiatives in Australia. As at December 2002, 473 covenants covering more than 19140 hectares had been registered. It also purchases land of high conservation value through a revolving fund (Trust for Nature, 2002).

Legal costs associated with placing the covenant on the land are covered by the Trust but the covenantor makes a once off donation of $3,500 per property to fund on-going monitoring and management of the covenant by the Trust. The restrictions placed upon landholders by a covenant cover all or part of the area under the agreement. They also prohibit sub-division of the conservation area and require that it be fenced. All domestic grazing animals and feral animals such as cats are to be excluded from the conserved areas and the role of domestic dogs and landholders' responsibilities in controlling exotic weeds and removal of timber are outlined (Trust for Nature, 2003).

The agreement requires covenantors to undertake the conservation or care of any bushland, trees, rock formations, buildings, or other objects on the land. The actions and duties of the covenantor and covenantee are contained in a management program designed in conjunction with the landowner. It includes a monitoring component, which evaluates the effectiveness of the covenant once every three years (Whelan, 1996).

The task of designing a covenant that meets all the attributes desired by both parties is difficult and complex. Further, it is not clear from the Trust for Nature Article's text whether a permanent covenant can be placed on conservation features, such as wetlands, or on conservation features that are used to mitigate erosion and salinity, where such features do not incorporate bushland or trees.

Covenants may be terminated by the Trust or varied by agreement between the Trust and all persons having an interest in the land and bound by the covenant, with the approval of the Minister. Section 3A (3)-(9) of the Act empowers the Minister, if he considers owners of land in the vicinity to be affected, to direct the Trust to give notice of the proposed termination or variation and other owners given the opportunity to make submissions within a month (Victorian Conservation Trust, 1994).

The Minister can make an order remitting the whole or any part of land tax or rates payable in respect to the land, under section 4 of the Victoria Conservation Trust Act 1978, where the Trust believes preservation of land subject to a conservation covenant is not economically feasible and preservation is endangered. This power, however, has not been used to date. Its record in signing on many landholders into covenants has made the Trust a model for other Australian States and Territories.

In Western Australia, two covenant initiatives by the National Trust of Australia (Western Australia) and the Department of Conservation and Land Management (CALM) are modelled after the Trust for Nature Covenant initiative (Bradby, 1998). The Conservation and Land Management Act of 1984 is currently under review to broaden its provision and support for covenant initiatives. This covenant is described earlier as the Remnant Vegetation Protection Scheme under the Commissioner of Soils and Lands.

In Western Australia, covenants can also be entered into between a landowner and a local government or public authority, under the Transfer of Land Act. All covenant programs in Western Australia offer a level of financial incentive to encourage the uptake of covenants.

Section 3: Theoretical framework for the uptake of conservation covenants

This section reviews the literature on the specific factors that are predicted to influence the decision of landholders in the uptake of permanent covenant. The theoretical framework on which these influences take place is also presented. In view of limited empirical research on the uptake of restrictive management agreements for nature conservation, this review draws significantly from findings of empirical research on factors that influence the adoption of land conservation and agricultural technologies on private land and retention of native vegetation. These adoption and retention schemes and covenants are hypothesized to share several common factors that influence the decisions of landholders on their use.

1.3.1 The complexity

As with overall conservation of biodiversity on private land (Farrier, 1995), adoption of conservation innovation by private landholders is multifaceted, with a complex adoption decision framework involving several factors (Warriner & Moul, 1989). Lack of wide adoption of many cost-effective land conservation measures is the result of a suite of social, structural, cultural, perceptual, and financial situations and processes rather than a technical problem (Vanclay & Lawrence, 1995). Some of the situations cited by Vanclay and Lawrence that are hypothesized to have relevance to decisions on the uptake of permanent covenants include the complexity of the management practice, incompatibility with farm and personal objectives and loss of flexibility through tight restrictions. Other situations include implementation cost, uncertainty about benefits from the investment and conflicting information about benefits or consequences of adoption, perceptions of the environment, infrastructure that can support the implementation of the required actions and the social infrastructure, referring to the influence of other farmers on individual farmer's decision.

Encumbrances on the land title and other restrictions on use of the land under conservation can hinder landholders from taking up nature conservation schemes (James, 1997; Productivity Commission., 2001). Furthermore, resistance to adoption of conservation mechanisms is likely to occur if landholders perceive the proposed program activities not to be in their interest (Cary, 2001). Studies in the United States have shown that farmers are motivated towards environmental protection and participation in the various environmental programs when they have a stake in the outcomes of conservation (Klapproth & Johnson, 2001).

Landholders have a unique way of managing their properties with which they are comfortable and this can impede change to innovations or adoption of conservation technologies (Drost, Long, Wilson, & Miller, 1996). They are also more likely to implement innovations or practices that they view to be profitable, simple to implement and compatible with their goals and objectives of the land (Klapproth & Johnson, 2001).

Landholders respond positively to nature conservation efforts as long as proposed conservation measures are not perceived as a threat to their livelihood in terms of social and economic welfare, long-term objectives for the land and possibly long-term tenure with a notion of retaining land in the family. Measures that are viewed to be economically unfavourable, alienating the land from its owner, or decreasing its market value might not be readily accepted. The large amount of literature on adoption of conservation innovations and mechanism confirms that adoption is a function of a complex set of factors (Wartiner & Moul, 1989).

Harrington Krupnick, & Peskin (1985) propose several questions that have to be addressed in order to influence the behaviour of landholders towards adoption of conservation measures. Some of these include ascertaining who will pay for conservation on private land; how to reconcile individual needs and circumstances with desired conservation outcomes and, how to set conservation goals and standards that are flexible and fair to all. In principle, motivation for nature conservation on private land depends on influencing individual behaviours and particular government policies that have an important role to play in influencing farmers regarding land conservation programs (Hollick, 1990).

1.3.2 Linking attitudes to behaviour

It is not the intention in this study to explore the relationships between attitudes to a permanent covenant uptake and its actual uptake behaviour. A principal aim is to establish the perceptions and attitudes of landholders to permanent covenants based on several attitudinal measures. For this reason a brief explanation for inclusion of attitudes in the study as a measure of a landholders' likelihood of uptake of a permanent covenant is given.

Attitudes have long been the focus of research by sociologists and psychologists. They are defined by Manning, Valliere, & Minteer, (1999, p.45) as "an orientation toward certain objects or situations that is emotionally toned and relatively persistent". In addition, "...they are learned, they are a measure of how people feel about issues and they are an expression of value or belief resulting from an application of a general value to concrete objects or situations".

There is a comprehensive literature of research on attitudes toward environmental issues. Studies by Vanclay & Lawrence (1995) and Haw, Cocklin, & Mercer (2000) and others have suggested that attitudes are not predictive of behaviour because behaviour may change even though the underlying attitudes remain the same because of intervening factors. However, Vanclay & Lawrence concede that the influence of attitudes on behaviour is evident in situations when other influences that are likely to affect behaviour and actions are minimised, or when the attitude is specifically relevant to behaviour, or where individuals are keenly aware of their attitudes.

Myers (1996) asserts that attitudes and behaviour are linked in specific cases, particularly where attitudinal and other relevant measures are included in the assessment. Vogel (1996) adds that attitudes are predictors of behaviour when analysis of the relationship involves attitudinal components and additional influencing variables in a multivariate setting. Attitude theory suggests that attitudes are better predictors of behaviour to which they are specifically related (Ajzen & Fishbein, 1980). Attitudes can be strong predictors of specific behaviour in research conducted within the framework of the Theory of Reasoned Action (Carr, 1988; Eagly & Chaiken, 1993; Fishbein & Manfredo, 1992). Furthermore, successful adoption of conservation practices is likely to be influenced more by farmers' attitudes and perceptions than any other factor (Miranowski & Shortle, 1986; Smathers, 1982).

In encapsulating the importance of attitudinal measures, Haw et al. (2000) contend that programs should focus on countering the barriers that prevent landholders from adopting more sustainable practices, as well as attempting to influence attitudes. They further point out that fostering appropriate attitudes remains important because it reinforces the importance of undertaking more sustainable practices, thus promoting long-term commitments. These latter views on attitudes support their inclusion in the present study as predictors of the likelihood of actual uptake of permanent covenants when measured by several variables. Attitudes can be addressed by education and awareness in a policy framework.

1.3.3 Factors influencing covenant uptake

1.3.3.1 Characteristics of innovation or mechanism

The principal factors that influence the adoption of conservation innovations by landholders vary with the type of innovation. Guerin (1999), for example, points out that adoption of soil conservation practice is attributed to the practice itself. The characteristics and operation of a given mechanism or innovation and the alternative innovations, as well as the principles on which they operate can also influence landholders' adoption decisions. The ease of application or adoption and versatility of conservation innovations or practices are important elements that

influence their adoption (Drost et al, 1996). In reference to decisions on the uptake of permanent covenants it is anticipated in this study that landholders will only take up a permanent covenant when they understand it well, have confidence in it over other mechanisms and when they view it to be easy to implement and in accord with their goals and objectives of the land.

1.3.3.2 Fulltime or part-time farming and age

Hagan (1996) characterised landholders' willingness to participate in conservation programs according to whether they were full-time or part-time farmers and according to the size of their properties. Part time landholders were more likely to participate in the program than full-time farmers were because their opportunity cost of taking land out of production was much lower than for active farmers. They were also less concerned about possible hidden costs of adopting the program and were likely to be interested in on-site amenities generated by the conserved areas than full time farmers. It is therefore anticipated in this study that landholders who are full-time on the land and in effect economically dependent on the property are more likely to have a negative attitude towards the uptake of permanent covenant than those that are part-time and consequently less economically dependent on the property.

Drost et al. (1996) found that age was a factor that influenced adoption of low-input practices on farmlands. Older landholders were more resistant to adoption of low-input practices because they perceived them to be unfeasible or impractical. They were more sceptical about the benefits of adoption since it would in any case not occur in their lifetime. Drost et al. (1996) also found that the risk of learning and applying new techniques was a barrier to adoption of new technologies for older landholders. In this study, therefore, it can be anticipated that older landholders are more likely to have negative attitudes to the uptake of permanent covenant than are young landholders.

1.3.3.3 Duration of land tenure and type of farm managed

Haw et al. (2000) cite studies in which positive correlations have been established between the decision of primary producers about environmental stewardship and the duration of tenure. In contrast to this observation, it is anticipated that landholders with a long period of land ownership in the family are more likely to show resistance to the uptake of a permanent covenant than are landholders with a shorter period of family land ownership. This forecast is in view of their confidence in their ability and accumulated experience to deal with the conservation threats on the land without the use of a binding covenant mechanism.

Buttel, Larson & Gillespie (1990; cited in Vanclay & Lawrence, 1995) point at evidence that suggests that the adoption of innovative environmental practices occur because of

commercial reasons rather than because of the environmental benefits, especially among commercially oriented farmers as opposed to 'farming as a way of life' oriented farmers. This suggestion inherently categorises farmers into two groups based on whether the source of their motivation in decision-making regarding the adoption of an innovation is economic or not.

1.3.3.4 Primary motivation, covenant knowledge and awareness

Klapproth & Johnson (2001) identified the primary motivation of landholders as the factor that differentiated between those that had an interest those that lack of interest in a conservation reserve program. Those that were interested in the program were primarily motivated by nature, environmental conservation and economic reasons while those that did not want to enrol were more either concerned with the economic loss because of adopting the program or wished to avoid the program's rules and regulations.

Inadequate knowledge about a prescribed innovation can limit its adoption (Guerin, 1999). Knowledge and awareness particularly of its benefits and the issue/s that it aims to address are important in the decision on adoption of conservation innovations. Thus, conservation mechanisms that are little known are not likely to be easily adopted. In Ohio (US), for example, information (that leads to increased awareness and knowledge) was one of the most popular citations by farmers as requirements for adoption of conservation practice to succeed (Batte, Jones, & Schnitkey, 1990).

1.3.3.5 Relevance and Goals

Adoption of conservation innovation may not occur even when all is known about a conservation mechanism because of its incompatibility with the landholder's goals and its perceived irrelevance. Harrington et al. (1985) identify conditions that must be met for voluntary programs to succeed: individuals must agree that the goals of the program are worth pursing and that their actions will advance the goal, non-compliance must be observable in order to create social pressure for compliance and the cost of the program should not greatly exceed its private benefits. Nowak (1987) points out that relevance of an innovation in terms of its consistency with landholder needs, socio-economic status, goals and attitudes towards different practices are crucial to its adoption.

In line with the above findings, it is hypothesized that landholders who have a strong nature conservation ethic and a higher level of knowledge and awareness about permanent covenant, are likely to be positive about the uptake of permanent covenant. Furthermore, commercially oriented landholders, as indicated by their level of dependence on their property and the primary land-use type for their income, are less likely to take up a permanent covenant than those that farm 'as a way of life' or with little income dependence on the land.

1.3.3.6 Economic factors

Economists argue that individuals make rational decisions in choosing options that seem to them most likely to secure their largest net economic advantage. Most rural landholders live in an economic environment gaining employment or economic benefits from the land or outside the land. Therefore any major decisions regarding their land might rightly be influenced by the economic implication of the taking either decision (Vanclay & Lawrence, 1995). This view is consistent with Dunlap & Van Liere (1984) in their conclusion that concerns for the environment is a significant motivation for appropriate environmental behaviour only when basic economic and survival needs are met. Hollick (1990) argues that farmers' choices are constrained within some multidimensional "decision space" boundaries within which they operate and a farmer's objectives and perceptions of his/her economic situation are some of the decision determinants held within these boundaries.

Tisdel & Harrison (1999) suggest that biodiversity may be threatened where there is a perception of imbalanced economic benefits in relation to conservation effort and perceived greater benefits from alternative land-uses. This suggestion is supported by studies in the United States, which showed that a possible economic loss from adoption of a conservation program was the great concern of landholders. In addition, they were unwilling to incur costs in programs that had only long-term economic returns (Norris & Shahman, 1988). Economic measures of land condition in terms of its productivity also influence adoption of conservation practices or innovation (Sinden & King, 1990). The level of farm debt is another situational barrier that is likely to influence significantly the decisions of landholders to undertake conservation measures that require or trade off financial input (Haw et al., 2000).

In Australia, economic constraints have been cited as barriers, specifically in the uptake of permanent covenant. In Victoria specifically, difficulties have been encountered in promoting covenants to farmers who are under financial stress (Trust for Nature, 1998). Past research has shown adoption of conservation innovation to be positively correlated with farm income (Gartel & Gartell, 1985; Warriner & Moul, 1989). In applying economic reasons to decisions regarding the entry of a permanent covenant on land, it can be hypothesized that landholders compare expected costs and benefits of available opportunities and choose that which they perceive would promote their greatest welfare.

It is expected in this study that greater effort is needed to convince landholders to uptake a permanent covenant on their land where they perceive a loss in market value of their land because of placing a permanent covenant on it. Similarly, landholders who perceive the possibility of financial obligation arising from entering a permanent covenant on their land would be reluctant to take up a permanent covenant on their land.

1.3.3.7 Perceived risks and benefits

Adoption of conservation innovation is more likely to meet with resistance where the perceived benefits and risks are not clear (Guerin, 1999; Hollick, 1990). On the other hand, farmers will adopt conservation technologies when they perceive land degradation to be a risk to them and when they recognise that it is occurring (Rickson, Saffigna, Vanclay, & McTainsh, 1987). Minimising financial risk is particularly important for encouraging adoption of sustainable farming practices (Drost et al., 1996), because as Conacher (1998 p.392) notes, environmental change only becomes an issue if people feel "threatened". The advantages of an innovation over others that are already in use have to be clear before adoption can take place.

In following the assertion by Rickson et al. (1987), landholders' perceptions of risks of degradation of a conservation area in the long-term may contribute to their decision towards entering a permanent covenant, especially when permanent covenants are viewed as appropriate mechanisms for averting such degradation. Therefore, the landholders' decision regarding the uptake of a permanent covenant can be influenced by their perception of risks and benefits to their short and long-term farm objectives.

Other risks such as undesirable impact of adoption of conservation practices on the agricultural production of the land can influence the decision to covenant uptake. In the United States, for example, landholders expressed fear that the retention of conservation areas under the program would lead to undesirable consequences such as pests like deer and noxious weeds onto the farmland (Klapproth & Johnson, 2001). Similar sentiments have been expressed in Australia in regard to connection of native vegetation on farmlands (Coates, 1987; Jenkins, 1998) to weed and feral animals.

Alexander (1995) argues that farmers are more concerned with using the land to support themselves rather than how to maintain the ecosystem. Landholders, in most instances, need to perceive the direct and tangible benefits of the mechanism or program (Norris & Shabman, 1988). Tisdell (1998 p.218) asserts that local communities often have few incentives to conserve biodiversity because "they often appropriate little economic benefits from this conservation". In Fayette county, IL, United States, for example, landholders were willing to adopt the conservation program if the proposed actions under the program had direct benefits such as a permit to extract material, grazing rights and financial incentives (Klapproth & Johnson, 2001). The benefits of a program or mechanism must therefore be clearly established.

The span of time before benefits can be realised can also influence the adoption of a conservation innovation. Norris & Shabman (1988) suggest that even when economic reasons are the motivation for program adoption, farmers are unwilling to incur costs in proposed program activities or investments that have only long-term economic returns.

1.3.3.8 Equity

Under Article 19.2 of the Convention on Biological Diversity, the text presupposes that there are benefits that flow from the use of biodiversity and that these ought to be shared between the custodians of biodiversity and the public (Glowka, Burhenne-Guilmin, & Synge, 1994). Similarly, there is a view among a cross section of landholders in Australia that the cost of nature conservation on private land should be shared equitably between them and the public and that recognition should be made of the services provided by landholders to the broader community (Australian and New Zealand Environment and Conservation Council, 1997; Productivity Commission., 2001).

Common (1996) and Jodha & Russell (1997) support this view in their observation that conservation initiatives may cause a disproportionate spread of costs and benefits over space and time, thus creating or accentuating perceived or real social and economic inequalities for different landholders in different ways. Concern by farmers that they might be forced to bear the cost or incur losses from conservation actions that primarily also benefit the public has been noted in the United States (Klapproth & Johnson, 2001). Tisdell (1998) asserts that local communities have few incentives to conserve biodiversity because they do not equitably share its benefits. Therefore, despite the increased recognition of the importance of encouraging conservation of nature on private land by governments and the public, several issues have not been addressed -who should pay, how individual needs and circumstances can be accounted for and how we should set goals and standards that are flexible and fair to all (Harrington et al., 1985).

The major tenet of the equity theory, as part of the theory of motivation, is that human beings work to restore equity when they are confronted with inequitable situations (Harrington et al. 1985). Momada (2002) outlines the components of equity (in relation to equity theory of distributive justice) as the proportionality of contributions and outcomes and equal ratios of contributions and outcomes for similar actors. Similarly, Bennett (1996) defines equity in terms of treatment, opportunity and outcomes – that those in need are not denied equal opportunities and outcomes, while in the event of scarce resources those who do not have a need are denied so that those who have a need can have the opportunities and achieve similar outcomes. This theory may be particularly relevant in the apportionment of financial and other economic incentives among landholders for encouraging their participation in nature conservation activities. Intergenerational equity on the other hand is viewed in terms of the distribution of utility over time (Common, 1996) in which a consumption foregone today makes available units of consumption at a future date.

Krattiger & Lesser (1995, p.211) argue that "equity is both important for moral reasons and for the need to share benefits and costs as a means of encouraging conservation". This

suggests that land placed under voluntary covenants should receive the appropriate recognition in kind to cover costs incurred in the arrangements and in some cases, opportunity costs foregone by the private landholder in conserving nature for the benefit of the community. However, the answer to what is equitable is subjective, being linked to individual perceptions and values. A secure basis for determining equitability can therefore be difficult to achieve, requiring an understanding of all factors that different stakeholders use to determine equity on an individual basis and then arriving at a consensus over what might be acceptable to most. One of the challenges in the use of management agreements is how to achieve an equitable and cost-effective incentive mechanism for motivating private landholders to participate in nature conservation.

Binning & Young (1997) make the link between equity and duty of care and stewardship. Stewardship in this context is defined as the partnership between landholders and other bodies, formed to carry out set conservation objectives where benefits of conservation extend beyond the landholder to the public. Stewardship, therefore, involves actions by the landholder beyond the duty of care, which is defined as the expected reasonable response by a landholder to prevent harm emanating from actions or inactions on the property to others. Binning & Young (1997) further assert that stewardship is the better alternative to "command and control" and that compensation should be paid to landholders only for activities over and above the duty of care. Pearce & Wartford (1993) note that the importance of maintaining access to natural capital for ensuring equity is more apparent among landholders who have a strong direct dependence on the natural resource base than landholders who do not have such strong dependence.

Landholders may recognize a problem that requires conservation actions but feel it is beyond their scope of effort to undertake it. In such circumstances Klapproth and Johnson (2001) point out that varying the level of technical assistance may be necessary according to individual needs. Assistance is also particularly important in the introduction of a conservation program and when the expected conservation practices are complex and landholders are unfamiliar with them.

Compensation and substitution programmes (Spergel, 1997) are a way of achieving equity, particularly where the service provided by the landholder in a permanent covenant is classified as a community conservation service. However, the mechanism and criteria for allocating equitable compensation and a resource substitute that provides equal benefits to those foregone in the case of substitution programmes have to be determined.

Legislative and regulatory frameworks can be used effectively to prevent inequity by assigning costs and benefits of conservation in ways that are more equitable. For example, benefits can be distributed in proportion to incurred costs of managing the conservation site,

purchase of inputs of labour and capital items (Borrini-Feyerabend, 1997a). Duty of care is not explicit in current legislation in Australia. However, its incorporation in legislation has been recommended as a means to offset the tendency of legislation to concentrate on the more inefficient and costly to implement 'command and control' regulations (Bates, 2001).

The thrust of such duty of care legislation would be to set standards that require individuals to act within their 'reasonable and practical' ability to prevent harm to the environment where risk occurs (Bates, 2001). The principle of prevention of harm refers to present and future generations, thus linking duty of care to the concept of intergenerational equity. There is, however, difficulty in establishing the point at which the duty of care ends and the community conservation service begins (Binning & Young, 1997). This creates a challenge in determining fairness in compensation that addresses costs or losses incurred beyond the duty of care. Furthermore, because conservation values and expected actions under duty of care vary from one private land to another, it is difficult to determine the different levels of recompense to award each landholder.

Brant (2000) asserts that many landholders want to adopt conservation practices/systems but they are hampered by high social and/or economic costs. He further stresses the importance of high enough monetary compensation in voluntary conservation agreement to ensure that social benefits outweigh social cost and that they coincide with landholders' short and long-term plans. If equity in compensation is not perceived, this could lead to loss in motivation in the case of a permanent covenant uptake and in the long-term management of the conservation area.

Jodha & Russell (1997) point out that safeguards to enhance equity in conservation programmes may involve a mix of measures dealing with compensation for sacrifices, providing a share in the gains in the short and long-term, incorporating the views of the affected people in the choice and design of conservation measures. Again, in the United States, the federal government provided cost share payment to farmers who instilled conservation practices on their property. This payment in principle is society's share of the cost of conservation for the benefits that it gains in it (Brant, 2000).

Jodha & Russell (1997) further note that in order to apply equity in conservation it is necessary to know the socio-economic profile of the participants and their dependence on the resources that are placed under conservation. Equity should ensure there are plans to minimise the disruption of people's lives resulting from participation and loss of access to the resources. Equity promoting compensatory measures (Jodha & Russell, 1997), which are often influenced by existing institutional arrangements and decision making processes associated with the conservation initiative should be employed.

One of the objectives of this study is to explore the views of landholders on equity in respect to the bearers of costs that are associated with the uptake of a permanent covenant and the degree of public involvement in cost sharing for conservation on private land. It is expected that landholders who perceive the need for compensation for land placed under a nature conservation covenant are less likely to take up a permanent covenant than those that do not perceive such need. Furthermore, it is expected that the types of equity measures required to motivate landholders in the uptake of permanent covenants will vary between the different categories of landholders in the study.

1.3.3.9 Property rights

There is no universal definition of property rights (Meyer, 2000), since it constantly changes with time and in accordance to society's expectations and the context in which they are applied. However, property rights assign the authority for any non-prohibited use of specific goods (Eggertsson, 1990) and the rights to claim that use or the benefits that flow from the goods (Macpherson, 1978). A right bestows on an individual the ability to compel the State to defend their interest in a particular outcome (Sjaastad & Bromley, 2000).

Property rights, therefore, "establish relationships among participants in any social and economic system and express the relative power of the rights bearer" for a specified period (Meyer, 2000, p.1). Eggertsson (1990, p.34) goes further to state that the concept of property rights is broad, extending beyond the legal concept to include social norms. These social norms are "supported by the force of etiquette, social custom, ostracism and formal legally enacted laws supported by the States' power of violence or punishment" (Alchian, 1977, p. 129-130). Macpherson (1978) points out that as society changes, property can become controversial in terms of what it is and what it ought to be. People's perceptions of it are also bound to change with time because it is set up with specific purpose at a particular time. Furthermore, "The perception and reality of it makes property both a concept and an institution, both of which influence each other over time" (Macpherson, 1978 p.1). The limits placed on the action of an owner of property are influenced by the expectations and rights of society as formally sanctioned and sustained by law (Meyer, 2000).

Perceptions of incursion of a permanent covenant on their private property rights are an issue likely to influence the decisions of landholders in the uptake of a permanent covenant. Concern about an increased burden of government regulations on property owners and the loss of control over the management of the property under a formal conservation arrangement for the public good, has been raised in different parts of the world (Bates, 2001; United States Department of Agriculture, 1999).

Despite the notion among many people that the land under their title can be used, enjoyed and treated as they wish, historical actions by governments and courts, however, suggest that property rights of private owners are shared with the public (Meyer, 2000). Cullet (2000) points out that all external interest in nature conservation on private property fall under the institution of "common property" rather than "private property" and that users of common property share rights to the resources and are subject to rules and restrictions that govern the use of those resources. Any dealing with the property under common property, therefore, has to take into account the entitlements of others and is subject to approval of those with stakes.

The boundary between obligation and rights varies; with patterns in rights and obligations, reflecting prevailing judgements on what is fair as determined by people's values. Macpherson (1978, p.3) explains that property is "...an enforceable claim because and in so far as the prevailing ethical theory hold it is a necessary human right". Nevertheless, "...it is not to approve of any system of property as morally right or to imply that the defining of the actual right as an enforceable claim implies that force justifies the right".

Property rights are therefore a bundle of rights, such as the right to sell, lease, donate, subdivide, grant a covenant, just as the public also has a bundle of rights, such as to tax, take for public use and regulate use (Farrier, 1995). These rights can be added or subtracted, thus changing the amount of benefits streaming from the rights. Recent trends have led to addition of public rights to include the right to air and water quality protection, to species conservation and preservation. What is perceived to be the accorded rights in regards to land-use may differ from one landholder to another and from one period to another. The bundle of rights to a suite of benefits from a given set of resources in Australia are controlled through private ownership, public open access, public closed access and state ownership as in many other democracies (Meyer, 2000).

Klapproth & Johnson (2001) note that landholders' fear of possible future introduction of regulations by government to restrict their use of buffer zones is a deterrent to the decision to enter into an agreement for their reservation. Attenuation of property rights by the State and avoidance of responsibility for maintenance of the conservation zone were other reasons mentioned by landholders as factors deterring their entry into an agreement to reserve the buffer zones. Farrier (1995) argues that compensation payments for the imposition of land-use restrictions are undesirable and instead incentives in form of stewardship payments should be given to landholders for positive land management that supports the conservation of biodiversity.

In formulating conservation mechanisms, account should be taken of the fact that farmers must also produce economic products, maintain farm profitability, meet their debt obligations and enjoy the rights of all other citizens. Brant (2000) asserts that success in

conservation on private land occurs when flexible incentives are based on socio-economic and political conditions of the targeted geographical area and the particular characteristic of farmers within the targeted area.

Property rights have relevance in social relationships beyond the more apparent relationship between people and property (Vira, 1995). Their definition and allocation, therefore, requires that they be considered in the broad social context in which they are to be applied (Cullet, 2000). This study investigates landholders' views about restrictions on land-use for nature conservation purposes – a perspective that is related to the concept of property rights. It is anticipated that landholders who dislike such restrictions on land-use have a lesser likelihood of taking up a permanent covenant than those that do not mind the restrictions.

1.3.3.10 Conservation ethic and stewardship

Environmental ethics are generally broad and more abstract than values as they apply to human-environment relationships (Manning et al., 1999). They deal more specifically with human conduct towards, or interaction with, the biophysical environment. The drivers and structure of this interaction and what constitutes the appropriate relationship, are issues dealt with in environmental ethics (Manning et al., 1999).

Environmental ethics have evolved from an ideology of dominion over nature to a more modern ecological concept of balance with nature embracing the wise use of its resources. Stewardship as a theme connotes peoples' entrustment with a duty to care for the earth and its resources in order to secure its continued provisions for the present and future generations and posterity. In the context of this discourse, the ethical landholder evaluates the impact of a decision regarding the maintenance of nature conservation with a long-term perspective, in relation to its benefits and costs.

For the purpose of this study, nature conservation ethic is addressed in the perspective of landholders' perceptions and attitudes to long-term nature conservation and the extent of the influence of the value they place on nature on the uptake of a permanent conservation covenant. There is evidence in Victoria that some landholders who have placed a permanent covenant with Trust for Nature are influenced to do so by a 'love' for nature rather than by economic gains (Whelan, 1996).

Many issues and decisions on nature conservation on private land cannot be addressed solely through technical expertise or science because they are linked to important values or ethical components which are in turn linked to the social environment, the economic environment, to perceptions and to knowledge of nature conservation (Bengston, 1994). These linkages must be taken into account in setting up nature conservation mechanisms.

How do you build a nature conservation ethic and stewardship in landholders and the public? Command and control measures cannot alone contribute much to their development (Bates, 2001). Furthermore, even when incentives are used, they may not be sufficient in quantity and quality to prompt the necessary input by landholders to satisfy the appropriate level of environmental stewardship (Bates, 2001). Linking duty of care with the concept of ecologically sustainable development or similar concept that landholders relate to, may stimulate their interest to carry out actions that go beyond the duty of care. This notion is based on the premise that humans behave rationally to safeguard what they view to be in their interest.

Some mechanisms aimed at encouraging a nature conservation ethic are in place in Victoria. The Community Custodianship program seeks to foster the understanding and involvement of the community in the conservation of biodiversity. Two particular schemes under the program are the Land for Wildlife Scheme (discussed earlier in this chapter) and the Botanic Guardian assist groups. The latter assist groups in the community to actively monitor and manage threatened species on public land.

It is hypothesized in the present study that landholders who have a strong conservation ethic demonstrated by, among other things, strong value and attachment to the natural environment, have a strong likelihood of taking up a permanent covenant. Understanding the factors that influence landholders' decisions to take up a permanent covenant is important in determining the policies and the incentives measures (monetary or non-monetary) that are necessary for motivating their participation.

1.3.4 Incentive measures for nature conservation

Article 11 of the Convention on Biological Diversity supports the use of incentives in nature conservation by calling on member countries to 'adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity'. The 'measures', according to de Klemm & Shine (1997) should include the removal of disincentives and provision of incentives to conserve biodiversity.

Incentives are arrangements that encourage desirable behaviour in contrast to use of penalties, which at best maintain the status quo or discourage conservation efforts (Yager, 1994). They can be direct or indirect and their use has the potential to increase conservation efforts and provide a broad scope for achieving environmental objectives in a more cost-effective way than the traditional regulatory mechanisms (Agriculture Western Australia, 1997). An annual provision of AUD $ 900,000 to the Remnant Vegetation Protection Scheme (RVPS), which expired in the year 2000, was a direct incentive by the State Government of Western Australia for nature conservation on private land to landowners (Agriculture Western Australia,

1997). This scheme is currently under review and is one of the conservation mechanisms under focus in this study.

Examples of economic incentives at a local government level include the Brisbane municipality's Voluntary Conservation Agreement (VCA): A partnership of the municipality with landowners. Under the agreement, a landowner nominates the conservation area on their property and the council provides the financial assistance for carrying out the required environmental activities(L. Ryan, 1998). A similar agreement, the 'Higher VCA', places a permanent covenant on the conservation area by rezoning the agreed area into the conservation zone under the local town-planning scheme. The council, in return, provides the landholder with free technical advice, on-ground management training and financial assistance of a maximum of 1500 dollars cash award or 30 percent annual general rates (L. Ryan, 1998).

More recently, there has been an increase in number of similar schemes at State and local government levels in most States and Territories in Australia. There is increasing literature and empirical research on the use of incentives as an alternative to regulatory measures for encouraging nature conservation on private land in Australia (e.g., Binning & Young, 1997; Binning, Young, & Cripps, 1999; Lockwood & Walpole, 1999c; Miles et al., 1998; Western Australia Municipal Association, 1998; Young et al., 1996). However, an evaluation of the role and actual impact of incentives in nature conservation on private land has not been carried out because their adoption is relatively recent to Australia compared to the United States and Europe.

Incentive policies can be monetary or non-monetary, although often a combination of the two is used to achieve the desired objectives such as the equitable sharing of the cost of conservation. Perverse incentives to nature conservation are measures aimed at encouraging particular sectoral goals or activities such as agricultural production, but in the process lead to unfavourable decisions regarding nature conservation. The State Land Tax (Western Australia) is an example of a perverse incentive to conservation of remnant vegetation. It denies tax exemptions for land under conservation while offering exemptions to land areas that are under tree plantation or used for primary production. It also fails to discriminate against agricultural land and non-agricultural that is solely dedicated to conservation by taxing them at the same rates. In essence, this situation is inequitable for landholders who leave their land under conservation.

Disincentives, on the other hand, are measures that discourage activities that support nature conservation. In Western Australia, significant areas of land that are used for nature conservation are subject to various taxes and charges which can cause landholders to make anti-conservation decisions such as subdivision, clearing by stealth or other attempts to reduce the economic penalties (Bradby, 1998). At the local government level, rate charges are levied on

conservation areas under bushland in several Shires and councils. Although there are signs that this is changing, there is need to identify the policy measures that are disincentives to nature conservation at state and local levels.

Designing of appropriate incentive measures for motivating desired conservation decisions requires the identification of disincentives and perverse incentives to nature conservation. The particular economic and non-economic incentives and the extent to which they influence or can influence the uptake of permanent covenants in Australia are not clearly established. One of the objectives of this study is to identify the barriers and the appropriate incentives for the uptake of permanent covenants among different categories of landholders.

1.3.4.1 Effective incentives policy measures

In policy formulation, economic instruments are often used in conjunction with regulatory measures to maximise their joint effect. O'Connor (1996) points out that flexibility of instrument design has the distinct advantage of creating "hybrid" instruments where the objective is to achieve a balance among competing objectives such as efficiency, effectiveness and equity.

Tisdell (1995) proposes several economic incentive measures that may enhance the conservation of biodiversity. Some of these include financial incentives for retention and conservation of natural areas, encouragement of non-consumptive use of the conserved living resources and concessionary funding for development projects outside nature reserves to enhance the income base of landowners and reduce economic pressure to exploit the nature reserve.

In countries where people are highly reactive to economic incentives, regulatory mechanisms can be complemented by economic incentives, thus facilitating quick, efficient and /or more cost efficient means to address environmental problems. For example, it has been recognized in central and eastern European states that if the rates of economic incentives are set high enough they can reduce the high use of natural resources (The Regional Environmental Center, 1998).

Compensation and substitution are other forms of incentives that can support conservation where there is a loss in economic value of a natural resource or an economic loss resulting from limitation of access to natural resources when a voluntary agreement is placed on it (Spergel, 1997). They can take the form of cash payments, goods or services and substitution, which involve the provision of alternative sources of resources whose access has been limited. The Natural Resources Adjustment Scheme (NRAS) is an example of such a compensatory incentive measure in Western Australia, which was introduced to protect remnant bushland by providing adjustment assistance to landholders who are disadvantaged by the restrictions on

land clearing. This type of economic incentive has the potential to reduce land clearing (K. Bradby, personal communication June 26, 1998).

Incentives for nature conservation have to be adequate in quantity and quality to guarantee a level of voluntary undertaking of the desired conservation actions. Yager (1994) points out that the type and level of incentive to use depend on a number of factors such as availability of funds in the case of monetary incentives and ease of application and administration of the incentives. They also depend significantly on the perception of the incentive recipient regarding nature conservation and its value, recipient's perceptions of opportunity costs linked to adoption of the desired conservation measures, the prospects of compensation for conserving nature for community welfare and their moral obligations/sense of stewardship. The transaction cost and administrative efficacy of disbursing the incentives are important considerations regarding conservation values.

There is disparity among landholders on what are adequate incentives. For example, in reference to fencing, Western Australia farmers found the limited financial cover for the cost of tree replanting and fencing of remnant vegetation and 100 percent tax deductions for landcare to be inadequate. Most farmers preferred improved financial compensation for time and materials spent on nature conservation, others preferred fencing grant schemes that offered the highest amount of funding, while others had no interest in fencing grant schemes, preferring to fund their own work (Jenkins, 1998). Elix & Lambert (1998) also found that most farmers were not interested in 'direct handouts' for conservation work but preferred opportunities for co-operative efforts with provision of government funds for conservation materials as the landholder provides the labour. In the cited examples, the participants were in unison about the essential role of financial incentives in motivating landholders to nature conservation.

Ikerd (1990) and Victorian Conservation Trust (Victorian Conservation Trust, 1994) point out that in situations where economic factors are a constraint on landholder behaviour, financial and other incentives are necessary to encourage adoption of innovation. Although subsidies have the potential to encourage biodiversity conservation on private land, Tisdell (1995, p.218) points out that their payout requires that several issues be addressed. Some of these issues include efforts to minimise the size of the implementing agency, transaction costs of delivering the subsidies, the integrity of those involved in the conservation process in ensuring compliance and an estimation of the subsidies required. Furthermore, payout of subsidies requires an efficient delivery mechanism- ensuring the subsidies target those that are effective in ensuring conservation and guards against possible blackmail by landholders to extract maximum surplus from those willing to pay the subsidy.

Klapproth and Johnson (2001) found that financial cost-share was a significant factor in motivating the adoption of conservation practices among some landholders and not others.

Among those that were not motivated by cost-share incentives, Bell, Roberts, English, & Park (1994) note that their attitude toward the goal of the program, rather than the availability of the cost-share itself and probably irrespective of the amount of cost-share offered, was responsible for their decision. Other findings in the United States show that landholders' decisions toward adoption of conservation practice were sensitive to the amount of cost-share offered, with offers below a certain amount failing to provide the desired motivation for adoption of the practice (Klapproth & Johnson, 2001).

1.3.4.2 Non-economic incentives

Contrary to conventional wisdom regarding farmer's resistance to the adoption of practices that have economic cost-bearing, studies in the US (Alonge & Martin, 1995; Korsching & Malia, 1991) show that landholders are prepared to try out the prescribed conservation practice if there was some form of non-monetary incentive. The extent of the influence of non-monetary incentives, as with monetary incentives on landholders' uptake of permanent covenant, is not well understood.

Information and education programmes are forms of non-monetary incentives often used in nature conservation. Binning & Young (1997) note that landholders often do not conserve vegetation due to lack of information on its benefits and significance and because of lack of knowledge of appropriate management actions for effective conservation. Yager (1994) suggests that social recognition showing appreciation for conservation efforts would be a suitable non-monetary (non-economic) incentive. Recognition of this kind may include prime ministerial or other federal government awards of honour. However, incentives of this type are effective when social recognition attached to such awards is more highly valued than monetary gain (Yager, 1994).

Jenkins (1998) found that some landholders are self-motivated towards nature conservation on their land even in the absence of monetary incentives. Furthermore, some farmers viewed a visit from a technical person to help to prepare a conservation management plan and provision of information on conservation management, constituted a conservation incentive. Elix & Lambert (1998) found that the type and administrative arrangements for conservation agreements were critical in the decision of landholders regarding their participation; transparency in the priority setting process and consultation with landholders were viewed as significant motivation for participation.

Jenkins (1998) points out the need for further studies on a wider range of monetary and non-monetary incentive measures for nature conservation and private land. This study aims to identify current and potential measures by state and local governments and actions by covenant agencies that act as incentives for encouraging the uptake of permanent covenants.

This section has provided a theoretical framework of the factors that are likely to influence landholders' uptake of a permanent covenant and an overview of current and potential incentive measures for nature conservation on private land.

1.3.5 Policy framework for nature conservation on private land in Australia

Under the Australian Constitution, States have the primary responsibility for public land management except over Commonwealth land (Environment Australia, 2001). They also have power over land management when privately owned in so far as to protect the public from any harm arising from its management. The policy and legislative framework that deals with nature conservation on private land in Australia is contained in various documents at different levels of government. It also differs in comprehensiveness between States and in addressing the major issues of concern in respect to nature conservation on private land.

Vanclay & Lawrence (1995) assert that failure of adoption of environmental conservation practices cannot wholly be blamed on farmers' negative attitudes towards land ethics; it is also due to the government's short political timeframe that often fails to adequately recognise and effectively address the complexities of land degradation in policy interventions.

Various pieces of legislation have been enacted at Federal and State government levels in Australia to address nature conservation on private land and focussing on voluntary actions. Most of these legislations such as the Environment Protection and Biodiversity Conservation Act (1999) are underpinned by both financial incentives and regulation. However, the effectiveness of existing policy instruments at different levels of government in promoting nature conservation on private land, particularly through the management agreements has not been fully evaluated.

An overall review of the policy and legislation and their effect on conservation of biodiversity in Australia is provided by Bates (2001). He cites weaknesses in the existing legislation in covering biodiversity conservation, in particular their lack of requirement of the implementing authorities to take into account biodiversity conservation in their activities, uncertainty in application and inefficiency in approach of the legislation with decentralised responsibility for biodiversity protection. He further points out that even legislation that is enacted specifically to protect biodiversity lends inadequate support, often with no guidelines on how to relate and weigh conservation values of biodiversity against economic and social imperatives (Bates, 2001).

In view of noted inadequacies in policy instruments to address nature conservation on private land, one of objectives of this study is to establish the views of landholders on the necessary policy instruments by State and Local governments for motivating the uptake of

permanent covenants. The overall aim is to gather information to aid in the development of appropriate policy interventions for nature conservation on private land in Australia.

1.3.6 Conclusion

Different forms of management agreements have been designed to enlist greater participation of private landholders in nature conservation. Restrictive covenants in particular are gaining wide acceptance by governments in Australia, though their promotion has been met with apprehension by a cross-section of landholders. The effectiveness of each mechanism depends on its design and acceptance by a wide cross-section of landholders. Adoption of nature conservation mechanisms is likely to be influenced by a suite of factors, which are very similar to those that influence the adoption of new agricultural innovations and technologies. Government policies can contribute significantly to the attitude of private landholders regarding conservation of nature.

The prediction of the factors that are likely to influence the decision of landholders in the uptake of permanent covenants is based on several social, management and economic theories covering decision-making, motivation, property rights, equity and behaviour. Understanding the likely response of landholders to environmental, social and economic policy measures in their decisions regarding the uptake of particular conservation mechanisms can aid in the designing of appropriate nature conservation mechanisms.

Knowledge and awareness of the conservation mechanism undoubtedly are likely to determine the ease of adoption of permanent covenants. The relevance and compatibility of the covenant mechanisms with the goals of the landholders have the potential to influence adoption rate especially when there is wide disparity between the demands of the mechanism and the goals of the landholders. Economic factors including economic incentives can restrain or motivate conservation outcomes on private land. Identifying the economic factors that motivate and those that constrain appropriate landholder behaviour towards nature conservation can aid in the designing of effective nature conservation mechanisms.

Other factors that have been considered in this thesis as likely to influence the decision of landholders in the uptake of restrictive permanent covenants are the strength of conservation ethic of the individual landholder and the perceived risks and benefits of the covenant uptake. Other likely factors include landholders' perceptions on equitability in the appropriation of costs and benefits between the landholder and the public and their perceived changes to the security of land tenure attributed to the uptake of the conservation covenant.

O'Connor (1996) points out that the implementation of environmental policy (or other nature conservation measures) may be difficult or impossible when there is a deficiency in

instrument design. Furthermore, difficulties in implementation can occur when the instrument requires sophisticated technical capabilities due to its complexity, particularly when an instrument design fails to recognize the social and political dimensions of successful implementation, or where the legal and institutional framework is weak, or it cannot be supported economically. Various forms of incentive measures have been used successfully to encourage the adoption of agricultural and conservation technologies. Similar incentive measures may be appropriated to motivate the uptake of permanent covenant by private landholders.

The chapter that follows details the methods employed in the present study to collect and analyse data and information from landholders.

CHAPTER 2

Study Method

The aim of this chapter is to provide a detailed overview and justification of the methods employed in the collection and analysis of the data and information on landholders who participated in this study.

2.1 Introduction

This study intends to establish the factors that influenced, and those that are likely to influence, the decision of landholders on the uptake of permanent covenants. It is exploratory and aims to answer questions formulated through the survey of relevant literature and theories on adoption of conservation practices and innovations on private lands, which are articulated in Chapter 1.

The primary information gathered in the study relates to perceptions, attitudes and views of individual landholders. An acknowledgement is made that landholders' decision-making processes are complex and an inference made is that a combination of several factors under study are responsible for the decision of landholders on the uptake of a permanent covenant. Because there are no external criteria for assessing perceptions and attitudes, the study lent itself to a survey research method as the principal source of primary data, as described by Tull and Hawkins (1983).

2.2 Description of Survey Design

2.2.1 Selection of study sites and sampling method

The areas of study were the States of Western Australia and Victoria. The choice of Victoria for the study was because of its long experience (since 1986) and recorded success (over 300 covenants) with the implementation of its covenant program. Furthermore, it has also served as a set-up model for covenant programs by agencies in other Australian States and Territories. Western Australia was selected for the study for the following reasons:

- the State had little experience with the use of permanent covenants in nature conservation at the commencement of this study;
- there was a State government commitment to encourage the use of management agreements to support nature conservation on private land;
- two covenant programmes based on Trust for Nature's (Victoria) covenant program had already been initiated;
- in addition, the researcher had an interest in the State because of its proximity to his permanent residence.

2.2.2 Sampling groups, frames and processes

Sampling groups in both Victoria and Western Australia included the following: landholders with a permanent covenant on their properties (Pcov), landholders without a fixed-term management agreement or a fixed-term covenant (Fcov) and landholders with neither a fixed-term nor a permanent covenant on their land (Nocov).

The sampling unit was the private landholding. The head of the landholding or the principal decision maker of major landholding operations was designated as the respondent.

Table 2.1 depicts the categories of landholders selected from information databases of landholders in both States. In Western Australia, two categories of landholders were selected: those with a fixed-term covenant and those without any form of a conservation agreement or covenant. Landholders with a permanent covenant were omitted in Western Australia because their total number at the time of conducting the research was small (<30) and therefore inadequate for an optimally set target of 150 landholders for the purpose of the study.

Table 2.1 Categories of landholders selected and databases used, for the study in Victoria and Western Australia

	Permanent covenant	Fixed-term covenant	Non-holders of covenant or agreement
Victoria	Trust for nature covenant list	Land for Wildlife Scheme	Victorian Farm Tree and Landcare Association
Western Australia	X	Remnant Vegetation Protection Scheme	Agricultural Properties and Clients list

Key: 'X' depicts category not included in the study

Collection of data from all categories of landholders in the survey was carried out in two stages: a questionnaire piloting stage and a main survey stages. A small sample of landholders (<40) from each category was selected to participate in the former stage and a much larger sample (> 100) selected to participated in the later stage.

A list of private landholders without any form of a conservation agreement or covenant in Western Australia was drawn from the Agricultural Properties and Clients (AGPaC) database held by The Department of Agriculture (Western Australia). The database lists information on a population of 14,000 private agricultural landholdings in Western Australia. This database has been used successfully by Coates (1987) and Jenkins (1998) to sample landholders in a study of farmers' attitudes to native vegetation. In the present study a sample of 515 landholdings listed in the database that contain some form of nature conservation features were selected using a random non-replacement method. The aim of sampling was to achieve a sample of landholders who had a likelihood of having significant

nature conservation areas and to ensure that only landholders who did not have any form of covenant or agreement were included in the designated category.

Because the AGPaC database did not contain information to confirm whether the randomly sampled landholders had a fixed-term covenant, a comparison of the sample was made with a full list of landholders on the Remnant Vegetation Protection Scheme (RVPS) fixed-term covenant database held by Agriculture (Western Australia). Twelve properties were confirmed to have a fixed-term covenant and were therefore excluded from the category, leaving a sample of 503 landholders. From the sample of 503 landholders, forty landholders were randomly selected to participate in the questionnaire pilot testing. Another 450 were selected at random from the remaining sample for inclusion in the main survey.

The Remnant Vegetation Protection Scheme database of landholders held by Agriculture (Western Australia) was the sampling frame to select landholders with a fixed-term covenant. The Remnant Vegetation Protection Scheme (RVPS) is a component of the Western Australian State Landcare Program implemented under the Conservation and Land Management Act of 1984 (Agriculture Western Australia, 1997). It was designed to assist landholders to protect and enhance remnant vegetation on private land by providing fencing subsidies with a provision for landholders to enter a covenant in perpetuity (Permanent Covenant). At the time of taking the sample, the scheme had 1150 registered landholders with a fixed-term covenant.

Four hundred and ninety landholders were selected from the RVPS database by a random non-replacement method. Of these, the first 40 landholders were selected to participate in the pilot testing of the questionnaire and the rest (450 landholders) were retained to participate in the main study.

In Victoria, 529 landholders without any form of a covenant were selected by a random non-replacement method from the Victorian Farm Tree and Landcare Association (VFTLA) database held by the Victorian Farmers Federation. The database contains information on 10,172 landholders and their properties. VFTLA is an umbrella organisation of 475 landcare groups with a focus on conservation and landcare issues. The database was chosen as the sampling frame because it contains a list of individuals that were likely to have the required set of data of landholders with valuable nature conservation features on their property. This was suspected by virtue of their membership to the Association.

A list of the 515 landholders was sent to Trust for Nature Victoria and Land for Wildlife (Victoria) to confirm if any of the properties had a permanent covenant or a fixed-term covenant, respectively. It was confirmed that 25 landholders had at least one of the two conservation agreements. These were therefore removed from the sample leaving 490 landholders. The first 30 landholders were selected to participate in the pilot testing of a

questionnaire targeted at landholders without any form of agreement or covenant and the remaining 460 landholders were selected to participate in the main study.

A sample of landholders with a voluntary non-binding fixed-term agreement on their land in Victoria was taken from a database of landholders in the Land of Wildlife Scheme, which is held by the Department of Natural Resources and Environment (Victoria). The advantage of the database as a sampling frame is it contained a large number of landholders (4600) that have a voluntary agreement for nature conservation, of which 107 also had a permanent covenant and therefore were not included in the sampling frame. A random non-replacement sample of 490 landholders to participate in the study was taken from a list of 4493 landholders who only had a fixed-term Land for Wildlife agreement. The first 40 landholders in the sample were selected to participate in the pilot testing of a questionnaire targeted at landholders with a fixed-term agreement in Victoria, while the remaining 450 were selected to participate in the main survey.

The Trust for Nature database of permanent covenant holders was the sampling frame of landholders with a permanent covenant. The database contained 406 landholders (616 properties) with a registered or approved covenant by the Trust for Nature's Board of Trustee at the time of total sampling. Three hundred and seventy six landholders (comprising all landholders) were selected to participate in the main study while 30 were selected to participate in a pilot testing of the questionnaire targeting landholders with a permanent covenant.

2.3 The Survey Instruments and Method

Self-administered questionnaire survey instruments dispatched by post were employed to gather the required information. They are less time consuming and cheaper than face-to-face interviews yet have the ability to provide a relatively high number of responses within the constraints of time and available financial resources. This is evident from successes of their use to collect information from landowners (eg., Elix & Lambert, 1998; Jenkins, 1998; Reeve & Black, 1998).

2.3.1 Questionnaire Development and Data Collection

Three similar questionnaire instruments were designed and each modified to cater for the three distinct groups of landholders in both States (see appendices 2.4 to 2.6). The development of the questionnaire instruments was done referring to information from similar and relevant studies (eg., Jenkins, 1998; Reeve & Black, 1998).

The instruments contained a number of statements, structured to measure the degree of respondents' different perceptions and attitudes to nature conservation and reasons for the uptake or likelihood of uptake of a permanent covenant. Respondents were asked to state their level of agreement or disagreement and in some cases the level of importance that they attached to a noted issue. The response to the statement "I would not consider a permanent covenant under any circumstance" was assigned the dependent variable as a measure of landholders' attitudes to the uptake of a permanent covenant and as a proxy measure of landholders' likelihood of taking up a permanent covenant. Landholders that agreed with the statement were reckoned less likely to have a positive attitude to permanent covenant and in turn reckoned to have a lesser likelihood of taking up a permanent covenant than those that disagreed with the statement.

Selection of the independent variables to assess in the study was based on observations in literature of their positive relationship with adoption of agricultural conservation practices and technologies and retention of remnant vegetation on private land, as discussed in Chapter 1. The selected independent variables included:

1. age of landholder;
2. duration of family ownership of the property;
3. land-use types on the property;
4. ratio of conservation area to total area of the property;
5. landholders' long-term goals for the property;
6. familiarity with and awareness of permanent covenant;
7. association with conservation groups or organisations;
8. influence of neighbours or friends on the uptake of a permanent covenant;
9. perception and attitudes to long-term nature conservation;
10. Perceptions and attitudes to permanent covenants in terms of their impact on land value;
11. perceptions and attitudes to permanent covenants in terms of their perceived benefits;
12. perceptions and attitudes to covenants in terms of their effectiveness for long-term nature conservation and effectiveness over other mechanisms;
13. perceptions and attitudes to permanent covenants in terms of their necessity for long-term conservation of nature in private land;

14. perceptions and attitudes to covenants in terms of their restrictions on land-use;
15. primary motivation for having retained nature conservation features on the property;
16. labour commitment on the property;
17. ratio of income from property to total income;
18. level of financial debt on the property;
19. views on equity considerations as incentives to permanent covenant uptake;
20. views on the pre-requisites and incentives for a permanent covenant uptake;

Relationships between the dependent variable and the twenty independent variables were assessed to establish the factors that were likely to influence the decision of landholders to the uptake of permanent covenants.

In addition to an introduction to the study contained in the front page of the questionnaires, a more detailed introduction to the study and its purpose was given in a letter that accompanied the dispatched questionnaires (see appendices 2.2).

Both qualitative and quantitative data were gathered in the survey. A structured pre-specified set of relatively direct questions (the stimulus) was used in the questionnaire to elicit information from the respondents. Elicitation of both open and closed responses was used according with the type of information required. Although it is cheaper and easier to process closed responses, Lansing (1971) notes that they present a greater risk of persistent misinterpretation of meaning. Closed questions were used in form of simple dichotomies (yes-no responses) and multiple choices.

In eliciting information of personal nature such as age and income, explanation of why a particular piece of information is required was provided. In addition, care was taken to avoid biased words that could suggest certain feelings, and leading questions exposing the researcher's point of views.

A Likert Scale, commonly used as the measurement technique in questionnaire surveys, was employed in the study using a five point attitudinal measure, namely Strongly agree - Agree – Uncertain – Disagree - Strongly disagree, in the questionnaire to elicit landholders' attitudinal rating. Depending on the question posed, the assumption was made that the higher the rating that each respondent scored, the more positive or negative their attitude was to an aspect of a permanent covenant under study.

Similarly, a five point Likert scale employing the levels of importance namely Definitely not important - Probably not important - Neutral - Probably important - Definitely important,

was used to measure the perception and degree of importance they attach to given issues in considering a decision to take up a covenant. A higher rating indicated a greater importance attached to the issue under consideration. Several studies (eg. Manning et al., 1999; Rittierfeld & Cupchik, 1996) used similar scaling methods to determine respondents' perception of various environmental issues. In Western Australia, Coates (1987) and Jenkins (1998) used a questionnaire with Likert-scale measurement of farmers' attitudes to native vegetation. Vanclay (cited in Vanclay & Lawrence, 1995, p.77) used five attitude scales using a five point Likert scale (1= strongly disagree; 5= strongly agree) to measure different aspects of attitudes to the environment, each of which was averaged and used to calculate the final attitudinal score. Priestly and Evans (1996) used a 5-point response format to probe respondents' perception of the effect of transmission line on their property value.

The questionnaire design also allocated space for respondents to add any other information and to raise issues that might not have been covered in the survey but which they viewed to be relevant to the study. In addition, an assurance of confidentiality of the information that they provided was clearly given to the respondents in the cover letter and on the front page of the questionnaire.

2.3.2 Ethical considerations

The questionnaire as the principal source of information in this study was administered as part of a university research project and unconnected with any political, industrial or commercial organisation (e.g., Eiser, Reicher, & Podpadec, 1993). The purpose of the study was clearly spelt out in a cover letter sent out with the questionnaire instrument (Appendix 1). A statement of assurance of confidentiality for the information provided by the respondents and a clarification that participation in the survey was voluntary was made clear on the first page of the questionnaire (Appendices 2-4). Approval to conduct the study was sought from, and granted by, Edith Cowan University's Human Research Ethics Committee (HREC) before the survey was conducted.

2.4 Questionnaire Pilot testing Stage

2.4.1 Aims and Objectives

Questionnaire pilot testing is an important step in instrument development and helps to pre-empt failures in otherwise well conceptualised surveys (Warwick & Lininger, 1975). It serves as a useful check on the reliability and validity of the data. Warwick & Lininger (1975, p.145) point out that "the purpose of a pilot test is to evaluate the questionnaire items by

reviewing the adequacy of the sampling instructions, ...likelihood of controversy arising from the survey, rate of refusals and the overall appropriateness of the survey method to the problem at hand". Furthermore, they suggest that a sample of 20-50 interviews should be used in the pilot test.

In following Warwick and Lininger (1975), the aims of this pilot test were to sharpen the focus of the questionnaire items, to ensure the meaning of items, to structure certain responses and to eliminate questions later viewed to duplicate the responses to other questions or to offer inadequate responses for meeting the objectives of the study.

Assessment and analysis of the questionnaire items were targeted to meet the following objectives:

(a) to establish the expected response rates to the questionnaires;

(b) to establish if the respondent understands what the survey is about;

(c) to establish whether the wording of the items is clear;

(d) to establish whether the respondents draw the same meaning from the questions as intended;

(e) to establish whether the answers obtained from the respondent are adequate for the purpose of the study;

(f) to establish whether significant details are provided in the answers to questions;

(g) to establish whether the items are synchronised between the different categories of the questionnaire;

The designed questionnaires were tested on a sample of landholders from the three population categories.

Random samples of landholders from different landholder categories described earlier were used in the Pilot test of the questionnaire. The relevant test questionnaire for each landholder category and a covering letter explaining the objectives of the study were mailed to each of the selected landholders. The mail dispatch was carried out with the assistance of the government departments or agencies holding the database. In addition to explaining the objectives of the study, the covering letter requested that the landholder identify any questionnaire items that were unclear and to comment on the ease of or difficulties encountered in, responding to the questionnaire items. A replied-paid self-addressed envelope to each landholder was enclosed.

2.4.2 Process and findings of Pilot test survey

Table 2.2 shows the return rates from the pilot surveys. These return rates were used to predict the expected return rates of the main survey. They were also used to determine the level of sampling required in order to achieve the target number of responses in the main study. The overall questionnaire return rate of 36.3 percent in Victoria was in line with the expected return rates of the first mail surveys before a reminder sent to non-respondents. Low overall return rate of 14.4 percent in Western Australia was the result of a very low return rate from the group of landholders without any form of covenant or agreement.

Table 2. 2 Return rates from the pilot testing of questionnaires on respondents in Victoria and Western Australia.

Questionnaires	Western Australia			Victoria		
Landholder Agreement Categories	Dispatched	Received	Return rate	Dispatched	Received	Return rate
No Covenant	40	4	10%	40	12	30%
Fixed-term Covenant	40	14	31%	40	10	25%
Permanent Covenant				30	11	37%
Totals	80	18	14.4 %	110	33	36.3%

The low response rate among landholders with a fixed-term covenant in Western Australia in contrast to other landholder categories was attributed to lack of a personalised letter of introduction from the institution with which the landholders were familiar, which accompanied other questionnaires. Following this deduction, a decision was reached that questionnaires in the main survey would be accompanied by a personalised covering letter from the institution that held the landholder information database.

The overall percentage of non-response to questionnaire items was low. The three open-ended questions located at the end of the questionnaire and questions that inquired about personal financial information particularly debt and income levels had a higher non-response rate. The problems were addressed by writing a more persuasive explanation of why the information was necessary and by making a statement of assurance of confidentiality clearer and in more observable bold print than before.

The data gathered in the pilot test stage were reviewed to determine the necessary changes to the questionnaire items for the main survey. A visual verification was carried out to establish that all questions had been answered and that the instructions for answering the questions had been followed. The aim was to establish the proportion of incomplete questionnaires (with missing responses to more than five items) and items that were not answered according to the instructions provided, as well as the proportion of questionnaire instruments in which this occurred.

Numerical format codes for closed response categories had earlier been established and a coding key formed at the time of formulating the questionnaire. The codes for the responses to each item were entered into a Microsoft Excel spreadsheet and notes of all comments received from the respondents on the questionnaire instrument were made in order to facilitate changes to the questionnaire.

Where more than 15 percent similar responses occurred in the general category 'others' for any given item (this is the expected number of respondents in a distribution of responses in an item with an average of six categories), new categories and codes were assigned. A frequency distribution of each variable in the study (represented by an item (question)) was carried out in order to identify anomalies in the dataset such as wrongly coded items, the number of questionnaires with incomplete responses, the type and percentage of each questionnaire item without a response, the number of completed questionnaires and the percentage total questionnaire responses. Frequency distributions also enabled a visual test of the normality of the dataset.

An assessment of missing data was particularly important for verifying the availability of sufficient data for creating expected new variables from the combination of two or more variables in the data set. An example of a new variable formed from a combination of variables is the ratio of conservation area to total property size.

The findings of the frequency distribution and the analysis of the respondents' comments on the questionnaire were used to rephrase questions, to reduce the number of questions, or to reorder the questionnaire items.

Respondents did not have difficulties in comprehending the questions. However, the reviewer felt the need to change the structure of several questions in order to avoid possible multiple interpretations. In other cases, a review of the selection categories for closed questions was necessary in order to include all possible responses that were provided by respondents in the 'others' category.

After incorporating the necessary changes to the questionnaire based on the analysis of data and information, further input was provided by a staff panel at Edith Cowan University and by a panel of officers from the National Trust of Australia (Western Australia). The Department of Conservation and Land Management (CALM) and the Department of Agriculture (Western Australia) also made input. The aim of the input was to refine the questionnaire design.

Changes were made to the final questionnaires in response to the stated objectives of the Pilot test survey (Refer to Appendix 2.1). The main changes included additional categories, rephrasing of questions where landholders indicated they did not understand the meaning or

where questions reflected a meaning other than the one that was envisaged. The format of the questionnaire was also changed and the questions rearranged in order increase readability and continuity of ideas in answering the questions.

2.4.3 Main Survey

A sampling intensity of 150 respondents for all landholder categories except landholders with a permanent covenant was arrived at using a confidence level of 95 percent and a confidence interval of eight percent. In addition, based on the average return rate of the pilot study, sample sizes ranging from 338 to 464 landholders were taken in order to achieve the required 150 respondents per landholder category in each State.

Table 2.2 shows the response rates of the different categories of landholders who participated in the study.

Table 2. 3 Response rates of different categories on respondents in the main study for Victoria and Western Australia.

Questionnaires	Western Australia				Victoria			
Landholder Agreement Categories	Valid Dispatches	Received	Useable	Return rate*1	Valid Dispatches	Received	Useable	Return rate
No Covenant	338	130	114	38.5%	464	153	144	32.9%
Fixed-term Covenant	450	155	153	34.4%	433	210	194	50.8%
Permanent Covenant	Not applicable		Not applicable		373	220	187	59%
Totals	788	285	267		1270	583	525	

*1 Return rate is calculated as the ratio of received questionnaires to validly dispatched questionnaire

Overall, 1270 and 788 questionnaires were sent out effectively (valid dispatches) in the main survey to landholders in Victoria and Western Australia respectively between March and April 2000. This period was considered appropriate as farm activities are often reduced following sowing of the fields. A reminder letter was enclosed with a copy of the questionnaire and sent out to addressees that had not returned the first copy after 2 months. The target of the sampling was to achieve 150 completed questionnaires in each landholder category from each of the two States.

Following the first mail-out, 150 completed questionnaires were received from Fixed-term covenant holders in Western Australia but only 87 were received from landholders without any form of covenant or agreement in Western Australia. The reminder to the latter group resulted in an increase in the overall return to 114 completed questionnaires (see Table 2.3). In Victoria, a return rate of 32.9 percent (153 responses) from landholders without a covenant or agreement on their property was achieved with only one mail-out. Fifty-one percent (210 responses) and 59 percent (220 responses) return rates were achieved after a

reminder from landholders with a fixed-term covenant and permanent covenant holders, respectively.

The returned questionnaires were entered into the Excel spreadsheet on a desktop computer. This was followed by data control- a validation process, which involved a detailed assessment of the returned questionnaires for missing data. Data editing was carried out to ensure that the requested data were present and accurate before further coding could commence (Tull & Hawkins, 1983). Where more than five percent of the items were missing, the questionnaire was discarded. Less than five percent of any landholder category questionnaires were discarded in the process.

The data and information derived from the questionnaire were transferred to SPSS data analysis software on the desktop computer. A reduction of data was carried out by generating new variables, such as the ratio of conservation area to total property size, level of knowledge about a permanent covenant, ratio of income from the property to the total income of the landholder and calculation of summary statistics.

Questionnaire items used to measure different variables in the study

The questionnaire items (extracted from Appendices 2.4, 2.5, and 2.6) that were used to answer the different questions and to construct or represent the variables used in the study are described:

(a) Perceptions of covenant benefits

(Statement). I would NOT have placed a permanent covenant on the conservation areas of my land if I were convinced that altering them for agricultural production would bring greater economic returns than they currently do. *(For landholders with a permanent covenant)*

(Statement). The benefits of a permanent covenant on my land are NOT apparent to me *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

(b) Necessity for long-term nature conservation on their land

(Question). How much did the following stated reasons (a-f) influence your decision to place a permanent covenant on your land? (f) Concerned about a likelihood of the conservation areas being altered by future owners or managers of this land *(For landholders with a permanent covenant)*

(Statement) The nature conservation features on my land will be conserved by the management that will take over from me even WITHOUT placing a voluntary permanent covenant on it *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

[c] Impact on land value

(Question) To what extent did the following concerns influence the size of the conservation area on which you placed a permanent covenant? (a) Concerned about a possible lose in market value of my property because of entering a permanent covenant on my land. *(For landholders with a permanent covenant)*

(Statement) Placing a permanent covenant on my land would most likely cause it to lose in market value *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

[d] Compatibility with long-term objectives of the land

(Statement). Before I placed a permanent covenant on my land, I anticipated retaining ownership of my property in the family in the future. *(For landholders with a permanent covenant)*

(Statement) Before I placed a permanent covenant on my land, I anticipated retaining the management of my property within the family in the future. *(For landholders with a permanent covenant)*

(Statement) I plan to retain ownership of my property within the family in the future *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

(Statement) I plan to retain the management of my property within the family in the future *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

[e] Effectiveness over other mechanisms

(Question) How much did the following stated reasons (a-f) influence your decision to place a permanent covenant on your land? (a). Convinced there were no other equally effective mechanisms than permanent covenants for promoting the long-term nature conservation on private lands *(For landholders with a permanent covenant)*

(Statement) There are more effective mechanisms than voluntary permanent covenants for promoting the long-term nature conservation on private *lands (For landholders without any agreement, and those with a fixed term agreement or covenant)*

[f] Landholders' attitudes to long-term nature conservation

(Question) Before you entered a voluntary permanent covenant on your land, how important were the following issues in determining your decision to place a permanent covenant on your land? Whether a permanent covenant would give greater assurance for long-term nature conservation than under the other conservation agreements. *(For landholders with a permanent covenant).*

(Question) What importance would you give to each of the following issues in deciding whether to enter a voluntary permanent covenant on your land? Whether a permanent covenant will assure the long-term nature conservation. *(For landholders without any agreement, and those with a fixed term agreement or covenant).*

[g] Total area of property

Question 1. What is the total area of your property in hectares? *(For all categories of landholders)*

Question 2. How many hectares of your property are under a permanent conservation covenant? *(For all categories of landholders)*

Question 3. What size of your property (NOT leased land) do other natural features occupy? *(For all categories of landholders)*

Question 4. What size of your property do the nature conservation features on your property occupy? *(All categories of landholders)*

(NB. In calculating the percentage ratio of total area under conservation to total area of the property for landholders with a permanent covenant, the sum of Question 2 and Question 3 was divided by Question 1, and the ratio expressed as a percentage thereafter).Similarly, in calculating the percentage ratio of total area under conservation to total area of the property for other landholder categories Question 4 was divided by Question 1 and expressed as a percentage thereafter.

[h] Age of respondent

(Question) In what year were you born? *(For all landholder categories).*

[i] Duration of property in the family

(Question) How long has this property been in your family? *(For all landholder categories).*

[j] Primary and secondary reasons for having retained conservation features on property

(Question) Which of the following statements below (labelled a-m) best describe your one primary reason for having retained the present conservation areas on your property BEFORE you placed a permanent covenant? *(For landholders with a permanent covenant)*

(Question) Which of the following statements below (labelled a-m) best describe your primary reason for having retained these conservation areas of your property to date? (Please indicate one primary reason by writing (1) in the box next to the statement *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

[k] Farm type

(Question) What type of farm do you manage? *(For all landholder categories).*

[l] Knowledge and awareness about permanent covenant

(Statement) I have NEVER heard about a permanent covenant for nature conservation before now. (*For landholders without any agreement, and those with a fixed term agreement or covenant)*

(Statement) I am familiar with the available permanent covenant programs for nature conservation in the State. (*For landholders without any agreement, and those with a fixed term agreement or covenant)*

(Statement) I am familiar with the process of entering a permanent covenant programs for nature conservation on my land. (*For landholders without any agreement, and those with a fixed term agreement or covenant)*

[m] Relationship between landholders' economic dependence on the property and their uptake or likely uptake of a covenant?

Question 1. Which of the following categories best describes your approximate total income before taxes, derived from sources OUTSIDE your property in the year you placed a permanent covenant on your land? *(For landholders with a permanent covenant)*

Question 2. Which of the following categories best describes your approximate total income before taxes, derived from your property (including leased areas) in the year you placed a permanent covenant on your land? *(For landholders with a permanent covenant)*

Question 1. Which of the following categories best describe your approximate gross income before taxes, derived from sources OUTSIDE your property in 1999? (*For landholders without any agreement, and those with a fixed term agreement or covenant)*

Question 2. Which of the following categories best describe your approximate gross income, before taxes, derived from your property (including leased areas) in 1999? *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

(NB. Measurement variable i.e., the ratio of landholder income from property to total income, was calculated by dividing the median of the range in which the landholder's income from the property (Question 2) lies to sum of median of external income (Question 1) and median of income from the property (Question 2) for each landholder category.

The average of the median income was allocated to missing income values or in cases where the respondent withheld the income information.

[n] Influence of friends/neighbours and conservation group affiliations on landholders' uptake or likely uptake of a permanent covenant

(Question). How much did the following stated reasons (a-f) influence your decision to place a permanent covenant on your land? The presence of neighbours or friends having a permanent covenant on similar nature conservation areas as mine *(For landholders with a permanent covenant).*

(Statement) I would be inclined to enter a permanent nature conservation covenant on my land if neighbouring landholders or friends with similar natural areas had permanent covenant on theirs. *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

[o] Membership to a nature conservation group/organisation

(Question). In the period before you placed a permanent covenant on your land, were you a member or did you support any of the following or other nature conservation groups/organisations? *(For landholders with a permanent covenant)*

(Question). Are you a member or do you support any of the following or other nature conservation groups/organisations? *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

[p] Is there a relationship between landholders' socio-economic disposition and their uptake or likely uptake of a covenant?

(Question). Which of the following categories best describes your approximate gross income before taxes, derived from sources OUTSIDE your property in 1999? *(For landholders without any agreement, and those with a fixed term agreement or covenant)*

(Question). Which of the following categories best describes your approximate gross income, before taxes, derived from your property (including leased areas) in 1999? *(For landholders without any agreement, and those with a fixed term agreement or covenant).*

[q] Debt on property

(Question). How much debt did you have on your property at the time you placed a permanent covenant on it? (*For landholders with a permanent covenant*)

(Question). In which of the following categories does the debt amount fall? (*For landholders without any agreement, and those with a fixed term agreement or covenant*)

[r] Attitude towards the uptake of permanent covenant

(Statement). I would not consider a permanent covenant under any circumstance. (*For landholders without any agreement, and those with a fixed term agreement or covenant*)

(Question). Before you placed a permanent covenant on your land, did you have any other conservation agreement or a fixed term covenant on it? *(For landholders with a permanent covenant).*

[s] Are there variables that can be used as indicators for monitoring change in landholder attitudes to covenant uptake?

NB. This was answered by determining the existence of significant relationships between independent variables in the study and the dependent variable that can be identified and measured to give an indication of change in attitude to covenant uptake among landholders without any agreement and those with a fixed term agreement or covenant.

[t] Incentives measures for motivating the uptake of permanent covenants on private lands

(Question) Before you entered a voluntary permanent covenant on your land, how important were the following issues (a-e) in determining your decision to place a permanent covenant on your land? (Use the following scale 1-6 below to make your rating). (a) whether I would receive long term management advice, (b) Whether there would be increased public recognition and appreciation of the conservation values on my land, (d)Whether by entering a permanent covenant I would receive some ongoing financial support to carry out the necessary conservation work. *(For landholders with a permanent covenant).*

(Statement) Non-financial recognition by State and Local government of my efforts to conserve nature would be a significant step in motivating me to enter a covenant on my land *(For landholders without any agreement, and those with a fixed term agreement or covenant).*

(Question). What importance would you give to the following issues deciding whether to enter a permanent covenant?) (a) Whether I would receive long-term management advice on conservation. (b) Whether there would be increased public recognition and appreciation of conservation values on my land. (c) Whether by entering a permanent covenant I would receive some on-going financial support to carry out the necessary conservation work. *(For landholders without any agreement, and those with a fixed term agreement or covenant).*

(Question). In your opinion, what actions or policies can the State and Local government put in place to make it more favourable for landholders to enter a permanent covenant for nature conservation on their land? *(For all landholder categories)*

(Question). Are there any comments you would like to make on other issues relating to nature conservation on private lands and/or permanent covenants? *(For all landholder categories)*

(Statement) I am familiar with the available permanent covenant programs for nature conservation in the State. *(For landholders with fixed-term and no covenant or agreement)*

[ii] Equity concerns in nature conservation on private lands that have a bearing on covenant uptake by landholders.

(Question). What percentage of the cost of nature conservation on your land do you consider should be covered by the public if you were to place a permanent covenant on your land today? *(For all landholder categories)*

Statement. I believed the cost of entering a permanent covenant on my land should be covered by the agency/organisation issuing the covenant. *(For landholders with a permanent covenant)*

(Question). In your opinion, what actions or policies can the State and Local government put in place to make it more favourable for landholders to enter a permanent covenant for nature conservation on their land? *(For all landholder categories)*

(Question). Are there any comments you would like to make on other issues relating to nature conservation on private lands and/or permanent covenants? *(For all landholder categories).*

NB. The last two questions provided responses in a qualitative form in terms of statements. The response for each respondent was visually accessed and the ideas expressed in the statements were extracted and coded under separate categories. Therefore, all statements from the respondents that expressed a similar idea were coded under the same category.

2.5 Stages in Data Analysis

Descriptive statistics was carried out initially to identify anomalies in the data set. This was followed by a cross tabulation to provide information on how respondents with a given value on one variable responded to one or more other variables.

2.5.1 Descriptive analysis

Frequency distributions and averages of the new measurement variables were used for all landholder categories. These covered exogenous landholder variables such as their age, long-term management goals, dependence on income from land, socio-economic variables, and perceptions and attitude to a permanent covenant uptake and its related features. Others

covered were exogenous property variables such as total property size, principal land use type, size of conservation area, percentage ratio of conservation area to total property size and conservation types. The purpose of the descriptive analysis was to determine the percentage distribution of cases among the different levels of each variable in order to establish the initial profiles of each landholder category.

2.5.2 Tests of variable relationships

Contingency tables for landholders without any form of an agreement and those with a fixed term agreement/covenant were constructed separately. In both cases, codes of the attitudinal levels for the dependent variable 'attitudes to a permanent covenant uptake' were listed on top of the columns, while categories of the independent variables were placed in the rows. The frequency of cases of each cell was inserted. In order to reduce the number of cells that had less than five cases and for ease of interpretation of the result, the attitudinal levels of the dependent variable for each landholder were grouped into five levels by combining the two attitudinal levels 'Neither agree or disagree' and 'Don't know', into one level referred to as 'Neutral'. All others levels were left intact.

Somers'D test (Newson, 2002) and Goodman and Kruskal tau test (Goodman & Kruskal, 1972) were carried out to determine the significance of the relationships between the independent variables and dependent variable for each landholder category. Somers'D test only applied where both independent and dependent variables were ordinal. Only statistically significant relationships between the independent and the dependent variable at a probability level of 0.05 or less had their cells in the contingency table considered for interpretation. A non-significant test meant that no association between the dependent and independent variables were present and the observed differences in the cells could be explained by chance. The tests determined the independent variables that have an individually significant association with the dependent variable to warrant further investigation and selection for possible inclusion in a multivariate path analysis. Independent variables showing a high lack of association with the dependent variable could be removed from further analysis.

2.5.3 Path analysis using multiple regression

The purpose of path analysis was to establish the direct and indirect effects of several variables that were hypothesized (predicted) to have an effect on the dependent variable (i.e. attitudes to a permanent covenant uptake), to explain the proportions of variance and to estimate the magnitude of correlations among the variables.

In the present study, path analysis was used to give a quantitative interpretation to an assumed causal system constructed using the information on the observed correlations between the variables, qualitative information provided by the respondents and other information based on knowledge, theoretical formulation and assumptions and logical analysis (Wright, 1934).

Because path analysis is concerned only with linear, additive relationships among a set of variables measured on interval (or continuous) scales, only those variables meeting this criterion were selected for analysis. Therefore, path diagrams were constructed to display graphically the patterns of causal relations among a set of these variables. The proposed models in the present study were recursive (unidirectional causal flow), indicating that no two variables can be both causal and effect on each other at a given time.

The predictor and mediator variables that were selected for inclusion in the path analysis are shown by their codes and description in Tables 2.4 and 2.5, respectively.

Table 2. 4 Predictor variables hypothesized and entered in the initial path model for their effect on attitudes to a permanent covenant uptake of landholders in Victoria and Western Australia that have no covenant or agreement and those with a fixed-term agreement and fixed-term covenant.

Predictor (Explanatory) variables codes	Variable description
Age	Age of the respondents
Knowledge	Level of knowledge about permanent covenants
Length	Length of property ownership in the family
Con_interest	Interest in long-term nature conservation
Ownership	Long-term goal for retention of ownership.
Management	Long-term goal for retention of management
Membership	Affiliations/association with conservation organisations
ConRatio	Ratio of conservation area to property size
Fin_support	Frequency of reception of financial support
Labour	Level of labour commitment
Debt	Level of financial debt on property.
Econ_depend	Economic dependence on property (% ratio of income)
State*	State of Victoria or Western Australia

*note: the predictor variable 'state' was only tested in the path regression model involving the combined non-holders of a covenant or agreement in Victoria and Western Australia.

The variable selection for inclusion in the path analysis was based on findings from literature review and the statistically significant relationships between individual independent variables and attitudes to a permanent covenant uptake for each of the four categories of landholders on whom the path analysis was carried out. Furthermore, only variables that met the criteria for inclusion in a regression analysis (i.e. measured on continuous or ordinal scale) were included in the hypothesized input path model. The response categories of the ordinal

variables were reduced from six to five categories by combined the response 'I don't know' with the neutral response 'neither agree nor disagree'.

The endogenous (mediator) variables (Table 2.3) were treated as independent variables in a test of their relationship with the output variable ('attitudes to a permanent covenant uptake'). However, they were treated as the dependent variables in respect to their relationship with the hypothesized predictor (exogenous) variables shown in Figure 2.1.

Table 2. 5 Mediator variables hypothesized and entered in the initial path model for their effect on attitudes to a permanent covenant uptake of landholders in Victoria and Western Australia that have no covenant or agreement and those with a fixed-term agreement and fixed-term covenant.

Mediator variables code	Variable description
Effectiveness	Effectiveness of permanent covenant for long-term conservation over other mechanisms
Restrictions	Attitude to imposed restrictions on land-use
Benefits	Perceptions of the benefits of a permanent covenant
Value_loss	Perception of the impact of permanent covenant on land value
Necessity	Perceived necessity of a permanent covenant
Nonfin_recog	Attitude to non-financial recognition for permanent covenant uptake
Salinity	Perceived effectiveness of permanent covenant for salinity control
Compensation	Attitude to compensation for permanent covenant uptake

2.5.3.1 Procedure used in Path Analysis

Diagrammatical representation of the input path model for all landholder categories is depicted in Figure 2.1. The model illustrates the hypothesized paths between the predictor and mediator variables shown in Tables 2.2 and 2.3 respectively, the hypothesized correlations between the predictor variables and the correlations between the mediator variables. All the variables in the model were predicted to have direct effects on the dependent variable 'attitudes to permanent covenant uptake' and all predictor variables were predicted to have an effect on a mediator variable on which a straight line originating from them points. Similarly, all mediator variables were predicted to have an effect on other mediator variables on which there is a curved line joining the two variables. However, Figure 2.1 does not highlight the effects of all the variables in the model on the output variable (Attitudes to a permanent covenant uptake). This is omitted in order to make the model more visually comprehensible.

The hypothesis and assumptions of the relationship between variables in the model were intuitively derived, based upon literature research, qualitative information provided by landholders in the study and the author's knowledge about relationships between the variables.

Correlation matrices among the variables and standardized regression path coefficient (beta weight) were used to construct a path diagram. A straight, single headed arrow in a path diagram drawn from each independent variable and pointing to the dependent variable represents an effect relationship between the independent and dependent variables (see Figure 2.1). The direction of the arrows depicts the hypothesized direct and indirect paths.

Correlations between endogenous or exogenous variables were depicted with curved lines with arrows on each end (see Figures 2.1) to indicate that there is no envisaged causal effect of either variable on the other and consequently that the relation between the variables remained unanalysed (Pedhazur, 1982). In addition, because the reason for the correlations between exogenous variables is unknown, it is possible to assess their direct or indirect effects through intervening variables but not the indirect effects of the exogenous variables through each other (Namboodiri, Carter, & Blalock Jr., 1975). Finally, an arrow was drawn from a residual variable into the dependent variable to indicate the unexplained variance (see Figure 2.1).

To estimate the magnitude of direct and indirect paths for all landholder categories, a series of regression analysis were carried out by entering the variable 'Attitudes to a permanent covenant' as the dependent (output) variable and all exogenous and mediator (endogenous) variables hypothesized in the model were entered as the independent variables. The aim of this first model was to establish the variables that have a direct effect on attitudes to a permanent covenant uptake. The value of adjusted/standardized R^2 (R^2adj), which represents the amount of change in the dependent variable that is attributed to a single standard deviation unit's worth of change in the predictor variable was set at a significant level of 0.05. It was also used to determine how well each exogenous or mediator variable explained the variation of the dependent variable.

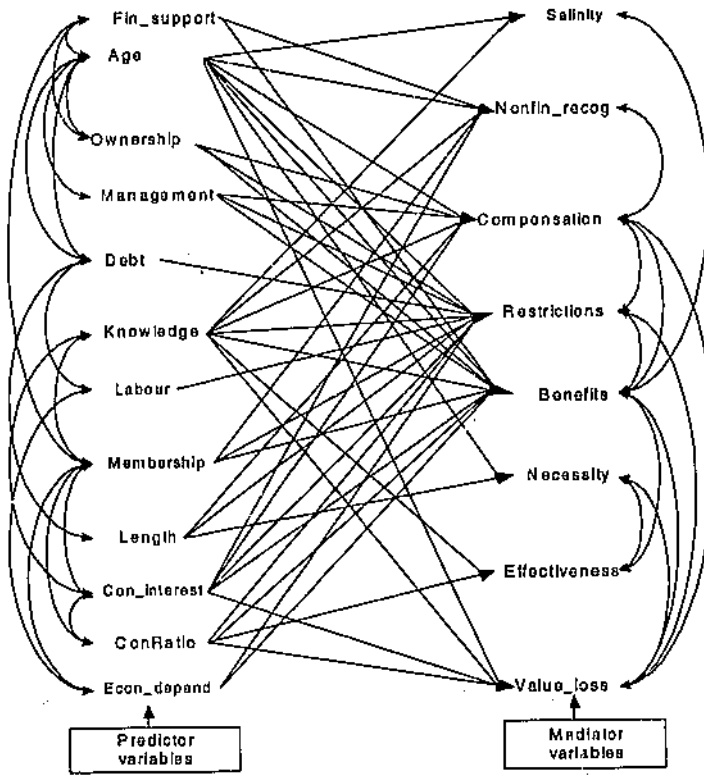


Figure 2. 1 Conceptual path diagram showing hypothesized correlations between predictor/predictor, and mediator/mediator variables and effects on each other for all categories of landholders.

Note 1: All variables in the model are hypothesied to have a direct effect on the depedend (output) variable 'attitudes to Pcov uptake'. However, this is not illustrated in the present diagram inorder to avoid over-clustering in the diagram.-

Note 2: Construction of this diagram is based on information from literature review and bivariate relationships indentified in section one.

A second model was constructed using the variables retained in the first model because of their statistical significance at a 0.05 level. Separately multiple regression was carried out for each endogenous variable retained in the model acting as the dependent variable and the exogenous variables as the independent variables. The aim of this model was to establish the predictor variables for each mediator (endogenous) variable.

A final path model for each landholder category was constructed by entering all variables retained in the previous sets of regression models into a new regression analysis. New coefficients of each path from the endogenous to the output variable (attitudes to a covenant uptake) were entered in the path model, while the previous path coefficients of the exogenous to the mediator (endogenous) variables were imported to the final path model. Lastly, the overall model fit was assessed by analysis of variance (ANOVA).

The overall effect of a selected variable on another variable was decomposed into direct and indirect paths in order to calculate the effect of the individual paths. The correlation between independent and dependent variables was calculated as the sum of the direct and indirect effects (Carey, 1998).

2.5.3.2 Limitations of Path Analysis

- Relationships among variables in the model must be linear, additive and causal.
- Relationships in the path diagram must be testable by straightforward multiple regression and the intervening variables can all serve as dependent variables in multiple regression analyses.
- Path analysis only includes one-way causal progression across (or down) a path diagram, with no reciprocal causation between variables.
- Path analysis cannot establish the direction of causality, although it may be used to evaluate causal hypotheses. It may also be used in some (restricted) situations to test between two or more causal hypotheses. Furthermore, it is also more likely to be useful in hypothesis testing than in exploratory research.
- Relationships in a path diagram must be capable of being treated as being on an interval scale. Nominal measurement, or ordinal measurement with few categories, including dichotomies, will make path analysis impossible (Pedhazur, 1982). In the present study, several variables that did not meet this criterion were excluded in the path analysis thereby restricting the observable variable relationships with the possibility of missing out important and valid variable effects in the model.

Further explanation of the procedure used in the path model construction is provided in section 4 of chapter 4.

2.5.4 Evaluation of similarities and differences in profiles between landholder categories

Responses from respondents with a fixed-term agreement or covenant and landholders without any form of covenant or agreement in Victoria and Western Australia were compared and contrasted with those of permanent covenant holders from Victoria. The purpose was to examine the relative importance of various attitudinal, economic, socio-demographic, social affiliation influences and onsite factors leading to the uptake of a permanent covenant.

2.5.5 Evaluating presence of a transition in attitudes to covenant uptake

To establish if there is a transition in landholders' attitudes to covenant uptake between the non-holders of a covenant or agreement and fixed-term agreement/covenant holders, comparison of the proportions of their attitudinal scores in the dependent variable ' attitudes to a permanent covenant' were carried out visually. Large differences in proportions (e.g., majority of one group of landholders showing a positive attitude to permanent covenant, while the majority of the other group shows negative attitude to a permanent covenant) shows the presence of a transition in landholders' attitudes to covenant uptake from one group to the other.

2.5.6 Categorizing qualitative data

The written qualitative responses by each respondent to the open-ended questions were visually assessed and the different ideas expressed in the overall statements were coded into separate categories as sub-themes. For each respondent, all statements that expressed a similar idea (desired actions) were isolated and coded into the appropriate sub-themes. Linked sub-themes were thereafter grouped into new categories referred to as main themes (incentive group). The numbers of respondents contributing to a given sub-theme were recorded.

2.5.7 Summary of analysis procedure by landholder categories

In order to answer the general question on the factors that influence the decision of landholders to the uptake of a permanent covenant on their land, the following analysis based on answering the associated questions was conducted on all landholder categories.

The initial step in the analysis was to establish the profiles (characteristics) of landholders with a permanent covenant as a benchmark on which to compare the profiles of other landholder categories. A descriptive analysis using frequency distributions was used to provide the first profiles. These were based on 28 variables grouped into the following categories: exogenous characteristics of the property, pre-covenant landholders' expectations of a permanent covenant, perceptions and attitudes to nature conservation and covenants, familiarity with covenants, long-term goals for the property, attitudes to property rights and views on incentives and equity in conservation.

The aim of the first stage in the data analysis for landholders in both categories was to establish their profiles based on frequency distributions of all dependent and independent variables. Cross tabulation of the variables was carried out to provide further information on the frequency distribution Test of associations between the dependent and independent variables was carried out as a first step in establishing the significant variable relationships, which characterise each landholder category and to determine the significant variables for inclusion in further analysis using multiple regression.

Path models were constructed for each landholder category using multiple regressions, in order to establish the variables that predict landholders' likelihood of taking up a permanent covenant.

2.6 Conclusion

This chapter has provided a detailed overview and justification of the method employed in this research. The procedure used in the construction of the questionnaire instruments for gathering the required information from landholders and the treatment of the gather information to its analysis has been shown.

Several operational issues were encountered in the landholder sampling process. In particular, long delays were encountered in the attempt to access the contact addresses and information on landholders from the databases, particularly in Western Australia. Because of the confidentiality of information held by government departments, there was need to demonstrate that the requested information was to be used only in the manner that was prescribed in the ethics declaration to the Edith Cowan University Ethics Committee. Several meetings, telephone conversations and correspondence with the responsible officers took place over a period of two months before access to the necessary information was granted.

Access to landholders' names and contact addresses and mailing of questionnaires in Victoria necessitated travelling there in person to meet with the organisations that hold the information. Apart from the travel time, accessing the databases and actual mailing out of the questionnaires in Victoria was much quicker than in Western Australia.

Cross-database verification of the membership status of landholders in respect to the different conservation agreements was also a time consuming part of the study. The verification was necessitated by the lack of a centralised database of landholders with all the required information.

The next three chapters provide the findings and a preliminary discussion for each of the three different groups of landholders included in the study. The next chapter specifically provides the findings and discussion on permanent covenant holders. The aim of the chapter is to establish the factors that are likely to have influenced the decision of this group of landholders to take up a permanent covenant.

Chapter 3

Permanent Covenants

Research Findings and Preliminary Discussion

This chapter contains the results of quantitative and qualitative data analysis of permanent covenant holders in Victoria and a discussion of the findings. The aims of the chapter are:

- *to establish the factors that influenced landholders' decisions to take up a permanent covenant in order to characterise potential permanent covenant holders and;*
- *to establish landholders' views on the barriers to, and incentives for, the uptake of permanent covenants.*

Introduction

Permanent covenants uptake by a covenantor entails acceptance of several conditions relating to land-use in exchange for limited conservation management support from a covenantee. It has been noted earlier in chapter one that a significant proportion of landholders are reluctant to take up a permanent covenant. This reluctance is attributed to attitudinal, socio-economic, and situational factors, many of which are not clearly defined. Some specific factors that have been identified include an apprehension about loss of rights to their land (Binning & Young, 1997), and potential economic disadvantages resulting from the uptake of a permanent covenant in the absence of appropriate incentives (Young et al., 1996).

One of the aims of this chapter is to identify the array of factors that motivated landholders to take up a permanent covenant and the potential incentives for encouraging reluctant landholders towards a covenant uptake. A premise of this study is that understanding the attitudinal, socio-economic, and situational characteristics of permanent covenant holders can be used to define the baseline/benchmark of attributes for identifying potential permanent covenant takers. Furthermore, this understanding can guide the development of policies and strategies for supporting nature conservation on private land.

Victoria was selected as a case study of permanent covenant holders because it has a longer use of permanent covenants (over 10 years) than other States or Territories in Australia. Furthermore, it had a largest number of permanent covenant holders of any State or Territory in Australia at the time of conducting the study, from which to obtain a sufficiently large sample of landholders for the study.

The response rate of the survey was 58.7 percent from 373 valid dispatches to landholders. This rate is considered large and adequate for the purpose of the study.

Section One: Results of the descriptive analysis

3.1.1 Exogenous Characteristics –Property and landholders

The average size of the properties under a permanent covenant was 266.5 ha. Half of them were less than 44 ha and only 15 percent are larger than 500 ha. Three of every four properties were less than 160 ha. Ninety-four percent of the properties were solely freehold tenure, and the rest had a portion of the property area on lease.

A quarter of the properties had the total area under a permanent covenant, and 60 percent had more than 30 percent of the total area covered under a permanent covenant. Only a quarter of the properties had less than 10 percent conservation cover.

The largest land area under a permanent covenant was 1000 ha and the lowest was 0.2 ha. Ninety percent of properties had less than 100 ha registered under a permanent covenant. A third of the properties had other areas, apart from those under a permanent covenant, with nature conservation or significant nature heritage features: streams/rivers (20%), wetlands (11%), and native grasslands (14%).

The percentage ratio of conservation area to total property area, i.e., percentage of areas under a permanent covenant plus other nature conservation areas to total property size showed 27.5 percent of the properties are totally under nature conservation cover, and half of the properties had more than 74 percent nature conservation cover. Evidently, the overwhelming majority of landholdings (>75%) had a large proportion (>50%) of their total land area under nature conservation.

Almost half of the properties (47%) were exclusively managed for conservation purposes and three percent exclusively for hobby farming. Fifteen percent of the properties were managed for sheep/cattle. Seventy-five percent of properties had less than 10 ha worked.

The respondents' average age was 58 years. Approximately 75 percent were more than 50 years old. Of these, a quarter was more than 65 years old. Slightly over half of the properties had been in family ownership for less than 20 years, and almost 20 percent of the respondents had another agreement before they took up a permanent covenant, with the majority (90%) of these having a Land for Wildlife Agreement.

3.1.2 Motives for retention of nature conservation

The frequency distribution of landholders according to the primary reasons for having retained the nature conservation features on their property is shown in Appendix 3.1. The majority of landholders retained nature conservation features primarily to support the conservation of native vegetation.

Approximately 87 percent of respondents said they would still have placed a permanent covenant on their property whether or not a restriction on clearing was in existence. Close to seven percent said they would not have done so, and six percent said they were not sure.

3.1.3 Long-term goals for the property and association influence

Sixty-seven percent of the respondents anticipated retaining ownership of their property in the family in the future at the time they took up a permanent covenant. Close to 18 percent did not anticipate retaining ownership, and 15.3 percent were not sure. Very similar proportions were expressed for whether they anticipated the management of the property would be retained in the family in the future.

Half of the respondents were members of, or supported, one conservation group or organisation before they took up a permanent covenant on their property. Twenty-four percent of the respondents were member of, or supported two groups, and 24 percent supported more than three groups. Therefore, all respondents were members of, or supported, at least one conservation group.

3.1.4 Financial and economic profiles

The majority of respondents (71%) had never received financial support/benefits from any organisation or government department to undertake nature conservation work before they took up a permanent covenant. Only 10.6 percent had received financial support once, and 10.5 percent more than once.

The proportions of respondents by the approximate income derived from the property in the year they placed a permanent covenant on their land is presented in Appendix 3.2. Total income of landholding was calculated from the sum of the median of income from inside and outside the property. It ranged from $5,000 to 450,000. Almost half of the respondents had a total income greater than $42,000, and 10 percent had a total income greater than $98,000. Nevertheless, the majority of respondents did not have a debt on their property when they placed a permanent covenant on it.

The proportion of respondents against the percentage ratio of income from property to their total income is shown in Appendix 3.3. Approximately half of the respondents did not derive any income from the property, signifying a low income-dependence on the property.

3.1.5 Expectations and incentives for covenant uptake

The proportions of respondents in relation to the importance they accorded to provision of various services and actions as pre-requisites and incentives for a permanent covenant up take are shown in Appendix 3.4. Forty-four percent of the respondents gave importance to 'access to long-term management advice' as an important pre-requisite to taking up a permanent covenant. Close to 41 percent did not attach any importance to a permanent covenant's ability to lead to 'increased public recognition and appreciation of the conservation values on their property'. The overwhelming majority of respondents attached high importance to a permanent covenant's ability to assure the long-term nature conservation in comparison to other conservation agreements.

Less than 20 percent of the respondents gave a level of importance to assurance of on-going financial support as a pre-requisite to taking up a permanent covenant, and almost a third of the respondents did not consider the issue of financial support in their decision. In their decision to take up a permanent covenant, almost half of the respondents gave a level of importance to a covenanting institution's independence from Government. Eighteen percent did not consider this issue in their decision.

3.1.6 Influence on the amount of land placed under a permanent covenant

Table 3.1 reports on the extent to which the noted issues influenced the amount of land that the respondents placed under a permanent covenant.

Table 3. 1 Influence of certain issues on the size of the conservation area placed under a permanent covenant in Victoria

Statement: To what extent did the following concerns (a-b) influence the size of the conservation area on which you placed a permanent covenant?

		Attitudinal scale						
		Very much	Much	A fair amount	A little	Not at all	Don't know	Total
Concerned about a possible loss in market value of the property.	Frequency	8	4	7	33	121	7	180
	Proportion (%)	4.4	2.2	3.9	18.3	67.2	3.9	100
Concerned about permanent restrictions on the use of the conservation areas.	Frequency	16	8	9	43	97	6	179
	Proportion (%)	8.9	4.5	5.0	24	54.2	3.4	100

For the majority of respondents, the amount of land they placed under a permanent covenant was 'not at all' influenced by a concern about a possible loss in market value of their property because of placing a permanent covenant on it, nor was it influenced by a concern about the permanent restrictions on the use of the conservation areas. Close to 30 percent of the respondents were influenced to varying degree by the possible loss in market value of their property.

3.1.7 Influences on permanent covenant uptake

Table 3.2 reports on the proportions of respondents according to the magnitude of influence by the different issues in their uptake of a permanent covenant.

Table 3.2 Proportion of respondents with a permanent covenant in Victoria according to the level of influence of various issues on their permanent covenant uptake

Issues		Rating of Influence in percentage					
		Very much	Much	A fair amount	A little	Not at all	Don't Know
a. Concerned about a likelihood of the conservation areas being altered by future owners or managers of this land	%	60.5	25.9	9.3	1.9	1.9	0.6
b. No other equally effective mechanisms than permanent covenants for promoting long-term nature conservation on my land.	%	27	40.9	19.5	6.9	4.4	1.3
c. Permanent covenants an opportunity to demonstrate to others the importance of long-term nature conservation on private land.	%	9.4	23.3	50.3	14.4	1.3	1.3
d. Convinced a permanent covenant was an effective mechanism for present and future measure for salinity control on my land.	%	3.3	5.5	27.5	26.4	34	3.3
e. The presence of neighbours or friends having a permanent covenant on similar nature conservation areas as mine.	%	2.6	4.5	11	31	22.5	28.4
f. Economic gains to be realised in the future by using a permanent covenant as a long-term nature conservation mechanism on my land.	%	1.9	2.6	3.2	14.9	40.4	37

The key findings based on Table 3.2 are that:

1. The majority of respondents (68%) were either 'much' or 'very much' influenced to take up a permanent covenant by their conviction there were no other equally effective mechanisms.
2. Almost 41 percent of respondents were 'not at all influenced' to take up a permanent covenant by the notion of economic gains in the future.
3. The majority of respondents would still have placed a permanent covenant on their land if they were convinced that altering land for agricultural production would

bring greater economic returns than they currently do. Nevertheless, close to 13 percent would not have taken up a permanent covenant under such circumstances, and close to ten percent said they not sure about it.

4. The majority of respondents were a little or not at all influenced to take up a permanent covenant by their conviction a permanent covenant was an effective mechanism for present and future measure for salinity control on their land.
5. The majority of the respondents to 'a fair amount', were influenced to take up a permanent covenant by the view that a permanent covenant on their land was an opportunity to demonstrate to others the importance of long-term nature conservation on private land.
6. The majority of respondents were 'very much' influenced to take up a permanent covenant by a concern about a likelihood of the conservation areas being altered by future owners or managers of their land.

Table 3.3 reports the proportion of respondents according to scores based on their rating for the different issues (see Table 3.2) that influenced their covenant uptake. The highest rating '1' depicts the highest importance placed by the respondent on the issue shown in Table 3.2 and is therefore allocated the highest score of five points. The 'I don't know' response category was allocated the lowest score of zero point.

Table 3.3 Importance rating and scores on issues that influenced respondents' decision to take up a permanent covenant in Victoria

		Importance rating, proportion of respondents and point score						
Issues/factors	**level of Importance**	**1**	**2**	**3**	**4**	**5**	**6**	
	Base points	**5**	**4**	**3**	**2**	**1**	**0**	**Total**
Likelihood of the conservation areas being altered by future owners or managers of this land	%	60.5	25.9	9.3	1.9	1.9	0.6	100
	Score	302.5	103.6	27.9	3.8	1.9	0	439.7
No other equally effective mechanisms than Pcov.	%	27	40.9	19.5	6.9	4.4	1.3	100
	Score	135	163.6	58.5	13.8	4.4	0	375.3
Pcov as an opportunity to demonstrate to others the importance of long-term nature conservation.	%	9.4	23.3	50.3	14.4	1.3	1.3	100
	Score	47	93.2	150.9	28.8	1.3	0	321.2
Convinced a Pcov was an effective mechanism for salinity control	%	3.3	5.5	27.5	26.4	34	3.3	100
	Score	16.5	22	82.5	52.8	34	0	207.8
Presence of neighbours or friends having a Pcov.	%	2.6	4.5	11	31	22.5	28.4	100
	Score	13	18	33	62	22.5	0	148.5
Economic gains to be realised in the future by using a Pcov.	%	1.9	2.6	3.2	14.9	40.4	37	100
	Score	9.5	10.4	9.6	29.8	40.4	0	99.7

Scores for each rating were calculated by multiplying the base points of that rating by the proportion of respondents in that rating. The points scored at each rating, shown in the columns and representing each issue shown in the rows, were summed to obtain total score for the issue. The higher the total score, the greater the overall influence of the issue over the others in having influenced the uptake of a permanent covenant.

Of the six issues presented in Table 3.3, 'concern about a likelihood of the conservation areas being altered by future owners or managers of their land' had the largest total score and is therefore the most important of the issues that influenced the respondents' uptake of a permanent covenant. This was followed in importance by 'the conviction there were no other equally effective mechanisms than permanent covenants for promoting the long-term nature conservation on private land'. The least important issue in the decision to take up a permanent covenant were 'The presence of neighbours or friends having a permanent covenant on similar nature conservation areas as mine.' and 'feeling there were economic gains to be realised in the future by using a permanent covenant as a long-term nature conservation mechanism'.

3.1.8 Equity issues in nature conservation

Respondents were asked if they viewed the public to have any responsibility for the cost incurred in nature conservation on their property, and the proportion of the costs that should be covered by the public. The expected public contribution to the cost of conservation on private land by proportions of respondents is shown in Appendix 3.5. There were relatively equal proportions of respondents that affirmed a role for the public (43.0%) contribution to conservation cost and those that did not affirm such role (40.9%). Another 15 percent of the respondents were 'not sure'. Although distribution of respondents was relatively even over the different cost contribution classes, of the respondents that preferred a level of public contribution to the cost of conservation on private land, a quarter of them stated that the public should cover more than 40 percent of the cost.

3.1.9 Overview of factors characterizing permanent covenant holders

The factors that characterised landholders who took up a permanent covenant are outlined below. These factors are placed in three categories comprising: what prompted the decision to take up a permanent covenant, pre-requisites for the uptake of a permanent covenant, and outstanding exogenous characteristics of landholders and their properties.

Characteristics of respondents based on the reason that prompted their uptake of a permanent covenant:

1. A strong conviction of the likelihood of the conservation areas being altered by future owners or managers of the property.
2. Only a fair amount or not at all influenced to take up a permanent covenant by the possible future economic gains because of having a permanent covenant.
3. Strong convictions there are no other equally effective mechanisms than permanent covenants for promoting the long-term nature conservation on private land.
4. Little or not at all convinced a permanent covenant was an effective mechanism for present or measure of future salinity control on the land
5. Not at all influenced to take up a permanent covenant by the presence of neighbours or friends who have a permanent covenant on similar nature conservation areas.
6. Influenced to a fair amount to take up a permanent covenants as an opportunity to demonstrate to others the importance of long-term nature conservation on private land
7. Would still have placed a permanent covenant on their property even if restrictions on clearing of native vegetation did not exist.
8. Would still have placed a permanent covenant on the land even if they were convinced that altering them for agricultural production would bring greater economic returns than they did at the time.
9. Amount of land they placed under a permanent covenant was not at all influenced by a concerned about a possible loss in market value of their property by placing a permanent covenant on it, or by a concern about the permanent restrictions on some use of the conservation areas.
10. Retained the nature conservation features on the property primarily for conservation purposes.

Characteristics based on the pre-requisites for taking up a permanent covenant by the majority of respondents:

11. Gave high importance to a permanent covenant's ability to provide greater assurance for long-term nature conservation than other conservation agreements.
12. Did not give consideration of availability of financial support in determining whether to take up a permanent covenant.
13. Gave high importance to the covenantee being independent of government.
14. Gave some importance to availability of long-term management advice on conservation.

Characteristics based on exogenous factors of the majority of respondents or their properties:

15. Had less than half of the total income dependence on the property.
16. Had never received some financial support/benefits before they took up a permanent covenant on their property.
17. Did not have a debt on their property when they placed a permanent covenant on it.
18. Have properties characterised by a relatively small area size of less than 160 ha.
19. Properties had been in family ownership for less than 20 years.
20. Properties had larger than 74 percent ratio of conservation areas to total land area.
21. Anticipated retaining ownership and management of their property in the family in the future at the time they took up a permanent covenant.
22. Were members of one or more conservation groups before they took up a permanent covenant.

Section Two: Results of Qualitative Data Analysis

This section contains a synthesis of comments by landholders on the actions and policies that the State and Local governments should put in place to encourage private landholders to take up a permanent covenant. These are classified into major themes based on common issues and concerns expressed by the respondents. The aim of this section is to establish the barriers and incentives to permanent covenant uptake as viewed by permanent covenant holders in Victoria. Understanding what these barriers and incentives are can aid in the formulation of appropriate policy actions for encouraging the uptake of permanent covenants.

3.2.1 Views on State government policies and actions

The concerns and policies cited by respondents, which the State government can address to encourage the uptake of permanent covenants among private landholders are elaborated below.

(i) Financial Incentives

Tax incentives: Fifteen respondents cited the need for State government to reduce or abolish all taxes, including capital gains tax where relevant, and stamp duties from sale or purchase of covenanted land. Twenty respondents cited the need for State government to give taxation benefits to permanent covenant holders. Such benefits include tax breaks on interest and charges for financing purchases for conservation, General Service Tax (GST) exemption for fencing and other items bought for conservation purposes, and tax relief such as deductibility on expenses for costs incurred in maintaining the covenant conditions including weed control and fencing.

The notion presented here is that tax advantage measures targeted at those with a permanent covenant can encourage others to take up permanent covenants. Specific measures cited include provision of various forms of grants and assistance to non-primary producers similar to those available to primary producers, and by providing financial incentives to pensioners to act as caretakers of covenant land under their ownership.

Fifteen respondents said it was necessary for the Government to implement an effective way of funding all conservation and restoration works, "in order to ensure the health of all land (bush and agriculture)". Moreover, that provision of financial support, as an incentive, should be from all levels of Governments. In justifying financial incentives,

respondents noted that conservation was time consuming and expensive. One respondent explained:

> *"I don't want to sound greedy but we are battling in the land at the moment. At the same time, nature conservation is profoundly important to us. Government at all levels must get serious about protection of native vegetation and wildlife, and not to just pay lip service."*

Another respondent noted "*Unfortunately we cannot rely on altruism to protect enough vegetation on private land*", and another noted: "*There is need to offer a 'carrot ' to landowners in order to make a major difference.*" A small number of respondents also recommended that financial support should be provided as compensation for loss of production of area under a permanent covenant.

Financially support local government and organisations: Thirteen respondents felt that the State government had the responsibility of providing financial support to local government to underwrite some revenue loss to them because of rate reduction passed on to landowners with a permanent covenant, and to fund programs of covenanting organisations to facilitate a more comprehensive coverage of conservation priorities on private lands.

Cover costs of covenant uptake, fencing and management: Twelve respondents noted the need for State Government to cover all costs associated with taking up a permanent covenant, including legal costs and the full cost of title adjustment. Some considered that this could be done by tax deduction. Forty-nine respondents cited the need for financial assistance with fencing material and its maintenance and re-establishment of native bush, and covering the cost of managing areas under a permanent covenant.

Other financial incentives: Fifteen respondents mentioned the importance of various financial incentives for encouraging landholders to take up a permanent covenant. The incentives include removal of all or part of the costs of placing, maintaining, and rehabilitating conservation areas under a permanent covenant. Such financial incentives by State government could be in the form of grants for establishing facilities for public use including walking trails, toilets, and signs, and free or discounted services to help maintain areas under a permanent covenant. A range of other financial related incentives suggested by different respondents include provision of carbon credits on old timber areas, removal of fees charged by water authorities on conservation, and provision of low interest loans for acquisition and conservation.

(ii) Management support and advice

Support control of weed and vermin: Twenty-four respondents cited several ways of providing this support: provision of subsidy, assistance for fencing to keep out vermin associated with specific areas of conservation, providing free vermin bait through government

departments, giving direct financial assistance, and assisting with removal of fetal animals. Other suggestions include providing traps on loan or rental to control rabbit population, providing logistical support, taking over the responsibility of weed control from the landowner, and adoption of a coordinated approach to weed control particularly from external sources such as adjoining roadside or public land.

One respondent justified the need for subsidized assistance on control of weeds as follows: "... *my property is densely foliated and relatively dry, I am quite nervous to do the burn-offs as is usually required for fear of losing control of the fire.*" Another respondent noted "...*inadequate control of weed and pests makes efforts at maintenance of covenanted land very frustrating*" and further pointed out the difficulties in funding weed control particularly when income is derived away from the land. It was suggested by some respondents that Green groups could assist in control the pests and weeds mechanically so as avoid poisoning native land and animals.

Management assistance and advice: Ten respondents cited the need for the State government to provide assistance in several management and advisory issues on conservation on private land. Examples of the support include setting up of conservation areas, encouragement and regular advice on management techniques/plans and conservation matters, and encouragement on the best way to maintain and enhance a permanent covenant. Others include support in identifying and cataloguing flora and fauna on covenanted land, advice on organic weed control strategies, and expert advice on control of soil erosion and salinity. It was suggested that advice should be provided by appointing appropriate environmental managers, providing information on local ecosystems, and by encourage ratepayers to manage properties environmentally.

Labour support: Four respondents noted that labour support was as an increasing need among landholders in areas such as spraying of noxious weeds and pests and eradication of rabbits particularly for the aged or those with limited physical strength. They stated that it can be facilitated through voluntary or paid help, and that some of the sources of labour include State funded employees such as Green-corps, persons on work-for-dole program, and contractors to carry out fencing/ fencing repairs. The needed provisions suggested by respondents are in addition to those provided by Trust for Nature's (TFN) covenant program.

(iii) Awareness and information

Promote conservation values and covenant awareness: Thirty-two respondents cited this as a responsibility of State government. Several of them emphasized that education and awareness, particularly on the value of conserving area under a private agreement and the existence and functioning of a permanent covenant, were the key to encouraging the uptake of covenants. To illustrate this, one respondent pointed out "*Not enough is known about covenanting among people who*

could be in a position to place covenants on their land". Several respondents also noted that more publicity of the scheme was required.

Some of the ways suggested by some respondents for educating landholders and prompting uptake of covenants include encouraging "*conservation minded people and agencies*" to have ready answers to questions about covenants, particularly in response to why it is important to set aside more private land for conservation. In addition, education should target the public, the youth and estate agents who "*have a role to play in directing buyers to the type of land that is right for their needs.*" It was also suggested that the public could be encouraged to collectively buy shares in the ownership of private bush and place a permanent covenant on it.

Other suggestions on how to promote and publicise covenants include ensuring simplicity, effectiveness and financial efficiency in promoting covenants and by providing signage for properties under a permanent covenant. In addition, strong support and promotion of covenants should be carried out by all levels of government aimed at reducing fear, particularly about loss in land value, and addressing the misconception of covenants as leading to 'the loss of control of the property'.

Some respondents stated that there was a need for more organised ways for supporting and promoting covenants among landholders. Some of these include supporting educational and workshop opportunities as well as demonstration sites, and increasing public awareness through greater recognition of permanent covenant holders. Other suggestions made by respondents for ways of publicizing covenants include broader advertising of properties in native bushland areas, promoting aspects about the benefits to be gained by permanent covenants such their contribution to quality of life and future generations and tourism and the benefits to the overall health of our catchment region. Publication of testimonials and "*...individual efforts (in conservation under a permanent covenant), and the overall benefits of covenants to the community*" were also cited as important information for promoting covenants.

(iv) Strengthen policy, tax regulation and enforcement.

Policy and regulation: Sixteen respondents noted the importance for State government to strengthen conservation policy and enforcement of regulations. Several ways in which this can be undertaken include facilitating changes to boundaries where areas of conservation interest could be transferred from one title to another, respecting covenanted areas and adopting appropriate policies on planting and clearing, and giving guarantees for future conservation by high penalties for future destruction.

Other recommendations include placing a ban on mining and native vegetation clearing in all areas declared conservation zones, imposing tighter restrictions on clearing of any native vegetation by making it very unattractive through increased land taxes, protecting

concerned land through zoning polices, and supporting concentration efforts with initial grants. One respondent concluded: "*...until local, state and federal governments endorse and support a value system that includes the common good, the process of private land covenants will remain at odds with the prevailing exploitative practice.*"

Other respondents suggested that policies should ensure that there is an effective way of funding all conservation, placing high priority on nature conservation on private land, enforcing clearing regulations, and legislating for covenants to override mining rights.

(v) Compensation

Eleven respondents cited the need for State Government to give compensation to those with a permanent covenant on their land for loss of income, decrease in land value, and as financial recompense for stewardship. Some ways that they recommended for achieving this include annual payment for limitation of use of conservation area and cost sharing for land that cannot produce revenue.

(vi) Recognition

Eight respondents cited the importance of non-monetary incentives for encouraging the uptake of covenants. Some of the incentives include recognition of value of conservation; public recognition of people covenanting properties, by presentation of awards or media coverage through newspaper articles; recognition of local knowledge and expertise; and public acknowledgement of the benefits of conservation. One respondent summed it as follows:

> *"Other than money most people crave recognition. Perhaps the government could give a letter signed by the Premier to landholders each year thanking them for their continued care for the land."*

3.2.2 Views on local government policies and actions

The comments and views by respondents on the action that the local government can take to encourage the uptake of permanent covenants are grouped into various categories and categorized below.

(i) Financial incentives

Reduce valuation and rates: One hundred and twenty eight respondents cited the need for reduction or complete waiver of land rates to encourage conservation and the uptake of permanent covenants. Various reasons were cited to justify a reduction in rates. The three most widely cited reasons were: in recognition of the impact of covenant on potential income and the work effort, the monetary sacrifice made on areas under a permanent covenant, and the benefit passed on to the wider community of the Shire.

In response to the level of rate reduction that should be provided, seven respondents stated that there should be a complete exemption of rates from the total area under a permanent covenant. Several respondents cited the need for partial rate relief varying from 10 to 95 percent. A respondent cited a certain Shire to illustrate a viable way of implementing a rate rebate system. The Shire gave $50/ha to a new covenant, with a minimum of 400 and maximum of 600 dollars per year. In addition, it gave 30 dollars per hectare with a minimum of 200 and a maximum 500 dollars to land that has an existing covenant.

(ii) Management support

Material and equipment support: Seven respondents mentioned that local governments could provide support to landholders aimed at enhancing conservation in general. Some specific examples cited include revegetation and conservation of roadside corridor through weed control, sensitive maintenance, replanting of indigenous species, and reversal of scorched earth policies. Other examples cited are provision of resources for controlled burning, provision of discounted vermin (rabbit, foxes, cats) and weed control chemicals and equipments, and support in the construction of dams, tracks, fencing, and tree planting. In addition, availability of low-cost hires of machinery for carrying out conservation work such as ripping rabbit warrens or spraying weeds was cited.

(iii) Policy, planning, enforcement and regulation

Planning and enforcement: Fifteen respondents stated the importance for local government to have stricter planning and enforcement of existing regulations. Some of the measures cited include zoning and restrictions of use of important habitat areas, supervision and policing of

conservation zoned areas, and disallowing development or mining permits that require the destruction of remnant vegetation. Other measures include enforcement of planning controls on remnant native vegetation, and formulation of policies that support conservation value such as the protection of rare vegetation communities/habitat including roadside corridors. Development and implementation of appropriate management of roadsides remnant vegetation in relation to covenanted areas were also cited as other measures in planning.

Regulation and policy: Ten respondents mentioned the need for local government to enact new conservation regulations and policies. These include a requirement for all landowners to plant trees, create wildlife corridors, and protect special areas. Others are the establishment of a trust fund to buy special lands, and formulation of a policy on maintenance and development of roadsides as wildlife habitat and corridors to link properties. Policies on preservation of endangered areas and a requirement for permits before any clearing, or ploughing of grasslands, and regulation to control vegetation clearing on private land roadsides and reserves were also cited as measures for implementation by local government.

(iv) Publicity and awareness and education

Nineteen respondents cited the need for promotion and publicity of covenants by providing information on covenants attached to rates notice from Shire offices, advertising the existence of permanent covenants, and promoting the value of conservation on private land.

(v) Recognition

Five respondents cited the importance of recognizing those with a permanent covenant as a way of encouraging others to take up covenants. Some of the ways suggested for giving recognition include annual awards and official recognition by local government of conservation values on the land through publicity.

Section Three: Brief discussion and conclusion

3.3.1 Introduction

The aim of this chapter is to establish the factors that characterise permanent covenant holders, which may be used to predict the likelihood of uptake of permanent covenants by non-permanent covenant holders. A brief discussion on the significant findings of the chapter is provided in this section. Detailed discussion of the findings and elaboration of their implication on nature conservation policy is provided in Chapter 6 in relation to findings from other categories of landholders contained in Chapters 4 and 5.

Permanent covenant holders can typically be characterised by four main features: Strong ethic for nature conservation, confidence in permanent covenant as mechanisms for assuring long-term nature conservation, little or no economic dependence on their properties, and little or no economic motivation in taking up a permanent covenant.

3.3.2 Nature conservation ethic

The link between environmental ethics and the uptake of conservation actions is covered widely in literature (eg. Elliot, 1995; Manning et al., 1999; Rolston, 1988). However, the constitution of a nature conservation ethic in Australia and the strength of the relationship between conservation ethic and adoption of management agreements such as covenants have not been fully established. According to Aldo Leopold (1948), an ethic may be regarded as a mode of guidance for meeting new or intricate ecological situations, or those that involve such deferred reactions, that the path of social expediency is not discernible to the average individual.

A combination of factors demonstrates that the uptake of a permanent covenant among the majority of respondents was influenced by their high conservation ethic and a sense of stewardship, which include positive attitudes and action towards nature conservation, and a desire to extend this attitude to others. In this respect, permanent covenant holders provide a guide on what constitutes a nature conservation ethic. Rolston (1988) asserts that people shape their values and conduct significantly according to their notion of the kind of universe in which they live. The evidence that the majority of respondents were 'very much' influenced to take up a permanent covenant by a concern about a likelihood of the conservation areas being altered by future owners or managers of their land is evidence of their value for nature, which is in turn demonstrated in their strong interest in its long-term conservation.

The assertion of the majority of landholders that they would still have taken up a permanent covenant even if regulatory bans on clearing of native vegetation were not in existence demonstrates their interest in long-term nature conservation. Prior membership and support to conservation groups before the uptake of a permanent covenant is another demonstration of interest in nature conservation by the majority of landholders irrespective of a permanent covenant. Further discussion on nature conservation ethic is provided in Section 2 of Chapter 6

3.3.3 Confidence in the covenant mechanism

One reason for the majority of landholders having taken up a permanent covenant was their conviction that there were no other equally effective mechanisms for promoting the long-term nature conservation on their land. This, in effect, demonstrates their confidence in the permanent covenant over other available conservation mechanisms. In this case, the alternative mechanism also in use among the majority of landholders was the informal nature conservation agreement under Land for Wildlife (Victoria).

In evaluating the suitability of a conservation mechanism landholders are more likely to take up one which they perceive to have minimum or no threat to the achievement of goals and objectives on their land (Drost et al., 1996; Nowak, 1987). Guerin (1999) confirms the findings that landholders will only take up a voluntary permanent covenant when they have confidence in it over other available mechanisms.

3.3.4 Economic dependence on land and economic motivation for covenant uptake

Most rural properties are managed as economic entities with varying levels of economic inputs and outputs. However, permanent covenant holders had minimal economic dependence on their property with a large proportion of them deriving no income from the property and having no debt on their property when they placed a permanent covenant on it. The minimal dependence on income from the property may be attributed to a possible presence of non-economically viable land outside the conservation area or a concern by landholders of a possible conflict in goals between economic production and nature conservation on the property. Contrary to the findings of the present study, most studies in adoption of conservation practices indicate a greater use of conservation practices with increases in farm size (Clearfield & Osgood, 1986).

Permanent covenant holders were least motivated to take up a permanent covenant for economic reasons. For example, concerning economic benefits, close to a third of the landholders did not consider an assurance of ongoing financial support an important aspect of

their decision to take up a permanent covenant. Another third did not even consider the issue at all. Furthermore, the majority of landholders were not at all concerned about a possible loss in market value of their property when determining the amount of land to place under a permanent covenant. Only a small proportion of them were influenced to some degree.

The findings also show that the majority of landholders were not at all influenced to take up a permanent covenant by the notion there were economic gains to be realised in the future by using a permanent covenant. Further evidence that economic imperatives are not the main emphasis in landholders' decision to take up a permanent covenant is suggested by the fact that the majority who would still have placed a permanent covenant on their conservation areas whether or not altering them for agricultural production would bring greater economic returns than those, which would accrue under conservation. This conservation land-use maintained by the landholders also signals their interest in nature conservation.

Furthermore, the fact that permanent covenant holders continued their involvement in nature conservation despite little on no external financial support (the majority having never received any financial support/benefits to undertake nature conservation work on their property before they took up a permanent covenant on their property) clearly demonstrates their interest in nature conservation.

Although economic factors had minimal influence on the decision to take up a permanent covenant, a cross section of the landholders cited the need for extension of financial support to those that do not yet have a permanent covenant. This, they assert, would address the significant financial difficulties that could deter the uptake of a permanent covenant even among those that are willing to do so.

The fourth characteristic of landholders with a permanent covenant therefore, is that they were not at all motivated to take up a permanent covenant for possible economic gains. The findings are entirely consistent with Gasson & Potter (1988) findings that the least financially constrained and conservation-oriented landholders offered most of their land to conservation schemes with minimal expectation of compensation.

3.3.5 Incentives for encouraging covenant uptake

Although landholders in this study took up permanent covenants voluntarily, there are constantly expressed views in this study that economic incentives are necessary for encouraging other landholders to take up a permanent covenant and for supporting conservation efforts under a permanent covenant.

What this tells us is that the need for economic incentives for conservation is not confined to those with a weak conservation ethic. Two forms of economic provision are noted

in the views of landholders. The first is the provision targeted at non-holders of permanent covenants as an incentive for their uptake of permanent covenants, while the second is provisions to current holders of a permanent covenant to assist them in conservation management.

Although various incentive measures were cited as necessary for encouraging others to take up a permanent covenant, tax incentives by government particularly a reduction in rates were by far the most frequently cited form of incentives for encouraging nature conservation and the uptake of permanent covenants. In reality, such a tax incentive is small and obviously not targeted at covering all the costs incurred or benefits forfeited by taking up a permanent covenant.

The justification cited by landholders for proposing tax incentives is recognition of the impact of covenant on potential income, the work done on the conservation area as well as the monetary sacrifice made on areas under a permanent covenant. The second justification is that the wider community at local level enjoys conservation benefits through covenants. As stated in Chapter 1, several local governments in Australia already provide reduced rates.

The level of rate reduction that landholders view should be provided by the local government differed from a complete exemption for the total area under a permanent covenant to partial rate relief varying from 10 to 95 percent. Recommendations for partial exemption of rates were widely made with acknowledgement that real benefit to the landholder can only be achieved if State or Federal governments compensated local governments' for forfeited revenue from rates currently paid for land under a permanent covenant. Landholders recognise that even when rates rebates are offered they are unlikely to have benefit in real terms. This is because they lead to a revenue shortfall for the local government, with the likely reduction in other services to landholders unless external subsidies to local governments are provided.

Other ways of providing tax incentives at local level while ensuring equity in nature conservation can be explored. A landholder cited an example of a viable system of implementing a rate rebate system already in use in some shires. It offers 50 dollars per hectare to a new covenant with a minimum of 400 and maximum of 600 dollars per year. In addition, land that has an existing covenant received 30 dollars per hectare with a minimum of 200 and a maximum 500 dollars respectively.

The need for financial and technical assistance for nature conservation actions on private lands is not peculiar to Australia. Farmers in the United States also have similar needs (Klapproth & Johnson, 2001). Direct financial support ensures that landholders can purchase the necessary inputs and services that are directly related to the conservation requirement under a permanent covenant. The justification for direct financial support is made: many landholders are interested in taking up a permanent covenant but are restricted by their financial constraints,

and landholders who already have a permanent covenant but have limited financial income due to change in their circumstances such as loss of employment, retirement, or sickness.

Landholders point out that covenant programs need to strengthen the review and monitoring process of permanent covenants. Regular inspection of areas under a permanent covenant and adjacent areas is essential, particularly when there is change of ownership of the property. The current trend, in Victoria where a review is carried out every three years, for example, is cited as inadequate for ensuring that the prescribed management plan is being implemented. It can be argued that frequent monitoring of property under a voluntary covenant might not be urgent, as the owners of such property are highly self-motivated in conservation to ensure the integrity of the conservation areas. In addition, conservation organisations are often under-funded and unable to engage regular expert reviewers for an increasing number and widely spread properties under a permanent covenant.

It is clear, however, that a section of landholders view more regular monitoring as a sign of care by the covenanting organisation and this acts as an encouragement to those with a permanent covenant. On the other hand, some landholders may view such increased monitoring negatively, as a sign of mistrust by the covenantor of their motives and ability to ensure the management of the conservation areas. Explaining why the monitoring is being carried out is an imperative to its success. Furthermore, monitoring is needed particularly where there is change in ownership or commencement of a long-term management lease of the property that is under a permanent covenant. This is to ensure that new landowners are familiar with, and practicing, what is expected under the terms of a permanent covenant, as well as to discuss with the new landholder any necessary adjustments to the management regime in view of possible changes in landholder goals and priorities.

Conservation organisations or projects that aim to encourage voluntary participation into their membership are likely to have greater success if they consult with those they seek to enrol, and collaborate with other organisations that are likely to add value to the participation. These views were articulated by a cross-section of landholders in the present study. Similarly, success of any program and motivation for participation can be assured where the process of participation is clear and simple, devoid of authoritarianism, bureaucracy and intrusion in private goals. These sentiments are often recited by program administrators and managers but often not adhered to comprehensively.

Although only a non-majority cross-section of landholders were of the view that the removal of government involvement in covenants would encourage the uptake of permanent covenant, the participation of government in the process should not be eliminated because government mediates the legality of a covenant, and is also a main funding source of covenant

programs. It is, therefore, difficult to take governments out of the process without compromising some of the potential benefits such as tax rebates.

Some landholders asserted that land high in conservation value should be purchased where a landholder is unwilling to place a permanent covenant on it. Although this is already being carried out by several covenanting programs in Australia and abroad through a mechanism of revolving funds, it can be financially demanding to purchase large pieces of nature conservation land. Another potential problem is that once the land is purchased from a landholder, another buyer that has an interest in long-term nature conservation has to be identified. This can hold back the purchase of further conservation properties as the funds are tied in with the unsold property. Furthermore, there is the likelihood of losing the benefits of the long acquired and specialized knowledge about the property held by the original owner when such property is sold.

Placing a permanent covenant on a piece of land is not a guarantee of its long-term conservation. A conservation area can be degraded through negative impacts from adjoining areas that harbour pests, weeds or suffers from erosion and pollution processes. Coordination and collaboration with owners of such adjoining properties can act to safeguard the conservation goals of a landholder thereby acting as an incentive to a permanent covenant uptake. Similarly, creation of conservation links with adjoining lands, as proposed by a few landholders, can join fragmented conservation areas thereby creating the desired size of the area that is necessary for the viable conservation of particular species.

3.3.6 Conclusion

The decision to take up a permanent covenant is characterised by several factors, which can be grouped under four main factors that include a strong conservation ethic and understanding of the value of conservation, minimal economic dependence on the land, and least motivation by economic gain, and an understanding and confidence in the covenant mechanism.

Landholders point out the need for various incentives at State and local government levels including the provision of tax incentives, strengthening of the review, and monitoring process of permanent covenants, and promotion of education and awareness of covenants. They also note the importance of consultation and collaboration concerning the conservation and covenant process, and provision of management support and advice on the implementation of nature conservation requirements under a permanent covenant.

It has been argued that in order for a permanent covenant to succeed in achieving its objective, various levels of collaboration with adjoining landholders, between conservation groups active in the area/region and between government institutions that have a role in

conservation on private land is necessary. A monitoring regime of the covenanted property is particularly necessary when there is change in land ownership even where a new owner is thought to be conservation minded.

The findings from this chapter have policy implications for promotion of permanent covenants among landholders who do not show any interest in long-term nature conservation, those that have strong economic dependence on their properties, and those that are unfamiliar with permanent covenants or unable to perceive their relevance and compatibility with their goals and plans for the land. Further discussion on these policy implications is carried out in Chapter 6.

The chapter that follows presents the findings of fixed-term agreement and fixed-term covenant holders in Victoria and Western Australia and their comparison with the findings in the present chapter.

CHAPTER 4

Fixed-term Covenant and Agreement

Research Findings and Preliminary Discussion

This chapter presents the study findings on fixed term agreement holders (Tcov Victoria) and fixed-term covenant holders (Tcov Western Australia). The first section presents a descriptive overview of the findings based on exogenous and endogenous variables (see Appendices 4.1 and 4.2 respectively) examined in this study. A comparison is made of the significant similarities and differences between the responses of landholders in Victoria and Western Australia to each key variable examined in the study.

The questions being addressed by this approach are whether there are variable attributes that are characteristic of the majority of landholders in each and both States in respect to landholders' likelihood of an uptake of permanent covenants. Presented in the first section are tests of association between selected independent variables and respondents' attitudes to a permanent covenant uptake as the dependent variable.

The second section presents the output of path analysis, based on selected variables in this study.

A synthesis of views and comments by respondents on the desired incentives for a permanent covenant uptake is presented in the third section.

A brief discussion of the main findings is presented in Section 4, focussing on the key factors in the decision of landholders on the uptake of permanent covenants in, and between the two States.

Section One: Result of the Descriptive Analysis

Introduction

The two conservation management agreement mechanisms represented by the two categories of landholders discussed in this chapter and detailed in chapter 1, are significantly different in type and functions. The fixed-term covenant practised in Western Australia under the Remnant Vegetation Protection Scheme is attached to the land title and binding on present and future owners of the land over the fixed duration of the covenant. However, the fixed-term agreement represented by the voluntary conservation agreement under Land for Wildlife (Fcov-Victoria) is non-binding and more informal in its application.

The hypothesis in this chapter is that there are no marked differences between Victoria and Western Australia in respect to landholders' socio-demographic situation, socio-economic situation, and various attitudes to nature conservation and permanent covenants. Further, there are no differences on the influence of the variables on landholders' attitudes to a permanent covenant uptake between the two states. The analysis will establish whether the possession of either of the two conservation management agreements in Victoria and Western Australia has marked differences on landholder's attitudes towards permanent covenant and their likelihood of taking up a permanent covenant. Furthermore, the analysis will help to establish the extent to which the characteristics of holders of the two different conservation agreements are similar or different from those of the majority of permanent covenant holders in Victoria.

The dependent variable used to assess landholders' likelihood of taking up a permanent covenant is their attitudes to a permanent covenant uptake, which was measured by their response to the statement "I would not consider a permanent covenant under any circumstance." The State government policies regarding nature conservation on private land are not markedly different between Victoria and Western Australia in so far as both states have similar policies in place that support the use of management agreements and incentives for conservation on private land. As such, an assumption is made in the comparison between the two States that any noted differences in landholders' attitudes to a permanent covenant uptake is the result of differences in the management agreement mechanisms in use rather than by differences in the impact of State or local government policies on landholders between the two States.

The methods used to collect and analyse the data reported in this chapter are contained in Chapter 2.

Table 2.3 in Chapter 2, shows that almost 51 percent return rate was achieved in Victoria from 210 dispatched questionnaires and 34 percent in Western Australia from a larger number (450) of dispatched questionnaires than Victoria.

4.1.1 Attitudes to permanent covenants uptake

Table 4.1 shows the proportion of respondents in Victoria and Western Australia by their attitude to a permanent covenant uptake. Landholders' attitudes to a permanent covenant uptake were used as the dependent variable in a test of statistical significance of the relationship with the independent variables in the present study.

Table 4. 1 Response on attitudes to covenant uptake among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: I would NOT consider entering a permanent covenant under any circumstance.				
	Vic		Western Australia	
Responses	Count	(%)	Count	(%)
St. Agree	10	5.3	21	15.1
Agree	18	9.5	13	9.4
Neutral	40	21.1	32	23.0
Disagree	36	19.0	34	25.2
St. Disagree	52	27.4	24	17.3
D/Know	34	17.9	14	10.1
Total	190*	100	139*	100

Note: The difference between the frequency counts and the total returned questionnaire is equal to number of non-responses to the questionnaire item.

Only 15 percent of the respondents in Victoria compared to 25 percent in Western Australia agreed they would not consider a permanent covenant under any circumstance. Almost half of the respondents in both States disagreed with the statement (see Table 4.1). Similarly, in both States, slightly more that 20 percent of respondents were neutral in response to the statement.

4.1.2 Summary of results of descriptive analysis

Tables 4.2 and 4.3 respectively, show summaries of the similarities and differences in questionnaire responses between fixed-term agreement holders (Victoria) and fixed-term covenant holders (Western Australia). Similarities were ascertained where there were a comparable majority of responses in a particular variable category or variable measurement in both States. Differences, on the other hand, were ascertained where the proportions in a similar variable response category or variable measurements between the two States were markedly

different. Survey results of the variables presented in these summaries are shown as Appendices 4.3 to 4.28.

Similarities and dissimilarities between the two States were observed in seventeen and twelve variables respectively. Summary of the statistically significant relationships between the independent variables and respondents' attitudes to a permanent covenant uptake, and their directional trends is provided in Table 4.4

4.1.3 Similarities in variable attributes between the States

The average age of the respondents did not differ between Victoria and Western Australia. There was also no statistically significant relationship between age and attitudes to a permanent covenant uptake among respondents in either State.

Similarities were noted between the two States in three exogenous variables: land tenure, conservation area ratio, and conservation feature types. The majority of properties in both States had total freehold tenure, conservation area to total land area ratio greater than ten percent, and native bush/forest as one of the conservation features. In both States also, most of the respondents had nature conservation as the primary reason for having retained the nature conservation features on their properties. Neither land tenure type nor conservation area ratio nor the conservation features on the land had a statistically significant relationship with landholders' attitudes to a permanent covenant uptake.

Large proportions of respondents in both States had not made any inquiry about permanent covenants. Statistically significant relationships were observed in Victoria and Western Australia showing those that had made inquiry about permanent covenants as more likely to have a positive attitude to a permanent covenant uptake than those that had not made enquiries. Both States had equal proportions of respondents that knew versus those that did not know about a permanent covenant before taking up a fixed-term conservation scheme. A significant relationship between level of knowledge about permanent covenants and attitudes to a permanent covenant uptake was only observed in Western Australia. Respondents with more knowledge about permanent covenants were more likely to have a positive attitude to a permanent covenant uptake than those with little knowledge of it.

Both States had relatively similar proportion of respondents that did not know or were neutral on whether permanent covenants are more effective for long-term conservation over other conservation mechanisms. Similarly, both States had relatively similar proportions of those that did not perceive the benefits of a permanent covenant. Neither of the two States had a significant relationship between respondents' perception of a permanent covenant's effectiveness for long-term nature conservation over other conservation mechanisms and their

attitudes to a permanent covenant uptake. However, a significant relationship was observed in both States between respondents' perceptions of the benefits of a permanent covenant and their attitudes to permanent covenant uptake. Landholders that perceived the benefits of a permanent covenant were more likely to have a positive attitude to a permanent covenant uptake than those that did not perceive the benefits.

Large proportions of respondents in Victoria (58%) and Western Australia (49%) did not mind restrictions on land-use. A significant relationship between the respondents' attitudes to restrictions on land-use and attitudes to a permanent covenant uptake was observed in both States, showing increasing acceptance of restrictions on land-use to correspond to increased likelihood of respondents' positive attitude to a permanent covenant uptake.

Other similarities in the results show that majority of respondents in Victoria and Western Australia did not receive any financial support for conservation work before taking up a fixed-term covenant or fixed-term agreement. In addition, the majority of respondents in both States intend to retain management and ownership of their properties in the family in the future. There were no significant relationships between respondents' attitudes to a permanent covenant uptake and their reception of financial support, or anticipation of retention of management or ownership of property in the family in either State.

Table 4.2 Summary of similarities in the results of the descriptive analysis between fixed term agreement holders in Victoria and fixed term covenant holders in Western Australia

Variables	Attributes	Victoria	Western Australia
		Results are in % unless indicated otherwise	
Age distribution in years.	Average age of respondents	51.5 yrs	50.5 yrs
Property tenure type.	100 percent freehold	88	87
Percentage ratio of conservation to total property size.	Conservation ratio greater than 10 percent	70	58
Types of conservation features (Appendix 4.4)	Native bush/ forests	85	95
Primary reason for retaining nature conservation features on property (Appendix 4.7)	To support wildlife conservation	70.1	5.1
	To support native vegetation	27.3	60
Knowledge about permanent covenant before entering a fixed-term agreement or covenant (Appendix 4.5)	Knew about permanent covenant before entering a fixed-term agreement or covenant	50	50
Inquiry about permanent covenants.	Have not made inquiry about permanent covenant	82	85
Attitudes to imposed restrictions of land-use (Appendix 4.8)	Do not mind restrictions on land-use	58	49
Effectiveness of permanent covenants over other mechanisms (Appendix 4.10)	'Don't know' or 'Neutral' regarding effectiveness of permanent covenant	50	47
Perceptions of the benefits of a permanent covenant (Appendix 4.12).	Do not perceive benefits of a permanent covenant	47	41
Perception of a permanent covenants impact on land value (Appendix 4.9)	Evenly distributed proportions in both States between the response categories; 'agreed' (1/3rd), 'disagreed' (1/3rd) and 'neutral/don't know' (1/3rd)		
Reception of financial support before uptake of fixed-term agreement or covenant (Appendix 4.159)	Did not receive any financial support for conservation.	81	71
Future retention of property ownership in family (Appendix 4.18)	Intended to retain ownership.	68	80
Future retention of property management in family (Appendix 4.18)	Intended to retain management.	67.4	78
Association with conservation groups (Appendix 4.20)	Affiliated to one or two groups	100	75.4
	Not affiliated to any group	Nil	14
Importance of increased public recognition as pre-requisite for permanent covenant uptake (Appendix 4.22)	Attached a level of importance	49.5	45.7
Importance of ongoing financial support as pre-requisite for a permanent covenant uptake (Appendix 4.24)	Attached a level of importance	54	62.4
Attitude to equity in cost of permanent covenant uptake (Appendix 4.27).	Agreed that public should cover cost of permanent covenant uptake.	62.5	80.7

Similarities between the two States were also observed in respect to association with conservation groups: most respondents in Western Australia and all respondents in Victoria had an association with at least one conservation group. Nevertheless, individual respondents in Victoria were associated with more conservation groups than were the respondents in Western Australia.

The relationship between association with conservation groups and respondents' attitudes to a permanent covenant uptake was statistically significant only in Victoria. The more conservation groups a subject was associated with, the greater was the likelihood they had a positive attitude to a permanent covenant uptake.

Almost half of the respondents in both States gave importance to increased public recognition as a pre-requisite for a permanent covenant uptake. In addition, between a quarter and a third of the respondents in both States viewed non-financial recognition of their conservation efforts by State and Local Governments as a significant motivator for their uptake of a permanent covenant. Clearly, non-financial incentives had acceptance among a relatively large proportion of landholders in both States, with Victoria having a slightly higher proportion than Western Australia. Nevertheless, there were no significant relationships between either of the variables and attitudes to a permanent covenant uptake in either State.

The large majority of the landholders in both States gave importance to provision of ongoing financial support for conservation work, thus confirming the greater popularity of financial over the non-financial incentives. Similarly, most respondents in both States agreed that the covenantor should cover the cost of taking up a permanent covenant. However, of the two States, Western Australia had a bigger proportion of respondents that held that view. There were no statistically significant relationships between respondents' attitudes to a permanent covenant uptake *per se* and their requirement for on-going financial support or their attitudes to the covering of costs of taking up a permanent covenant in either State.

A moderately large proportion of respondents in Victoria and a large proportion in Western Australia gave importance to non-financial recognition and financial support as incentives for covenant uptake. The proportions of respondents that perceived a loss in land, did not perceive a loss, and were neutral about the possible loss in land value because of a permanent covenant, were comparable between the States. Statistically significant relationships between respondents' perception of a permanent covenant's impact on land's value and their attitudes to a permanent covenant uptake were observed in both States. Landholders that did not perceive a loss in land value because of placing a permanent covenant on it were more likely to have a positive attitude to a permanent covenant uptake than those that perceived a loss in land value.

4.1.4 Differences in variable attributes between the States

Significant differences were observed between the two States in respect to the following exogenous variables. Average size of properties in the two States differed significantly with Western Australia having much larger average size (2897 ha) compared to Victoria (185.6 ha). Despite these differences, there was no statistically significant relationship between property size and respondents' attitudes to a permanent covenant uptake in either State.

Length of time that the properties had been in the family also differed significantly between the two States: the majority of respondents in Victoria had property in the family ownership for more than 40 years compared to only 14 percent of respondents in Western Australia over. Difference between the two States was also noted in the farm types. Although 'cropping/sheep' was the main farm-type in the majority of properties in Western Australia, no one farm-type was practised by a majority of respondents in Victoria. Again, in both States no significant statistical relationships were observed between length of property ownership in family or farm-types and respondents' attitudes to a permanent covenant uptake.

Whereas more than a third of respondents in Western Australia entered a fixed-term covenant on their property in order to receive support or permit, only four percent of respondents in Victoria did so for a similar reason. A statistically significant relationship between the reasons for having entered a fixed term agreement or fixed term covenant and attitudes to a permanent covenant uptake was only observed in Western Australia. The relationship showed that those who entered into a fixed-term covenant because it was a requirement were more likely to have a negative attitude toward a permanent covenant uptake than those that entered it voluntarily.

Four variables related to socio-economic characteristics of the respondents illustrated further contrasts between the two States: The majority of respondents in Victoria in contrast to those in Western Australia had significantly lower total annual income, were less economically dependent on their property, had no debt on the property, and they had a lower labour commitment on the property.

Table 4.3 Summary of differences in the results of the descriptive analysis between fixed-term agreement holders in Victoria and fixed-term covenant holders in Western Australia

Variables	Attributes	Victoria	Western Australia
		Results are in % unless indicated otherwise	
Property size in hectares	Average area of properties in hectares	185.6 ha	2897 ha
	Proportion of properties with less than 100 ha or greater than 1000 ha.	80% < 100 ha	83.5% >1000ha
Reasons for having entered a fixed-term agreement or covenant.	In order to receive support or permit from government	4	36
Length of time property has been in family (Appendix 4.3)	Over 40 years.	59	14
Desire to know more about permanent covenants (Appendix 4.6).	Would like to know more about permanent covenant	56	38.5
Total annual income in 1999 (Appendix 4.13)	A$75,000 or less	65.5	29
	More than A$ 150,000	11.2	62
Labour commitment on property (Appendix 4.14)	Labour commitment score in points	63.3% had 2 or less points.	62.6% had 9 or more points
Debt on property in year 2000 (Appendix 4.16)	No debt on property	54	35
	Debt of A$300,000-500,000	3.6	33
Economic dependence on property (Appendix 4.17)	No income from property	60.2	8.4
	Over 90% income from property	11.4	63.4
Interest in long-term nature conservation (Appendix 4.23)	Attached a level of importance to permanent covenant's assurance of long-term conservation than other mechanisms.	75.4	40.2
Influence of non-financial incentives on covenant uptake (Appendix 4.25)	Disagree non-financial incentive can significantly motivate permanent covenant uptake.	30.2	46.8
Compensation for non-use of land under a permanent covenant (Appendix 4.26)	Would take-up permanent covenant if there were compensation for non-use of land.	36	53.5
Expectation of equity and level of public responsibility in private conservation (Appendix 4.28)	Prefer more than 40% of cost to be covered by the public.	30	58
	Prefer nil contribution by public to cost of private conservation.	47.3	22.7

The ratio of conservation area to total area of the property also differed between Victoria and Western Australia. Approximately 13 percent of the respondents in Victoria had their entire property under nature conservation, and almost 70 percent of the properties had more than ten percent nature conservation cover. In contrast, only nine percent of respondents in Western Australia had more than a quarter of their property under nature conservation, while 58 percent of them had less than ten percent of their property under nature conservation. Nevertheless, there were no statistically significant relationships between the ratio of conservation area to total area of the property and respondents' attitudes to a permanent covenant uptake in either State.

Whereas the majority of respondents in Victoria expressed the desire to know more about permanent covenants, most respondents in Western Australia did not. Moreover, the majority of respondents in Victoria attached a level of importance to the ability of a permanent covenant to assure the long-term conservation of nature over other mechanism, whereas less than half of respondents in Western Australia attached such importance. The obvious reason landholders require such an assurance for long-term nature conservation from a permanent covenant is their interest long-term nature conservation.

A reversal in the popularity of non-financial incentives and financial compensation for covenant uptake between Victoria and Western Australia was observed in the study findings. Almost half of the respondents in Western Australia disagreed that non-financial incentives could motivate their uptake of a permanent covenant compared to slightly less than a third in Victoria. However, in respect to compensation, the majority of respondents in Western Australia and slightly over a third in Victoria stated they would take up a permanent covenant if compensation were offered.

Table 4.4 Statistically significant relationships between attitudes to permanent covenant uptake and independent variables for fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Variable/Probability significance		Trend in the variables relationship
Victoria	Western Australia	
Reasons for entering a fixed-term agreement or covenant		*Entry into a fixed-term agreement/ covenant because it was a requirement corresponds to likelihood to have a negative attitude toward a permanent covenant uptake*
NS	p=0.022, d=-0.224	
Knowledge about permanent covenants		*Increasing knowledge of permanent covenants corresponds to increased likelihood to have a positive attitude to a permanent covenant uptake.*
NS	p=0.030, d=0.143	
Desire to know more about permanent covenants		*Desire to know more about permanent covenants corresponds to increased likelihood to have a positive attitude to a permanent covenant uptake.*
p=0.001, d= 0.260	p=0.025, d=0.229	
Inquiry about permanent covenants		*Having inquired about covenants corresponds to increased likelihood of a positive attitude to a permanent covenant uptake.*
p=0.002 d=0.35	p=0.001, d=0.431	
Attitudes to imposed restrictions on land-use		*Increasing acceptance of permanent restrictions corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake.*
p=0.000, d= 0.350	p=0.000; d= 0.276	
Perception of the benefits of a permanent covenants		*Increasing perception of covenant benefits corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake.*
p= 0.000, d= 0.226	p= 0.001, d= 0.217	
Perceptions of the impact of permanent covenants on land value		*Increasing perception of loss in land value corresponds to an increasing likelihood of a negative attitude to a permanent covenant uptake*
p=0.034, d=-0.136	p=0.000, d=-0.298	
Level of financial debt on property		*Decreasing debt on the property corresponds to an increasing likelihood for a positive attitude to a permanent covenant uptake*
NS	p=0.038, d= -0.139	
Affiliation or association with conservation groups		*Increasing number of association or affiliation with conservation group corresponds to increasing likelihood for a positive attitude to a permanent covenant uptake*
χ^2(5, n=180)= 16.250; p=0.006	NS	
Interest in long-term nature conservation		*Increasing interest in long-term nature conservation corresponds to increasing likelihood of a positive attitude to a permanent covenant uptake*
p=0.000, d= 0.297	NS	
Attitude to compensation for permanent covenant uptake		*Decreasing importance given to compensation corresponds to increasing likelihood for a positive attitude to a permanent covenant uptake*
p=0.005, d= -0.168	NS	

Note: p= alpha p-value; d= Somers'D value; χ^2 = Chi-square; NS= statistically non significant relationship; significant trends in the variable relationships are shown in italics

Another contrast between the States was that the majority of respondents in Western Australia and less than a third in Victoria preferred the public to cover more than 40 percent of the nature conservation cost on private land. In addition, almost a half of the respondents in Victoria, and less than a quarter of those in Western Australia preferred the public not to contribute. Evidently, the expectation of public contribution to the cost of conservation on private lands was much less in Victoria than in Western Australia. Despite the observed contrast between the two States, there was no significant relationship between expectation of public contribution to conservation on private land and the respondents' attitudes to a permanent covenant uptake in either State.

4.1.5 Observations of other variables included in the descriptive analysis

More than a third of respondents in Victoria (46.5 %) and Western Australia (35.4 %) agreed it was necessary for the organization that manages the permanent covenant to be independent of Government. Half of the respondents in Victoria and close to half of those in Western Australia were neutral or did not know their preference in relation to the statement (see Appendix 4.11). No statistically significant relationship was observed between respondents' preference over a covenanting agency's affiliation with government and their attitudes to a permanent covenant uptake.

An assessment was carried out to establish the relationship between attitudes to compensation for a permanent covenant uptake as the dependent variable and other independent variables in the study. Statistically significant relationships were established in Western Australia between the dependent variable and respondents' interest in long-term nature conservation ($p=0.04$, $d=-0.126$), and their requirement for on-going financial support as a pre-requisite for a permanent covenant uptake ($p=0.01$, $d=0.281$). Significant relationships were established in Victoria between the independent variables 'association/affiliation with conservation groups' ($p=0.05$, $d=-0.129$) and respondents' 'interest in long term nature conservation' ($p=0.04$, $d=-0.147$).

Landholders that required financial support as a pre-requisite for uptake of a permanent covenant in Western Australia were more likely to give importance to reception of compensation for a covenant uptake than others were. In addition, landholders who had a strong interest in long-term nature conservation in Victoria and Western Australia were less likely than others were to give importance to the reception of compensation for uptake of a covenant. Lastly, the greater the number of affiliations/associations with conservation groups that landholders in Victoria had, the less likely they were to give importance to reception of compensation for a covenant uptake than were others.

There was no conclusive evidence of the influence of neighbours or friends on landholders' attitudes to a permanent covenant uptake. Nevertheless, a proportion of landholders who stated they would be influenced to take up a permanent covenant by neighbours or friends in both States confirmed this factor's role in influencing actual permanent covenant uptake. Such influence was, however, more widespread in Victoria than in Western Australia.

There was no conclusive evidence of an influence of perceptions of the effectiveness of permanent covenants over mechanisms on attitudes to the uptake of a permanent covenant among fixed-term agreement holders and fixed-term covenant holders.

The relationships between several independent variables included in the study and landholders' attitudes to a permanent covenant uptake (the dependent variable) were not statistically significant, thus confirming lack of conclusive evidence of their influence on attitudes to a permanent covenant. These variables are shown in Table 4.5.

Table 4. 5 Independent variables with statistically non-significant relationship with attitudes to a permanent covenant uptake (the dependent variable) among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents.

Variables	Measured attribute
Long term goal for retention of ownership	Anticipation of retention of ownership of property in family
Long term goal for retention of management	Anticipation of retention of management of property in family
Attitudes to non financial recognition	Strength of acceptance of non-financial incentives for permanent covenant uptake
Influence of association with neighbours or friends on permanent covenant uptake	Level of influence of neighbours or friends on covenant uptake
Influence of non-financial incentives on permanent covenant uptake	Attitude to non-financial incentives as motivators of a permanent covenant uptake
Perception of effectiveness of permanent covenant over other mechanisms for long-term nature conservation	Strength of agreement about permanent covenant's effectiveness for long-term nature conservation over other conservation mechanisms
Necessity of financial support as incentive for permanent covenant uptake	Level of importance given to financial support as incentive for permanent covenant uptake
Equity requirement in cost of permanent covenant uptake	Expectation by respondents regarding coverage of cost by covenantors in permanent covenant uptake
Equity requirement in cost of private conservation.	Expected level of public contribution to cost of nature conservation on private lands

4.1.6 Summary and Conclusion

The purpose of Section 1 has been to establish the similarities and differences between fixed-term agreement and fixed-term covenant holders in Victoria and Western Australia respectively in terms of proportions of responses and the statistical significance of trends in the relationship between the assessed variables and landholders' attitudes to a permanent covenant uptake.

The two States primarily differ in proportions of responses in relation to socio-economic attributes, level of interest in long-term nature conservation, level of influence of non-financial incentives, compensation on permanent covenant uptake, and on their expectation of equity in the cost of private conservation. The variables that draw out differences between the two States in relation to influence on attitudes to a permanent covenant uptake include; reasons for having entered a fixed term covenant or agreement, the level of debt, interest in long-term nature conservation, attitudes to compensation for non-use of land under a permanent covenant, and association with conservation groups.

Comparison can be made between the two States of three exogenous variables, namely; land tenure, conservation area ratio, and conservation feature types. Non-financial incentives had acceptance among a relatively large proportion of landholders in both States, with a slightly larger proportion in Victoria than Western Australia. The bivariate relationships observed between individual independent variables and attitudes to a permanent covenant uptake in the two States highlight the individual variables that influence landholders' attitudes to permanent covenant uptake in the absence of, or blocking of, other factors in the different States. However, in reality variables rarely influence the dependent variable independently of other variables. In this regard, further review of the collective influence of the independent variables in this study on the dependent variable 'attitudes to a permanent covenant uptake' is reported in Section 2. A multivariate regression analysis, specifically a path analysis, is used to demonstrate the collective variable relationships. Details of the procedures followed in the path analysis are described in Chapter 2.

Section Two: Results of Path Analysis

Introduction

This section presents the results of path analysis for respondents with a fixed-term agreement in Victoria and those with a fixed-term covenant in Western Australia. The predictor and mediator variables included in the hypothesized path model are shown in Figure 2.1 in Chapter 2 and tabulated in Tables 2.4 and 2.5 respectively.

All variables were initially regressed from the output (dependent) variable 'attitudes to a permanent covenant uptake' to provide the initial path model. Subsequent regressions of the predicted variable on each of the mediator variables retained in the initial path model were carried out. A final (output) path model was constructed from the regression of all variables retained in the model from previous regressions, on the output variable 'attitudes to a permanent covenant uptake'. Details of the method used in the path analysis are outlined in Chapter 2.

4.2.1 Fixed-term conservation agreement, Victoria (Land for Wildlife Scheme)

Table 4.6 shows the path coefficients of the four variables (predictors) retained in the path model after the initial regression of 20 variables (see Chapter 2: Table 2.4 and 2.5) that were hypothesised to have an effect on fixed-term agreement (Victoria) landholders' attitudes to a permanent covenant uptake. The expansion of the abbreviations for all variables used in this section is shown in Chapter 2.

Table 4.6 Coefficients of the predictor variables of attitudes to a covenant uptake in the first regression output for fixed-term agreement (Victoria) respondents

Retain variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.754	.400		4.382	.000	.964	2.544
Con_interest.	.197	.070	.185	2.800	.006	.058	.335
Membership	.166	.085	.123	1.946	.050	-.002	.334
Restrictions.	.304	.055	.376	5.544	.000	.196	.412
Benefits	.125	.048	.167	2.623	.009	.031	.219

a. dependent variable: attitudes to a permanent covenant uptake.

Table 4.7 shows the coefficients of two variables: Con_interest (0.306), and Membership (0.173), which were retained in the path model after regressing the hypothesised predictor variables (see Figure 2.1) on the mediator variable 'restrictions'. The Beta (β) values presented in the standardized coefficients column represent the standardised regression

coefficients between 'attitudes to a permanent covenant uptake'. The effect of 'Con_interest' on the dependent variable was significant bigger than that of 'Membership'.

Table 4.7 Coefficient predictors for attitudes to restrictions of a permanent covenant (fixed-term agreement- Victoria)

Retain variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.325	.433		3.060	.003
Con_interest	.406	.092	.306	4.402	.000
Membership	.291	.117	.173	2.489	.014

a. dependent variable: attitudes to restrictions on land-use.

Table 4.8 presents the coefficient of two variables (Knowledge and Value_loss) which were retained in the path model after regressing from the mediator variable 'Benefits' the hypothesized predictor variables for 'perceptions of covenant benefits (see Figure 2.1). Of the two variables, 'Value-loss' had the bigger effect on respondents' perceptions of the benefits of a permanent covenant.

Table 4.8 Coefficient predictors for perception of benefits of a permanent covenant (fixed-term agreement (Victoria))

Retain variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.893	.316		9.148	.000
Knowledge	.227	.095	.166	2.388	.018
Value_loss	-.295	.065	-.316	-4.543	.000

a dependent variable: perception of permanent covenant benefits.

Two variables, 'Knowledge' and 'ConRatio', were predicted to have an effect on landholders' perceptions of impact of covenant on land value (see Figure 2.1). Both variables were retained in the path model as shown in Table 4.9, after regressing them from the mediator variable 'Value_loss'. Their coefficients show 'ConRatio' had a bigger effect (0.205) on respondents' perceptions of loss in land value than 'Knowledge' (-0.145).

Table 4.9 Coefficient predictors for perception of loss in land value (fixed-term agreement (Victoria)

Retain variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	3.697	.250		14.772	.000
Knowledge	-.212	.105	-.145	-2.021	.045
ConRatio	9.736E-03	.003	.205	2.853	.005

a. dependent variable: perception of loss in land value.

Figure 4.1 illustrates the final path model for respondents with a fixed-term agreement (Victoria) after a regression of all variables retained in the models of previous regressions on the output variable 'attitudes to a permanent covenant uptake' (i.e. initial regression from the output variable and subsequent regressions from the retained mediator variables).

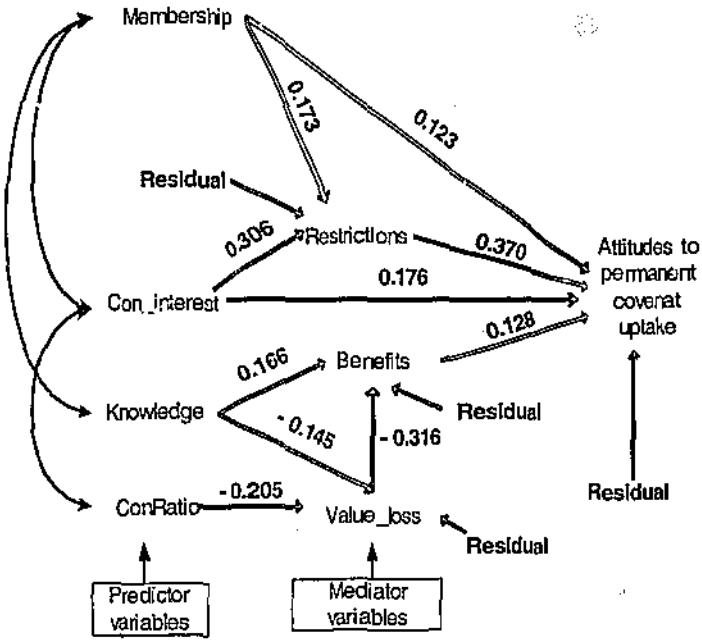


Figure 4. 1 Final (Output) Path model for landholders with a fixed-term agreement (Victoria)

Note: Straight line= variable effects; and curved lines= variable correlations

The estimated regression coefficients for the final model and the correlations between the variables entered in the model are shown in Appendices 4.29 and 4.30 respectively.

Four variables have a direct effect on landholders' attitude to a permanent covenant uptake: 'Restrictions', 'Con-interest', 'Benefits', and 'Membership' (see Figure 4.1). 'Membership' and 'con-interest also have an indirect effect on attitudes to a permanent covenant uptake, in both cases mediated through 'Restrictions'. Another three variables have only indirect effect: 'Value-loss', 'ConRatio', and 'Knowledge'.

A summary of the relative strengths of the total effect of the variable retained in the final model is shown in Table 4 10. Landholders' attitudes to restrictions on land-use have the largest effect, while the level of knowledge about permanent covenants has the smallest total effect.

Table 4. 10 Relative strength of the total influence of predictor variables' in the output path models on attitudes to a permanent covenant uptake among fixed-term agreement holders in Victoria

	Victoria	
Decreasing strength of influence	Variable	Coefficient value
1	restrictions	0.370
2	Con_interest	0.289
3	membership	0.187
4	benefits	0.128
5	Value_loss	-0.126
6	ConRatio	0.091
7	knowledge	0.021

The directions of the coefficients (see Figure 4.1) indicate that the greater the number of conservation organisations to which a respondent was affiliated (membership), or the stronger the interest in long-term nature conservation (Con_interest), the more likely for respondent to have a positive attitude to permanent covenant uptake. In addition, the indirect effects of 'membership' and 'con interest' on attitudes to a permanent covenant uptake show that the greater the number of conservation organisations to which a respondent was affiliated, or the stronger the interest in long-term nature conservation the more likely they were to have a positive attitude to imposed restrictions on land-use. This would lead to increased likelihood of a positive attitude to a permanent covenant uptake.

Increase in knowledge about permanent covenants corresponded to increased likelihood of a greater perception of the benefits of a permanent covenant and consecutively to an increased likelihood of a positive attitude to a permanent covenant uptake. In addition, the bigger the ratio of conservation area to total land area, the less likely landholders were to

perceive permanent covenant to lead to loss in land value, and consecutively the more they perceived the benefits of a permanent covenant. This sequentially led to greater likelihood of a positive attitude to a permanent covenant uptake.

The coefficient table (Appendix 4.29) shows that only three variables; 'Con_interest' 'membership' and 'restrictions' were significant at p=0.05 in predicting the landholders' attitudes to the uptake of a permanent covenant.

Table 4.11 shows the summary of the final model and the amount of variance that was shown in it. 32.7 percent of the variance was explained in the final path model. The outcome of an analysis of variance carried out to test the fit of the final model (see Table 4.12) confirm a statistically significant model fit with an F statistic of 13.401 at p=0.01. The independent variables therefore perform relatively well in explaining the variation in the dependent variable 'Attitudes to a permanent covenant uptake'.

Table 4.11 Path Model Summary (fixed-term agreement (Victoria))

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.594	.353	.327	.94	.353	13.401	7	172	.000

a. predictor variables: (constant), benefits, ConRatio, membership, Knowledge, Con_interest, Value_loss, restrictions.
b. dependent variable: attitudes to a permanent covenant uptake.

Table 4.12 Path Model ANOVA (fixed-term agreement (Victoria))

	Sum of Squares	df	Mean Square	F	Sig.
Regression	82.160	7	11.737	13.401	.000
Residual	150.640	172	.876		
Total	232.800	179			

a. predictor variables: (constant), benefits, ConRatio, membership, knowledge, Con_interest, Value_loss, restrictions.

b. dependent variable: attitudes to a permanent covenant uptake.

4.2.2 Fixed-term conservation covenant (Remnant Vegetation Protection Scheme, Western Australia)

The variable coefficients of the first regression analysis for fixed-term covenant (Western Australia) respondents using 'attitudes to a covenant uptake' as the dependent variable are shown in Table 4.13. Only three of the predicted variables (see Figure 2.1) were retained in the model with a statistically significant effect on the dependent variable.

Table 4.13 Coefficients table for the first regression analysis for fixed-term covenant (Western Australia)

Retain variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.751	.417		4.195	.000	.925	2.576
Restrictions	.285	.072	.306	3.975	.000	.143	.427
Benefits	.222	.071	.239	3.113	.002	.081	.364
Value_loss	-.156	.060	-.201	-2.608	.010	-.274	-.038

a. dependent variable: attitudes to permanent covenants uptake

Table 4.14 shows the regression output of three significant variables, 'Con_interest' 'Value_loss' and 'ConRatio', which were retained in the path model after regressing all variables that were predicted to have an effect on 'restrictions' as the dependent variable (see Figure 2.1).

Table 4.14 Coefficient predictors for attitudes to restrictions of a permanent covenant (fixed-term covenant (Western Australia))

Retained variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.816	.377		7.474	.000	2.071	3.561
Con_interest	.315	.067	.366	4.719	.000	.183	.447
Value_loss	-.159	.066	-.190	-2.413	.017	-.289	-.029
ConRatio	-2.073E-02	.009	-.186	-2.370	.019	-.038	-.003

a. dependent variable: attitudes to restrictions on land-use.

The two variables shown in Table 4.15 were retained in the path model after regressing from 'benefits' as the dependent variable the hypothesized predictor variables (see Figure 4.1) from 'perceptions of the benefits of a permanent covenant'. Of the retained variables, 'Knowledge' (0.230) had the larger effect on respondents' perceptions of the benefits of a permanent covenant.

Table 4.15 Coefficient predictors for perception of the benefits of a permanent covenant (fixed-term covenant (Western Australia))

Retained variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.063	.396		5.211	.000	1.280	2.846
Knowledge	.176	.063	.230	2.774	.006	.050	.301
Con_interest	.147	.071	.170	2.058	.042	.006	.288

a. dependent variable: perception of permanent covenant benefits.

The final path model for fixed-term covenant (Western Australia) respondents illustrated in Figure 4.2 was derived from estimated regression coefficients (see Appendix 4.31) and the correlations between variables (see Appendix 4.32). Three variables had a direct effect on the landholders' attitudes to a permanent covenant uptake: 'Benefits', 'Restrictions', and 'Value-loss'. In addition, 'Value-loss' had an indirect effect on landholders' attitudes to a permanent covenant uptake, which was mediated through 'Restrictions'. Three variables: 'ConRatio', 'Con-interest' and 'Knowledge', only had indirect effects on landholders' attitudes to a permanent covenant uptake (Figure 4.2).

The effect of respondents' interest in long-term nature conservation on attitudes to restrictions on land-use (0.366) was bigger than its effect on respondents' perceptions of the benefits of a permanent covenant, and twice as big as that of the ratio of conservation area to total land area (0.186) on attitudes to restrictions on land-use.

The directions of the regression coefficients show that the greater the interest in long-term nature conservation the greater the likelihood of landholders to perceive covenants to have benefits, and the greater the likelihood that they do not mind restrictions on land-use. In turn, the greater the subjects perceived covenants to have benefits or the more they did not mind restrictions of land-use, the more likely they were to have a positive attitude to the uptake of a permanent covenant. Similarly, the greater the level of knowledge a landholder had about permanent covenants, the more likely they were to perceive covenants to have benefits over other mechanisms and, in turn, the more likely they were to have a positive attitude to a covenant uptake.

As the ratio of conservation area to total land area increases, landholders' perception of loss in land value was more likely to decrease, and they were likely to have a more positive attitude to restrictions on land-use. In turn, decreasing perception of loss in land value, and more positive attitude to restrictions were more likely to lead to a positive than negative attitude to a permanent covenant uptake.

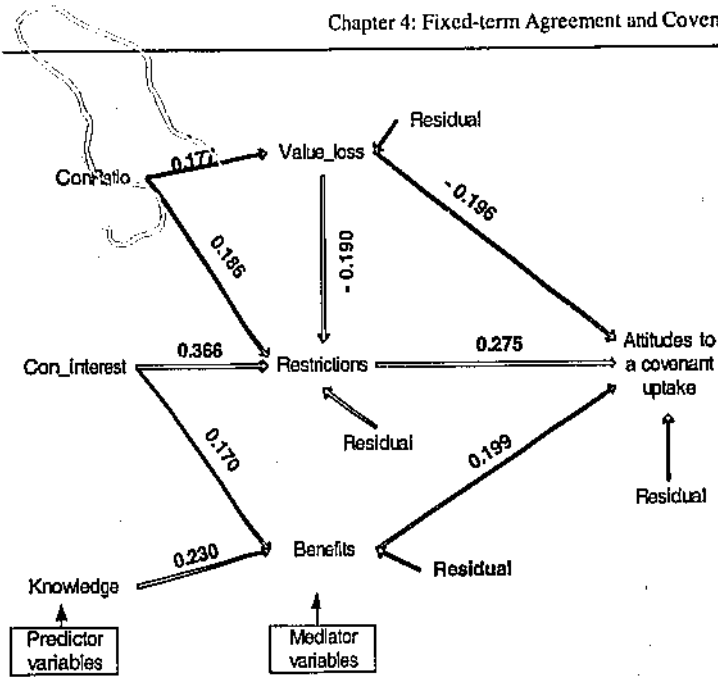


Figure 4. 2 Final (Output) Path model for fixed-term covenant landholders in Western Australia

A summary of the relative strength of total effect of the variable retained in the final model is shown in Table 4 16. Similar to fixed-term agreement holders in Victoria, of the explanatory variables in the final model, landholders' attitudes to restrictions on land-use have the largest effect, while the level of knowledge about permanent covenants has the smallest total effect.

Table 4. 16 Relative importance of predictor variables' total influence in the output path models on attitudes to a permanent covenant uptake among fixed-term covenant and agreement holders in Victoria and Western Australia.

	Western Australia	
Decreasing strength of influence	Variable	Coefficient value
1	restrictions	0.275
2	Value_loss	-0.248
3	ConRatio	0.230
4	Con_interest	0.222
5	benefits	0.199
6	knowledge	0.158

The final model shown explains only 25 percent of the variance (Table 4.17). Nevertheless, there is a good model fit with an F statistic of 8.52 that was significant at p=0.001 despite the low explained variance, as shown in Table 4.18.

Table 4.17 Path Model Summary (fixed-term covenant (Western Australia))

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.531	.282	.249	1.10	.282	8.518	6	130	.000

a. predictors: (constant), benefits, restrictions, knowledge, V.lue_loss, Con_interest, ConRatio
b. dependent variable: attitude to permanent covenant uptake.

Table 4.18 Path Model ANOVA (fixed-term covenant (Western Australia))

	Sum of Squares	df	Mean Square	F	Sig.
Regression	61.818	6	10.303	8.518	.000
Residual	157.247	130	1.210		
Total	219.066	136			

a. predictors: (constant), benefits, restrictions, knowledge, Value_loss, Con_interest, ConRatio
b. dependent variable: attitude to permanent covenant uptake.

4.2.3 Summary and conclusions

The order of importance of individual variables, in terms of their effect on landholders' attitudes to uptake of a permanent covenant, shows that their attitudes to restrictions on land-use rated highest and their level of knowledge about permanent covenants rated lowest in both Victoria and Western Australia.

The main differences between the two States were the order of strength of the model variable influences on attitudes to a permanent covenant uptake. Although in both States landholders' attitudes to restrictions were the factor with the greatest influence, a unit change in attitudes to restrictions yields a smaller change in attitudes in Western Australia than in Victoria. A unit change in interest in long-term nature conservation had a significantly larger magnitude of change on landholders' attitudes to a permanent covenant uptake in Victoria than in Western Australia. Conversely, a unit change in perceptions of the benefits of a permanent covenant had a significantly larger magnitude of change on landholders' attitudes to a permanent covenant uptake in Western Australia than in Victoria.

The final path model for fixed-term agreement (Victoria) explained a relatively moderate proportion of the variance. The path model for Victoria (R^2 adj= 0.327) explained more of the variance than that of Western Australia (R^2 adj=0.249). Nevertheless, all mediator variables in the final path model for Western Australia were statistically significant as direct predictors of landholders' attitudes to a covenant uptake at 95 percent confidence level.

Despite the explained relationships between the mediator variables and landholders' attitudes to a permanent covenant uptake by the predictor variables, much of the variance in several of the relationships was unaccounted for as noted by the residuals. The section that follows contains the results of qualitative information gathered from landholders. It is aimed at providing further explanation of the unaccounted variances in the path model as well as to present the views of landholders on the necessary incentives from Local and State Governments for encouraging the uptake of permanent covenants.

Section Three: Results of Qualitative Analysis

Introduction

This section contains a summary content analysis of written comments by the fixed-term agreement (Victoria) and the fixed-term covenant (Western Australia) respondents on the actions and policies that the State and local governments should put in place to encourage private landholders to take up a permanent covenant in Victoria and Western Australia. The procedure used in the qualitative analysis is reported in Chapter 2.

The aim of this section is to establish further the necessary incentive measures for promoting the uptake of permanent covenants and to tease out further explanations of the relationships and unaccounted variance in the path analysis models for respondents in Victoria and Western Australia. The detailed content on which these summaries were based is presented in Appendices 4.33 to 4.37.

4.3.1 Views of Fixed-term agreement (Victoria) landholders on the State Government policies or actions as incentives

Fixed-term agreement holders in Victoria (see Table 4.19 and detailed table in Appendix 4.33) for motivating landholders' voluntary uptake of permanent covenants recommended eight actions and policy directions by State government. The largest number of respondents cited 'economic and financial assistance' followed by 'provision of information and awareness about permanent covenants'.

Table 4.19 Views of fixed-term agreement (Victoria) respondents on the State Government policies or actions as incentives for permanent covenant uptake

Incentive group (Total number of respondents)	No. of respondents	Desired action
Economic and Financial incentives (69)	52	Financial assistance and subsidies
	17	Tax incentive
Information and awareness (34)	28	Information and awareness on covenants
	6	Enlist public participation
Technical support and advice (29)	14	Advice
	8	Support weed and vermin and fire control
	4	Assist with material
	3	Labour support
Policy and Legal arrangements (17)	17	Enact legislation and enforce regulations
Compensatory measures (15)	15	Financial compensation
Recognition (9)	9	Recognition and encouragement
Leadership (8)	8	Lead by example
Organizational and administrative arrangements (8)	5	Reduce bureaucracy
	2	Assurance about covenant
	1	Mediation

4.3.2 Views of Fixed-term agreement (Victoria) landholders on the Local Government policies or actions as incentives

Nine actions and policy directions are shown in Table 4.20 (see detailed table in Appendix 4.34) and were cited by respondents on what local governments should do to motivate landholders' voluntary uptake of permanent covenants. Similar to the recommendations given by landholders on the appropriate actions by State Government, the largest number of respondents cited economic and financial incentives in the form of rate rebates and financial assistance. Technical support was the second most popular incentive group. The support was requested for in respect to labour and machinery, as well as advice on conservation issues.

Appendix 4.35 shows the reasons cited by a small cross-section of respondents for their lack interest in permanent covenants. They include a perception of better alternatives to permanent covenants, self-confidence in their ability to conserve without a permanent covenant, mistrust of the governments' intentions, and lack of confidence in the effectiveness of covenants, and perception of interference caused by the covenant on their future goals and objectives for the land.

Table 4.20 Views of fixed-term agreement holders (Victoria) on the necessary policies or actions by local government as incentives for a permanent covenant uptake

Incentive group (Total number of respondents)	No of respondents	Desired action
Economic and Financial Incentives (69)	61	Rates rebate
	8	Financial assistance
Technical, labour support and advice (36)	20	Labour and machinery provision
	17	Advice and technical support
Information and Awareness (26)	10	Information on covenants
	16	Education and awareness
Policy and Legal arrangements (23)	11	Appropriate policies
	12	Enforcement of regulations
Conservation leadership and management (21)	9	Conservation leadership
	12	Proactive support for conservation
Recognition and encouragement (9)	9	Recognition of efforts
Organizational and administrative arrangements (8)	7	Planning and monitoring regimes
	1	Infrastructure maintenance
Compensatory measures (5)	5	Compensate or buy back land

4.3.3 Views of Fixed-term covenant (Western Australia) landholders on the State Government policies or actions as incentives

Respondents in Western Australia cited eight policy directions that the State government should use to motivate the voluntary uptake of permanent covenants (see Table 4.21 and detailed table in Appendix 4.36). In concurrence with the views of respondents in Victoria in terms of popularity, the largest number of respondents cited economic and financial provisions as the desirable incentives for permanent covenant uptake. While the provision of compensatory measures was the fifth most popular incentive for State Government action in Victoria, it was the second most popular incentive measure for permanent covenant uptake in Western Australia. Information and awareness as an incentive for permanent covenant uptake by State Government was placed eighth in popularity.

Table 4.21 Views of fixed-term covenant (Western Australia) respondents on the State Government policies or actions as incentives for permanent covenant uptake

Incentive group (total number of respondents)	No of respondents	Desired action
Economic and financial incentives (69)	26	Financial support
	22	Fencing costs
	21	Tax concessions
Compensation measures (32)	28	Compensation for land taken out of production
	4	Compensate local governments
Organizational and administrative arrangements (18)	9	Flexible and simple covenant process and mechanism
	4	Streamline management and coordination of conservation programs
	3	Professional advice and guidance
	2	Removal of bureaucracy
Land purchase (13)	13	Buy off land
Technical, labour support and advice (9)	6	Vermin control
Information and Awareness (5)	5	Promotion of covenants and conservation
Recognition and appreciation (5)	5	Recognition and appreciation

4.3.4 Views of Fixed-term covenant (Western Australia) landholders on the Local Government policies or actions as incentives

Table 4.22 shows six broad policy directions cited by ninety-seven respondents on the incentives that the Local Government in Western Australia should put in place in order to motivate the voluntary uptake of permanent covenants.

Table 4.22 Views of fixed-term covenant holders (Western Australia) on the Local Government policies or actions as incentives for permanent covenant uptake

Incentive group (total number of respondents)	No of respondents	Desired action
Economic and financial incentives (72)	57	Rates rebate
	8	Various kinds of financial support
	7	Reduction in land tax and tax incentives
Technical, and advice (15)	8	Assistance with vermin and weed control
	4	Technical support
	3	Advice
Administration, management, and planning (7)	6	Proactive role in management and planning
	1	Coordination
Information and awareness (6)	6	Information and publicity
Recognition and appreciation (4)	4	Public recognition

Similar to the views of respondents in Victoria, economic and financial support was the most popular incentive measure cited by fixed-term covenant (Western Australia) respondents. The second most popular incentive measure cited by respondents was the need for local government to provide technical and advisory support.

Other views presented by fixed-term covenant holders (Western Australia) on permanent covenants are shown in Table 4.23 (see detailed table in Appendix 4.37). A cross-section of respondents view there should be no role accorded to local government in issues relating to permanent covenants on private land. Likewise, a segment of respondents was apprehensive or preferred not participate in permanent covenants.

Table 4. 23 Reasons for decline to take up a permanent covenant among fixed-term covenant (Western Australia) respondents

View	Views categories	Specific comments
Non-participatory role for local Government (17)	No role for Local Government (17)	• little finance available for this work • responsibility of LCDCs • not responsible enough with their own conservation needs • their involvement likely to impact on rate payers • federal government's responsibility to provide funds or tax incentives • already have a large job coordinating agriculture
Non-involvement in covenants (30)	No to covenant (27)	• benefits of the covenant not apparent • apprehensive about a likelihood of covenants changing current intention in future • uncertainty about the future which might not favour covenants • removal of the ability to change land-use over time if there is a need to change • possible change in perceptions of conservation in future with change in ownership. • see covenants as a form of extremism in conservation • apprehensive about loss in value and productivity of property • eliminate management options in the future • perception of loss of control over land and therefore a preference for less controlling fixed-term agreements • perception of inadequate nature conservation values on the property to warrant a permanent covenant • lack of perception of the purpose of preserving native vegetation • landowners are quite capable of handling their own land in a responsible manner
	Cautious about covenants (3)	• cautious because of disappointing experience with current fixed-term covenant Agency

4.3.5 Summary and conclusion

Landholders in Victoria and Western Australia suggested nine incentive measures and actions for State and Local governments to implement in order to motivate the uptake of permanent covenants. These included economic and financial incentives, information and awareness, technical support and advice, policy and legal arrangements, compensatory measures, recognition, leadership, organizational and administrative arrangements, conservation leadership and management, and land purchase. Overall, economic and financial incentives by State and Local governments' were the most popular among respondents. Provision of information about covenants and their awareness was rated higher in popularity in Victoria than in Western Australia.

In both States, non-financial incentives were highly popular. These include provision of information and awareness about covenants, and recognition and appreciation of the conservation efforts made by private landowners on behalf of the public. It is also evident from the responses that respondents viewed good administration and management of conservation programs by both State and local governments as an important incentive for promoting permanent covenants.

Compensatory measures were cited in both States as incentives for promoting permanent covenant uptake. These were particularly in reference to the covering of the foregone potential use of land for income generation and the forfeiture of rights of use of land for other purposes. In Western Australia specifically, a cross section of respondents viewed the buying of areas with high conservation values by the government and their subsequent sale to interested conservation minded individuals as the appropriate mechanism to accompany the placement of permanent covenants on private lands.

A large cross-section of respondents in Western Australia and a smaller but relevant cross section in Victoria did not wish to participate in permanent covenants. Some of the reasons cited by respondents for the lack of interest included a concern for loss of control over their property and economic disadvantages. Others included the lack of adequate encouragement from government, lack of equity, lack of flexibility in a covenant, and a view that permanent covenants were a wrong approach to nature conservation on private lands.

This section has summarized the views of landholders on the actions and policies that the State and local Governments can take to promote the uptake of permanent covenants on private land. This information, together with other views presented on permanent covenants, provides insight into conditions that landholders view as necessary for the uptake of permanent covenants. It also helps to explain much of the unaccounted variance (residuals) on the effect

of the independent variables on landholders' attitudes to a permanent covenant uptake observed in the output path models for Victoria and Western Australia. The information also provides insight into reasons behind some of the observed perceptions and attitudes to the uptake of a permanent covenant expressed by a majority of landholders in both States.

The section that follows contains the preliminary discussion of the findings presented in this chapter.

Section Four: Brief discussion of the main findings

Introduction

In this section, we provide an overview of the main factors that influence the perceptions and attitudes of landholders to the uptake of a permanent covenant, which emerged from the preceding sections of this chapter. A comparison is made between Victoria and Western Australia and the possible explanations for the influences of each factor on landholders' attitudes to the uptake of a permanent covenant. A more detailed discussion of these findings with respect to findings contained in the previous and later chapters is provided in Chapter 6.

The hypothesis in this chapter is that there are no marked differences between Victoria and Western Australia in respect to landholders' socio-demographic and socio-economic situations, and no difference in their various attitudes to nature conservation and permanent covenants. Furthermore, there are no differences in the influence of these variables on the attitudes to the uptake of a permanent covenant by landholders between the two States. The said analysis will establish whether the possession of either of the two conservation management agreements in Victoria and Western Australia has marked differences on landholder's attitudes permanent covenant and their likelihood of taking up a permanent covenant.

The dependent variable used to assess landholders' likelihood of taking up a permanent covenant is their attitudes to the uptake of a permanent covenant, which was measured by their response to the statement "I would not consider a permanent covenant under any circumstance."

The output path models of both Victoria and Western Australia clearly demonstrated that many factors that were hypothesized to influence landholders' attitudes to a permanent covenant uptake directly or indirectly did not enter the model. This confirms that there is no conclusive evidence of their influence on landholders' decisions on the uptake of a permanent

covenant as is explained by the respective models. The proportions of landholders' responses to specific inquiries about permanent covenants and their comments on the desirable incentives or actions for motivating their uptake of permanent covenant clarify or explain some of the observed trends in the path models.

4.4.1 Attitudes to restrictions on land-use- Property rights

Restrictions on land-use are primarily related to the concept of property rights: They are the strongest determinant of landholders' attitudes to the uptake of a permanent covenant in both States. Landholders that have negative attitudes on reduced property rights preferring the non-imposition of limitation of use of their land even for nature conservation, are unlikely to view permanent covenants favourably. Landholders' interest in long-term nature conservation is the single largest factor with an influence on attitudes to the reduction of property rights in both States. It accounts for a third of the total influence.

Therefore, an increase in landholders' interest in long-term nature conservation in both States would have a significant change in landholders' attitudes to reduced property rights and in turn their attitudes to a permanent covenant uptake. Landholders that have an interest in long-term nature conservation are of course more likely to understand the need for a restriction on the use of the land under nature conservation than those that do not have an interest. The former, therefore, would be more positive about taking up a conservation mechanism that incorporates such restrictions than the latter.

In Victoria in addition to the influence of the level of interest in long-term nature conservation, attitudes to a reduction of property rights are also influenced by the frequency of the landholders' association or affiliation with conservation groups. However, the situation is different in Western Australia where the level of interest in long-term nature conservation, perception of loss in property value as a result of placing a permanent covenant on it, and the proportion of the conservation area to the total area of the property all influence landholders' attitudes to reduction of property rights. Landholders that have bigger proportions of their property under conservation are more likely to have a positive attitude to reduction of property rights than others are.

The influence caused by the affiliation with conservation groups on attitudes to uptake of permanent covenant in Victoria is both direct and indirect. The indirect influence mediated through landholders' attitudes to the reduction of property rights indicates that the greater the number of conservation organizations a landholder has memberships to, the more that the landholder is likely to have a positive attitude to the reduction of property rights. Association with conservation groups, therefore, explains attitudes to the reduction of property rights in Victoria. A significant correlation between affiliation with conservation groups and interest in

long-term nature conservation suggests that the number of conservation groups that a landholder is associated with is related of their level of interest in long-term nature conservation. Thus, interest in long-term nature conservation may indirectly accounts for part of the influence of affiliation or association with conservation group on attitudes to the uptake of a permanent covenant.

The correlation observed between larger conservation areas and interest in long-term nature conservation in Western Australia is the probable explanation of the influence of the ratio of conservation area to total land area on attitudes to property rights. There is a strong suggestion that positive attitudes to a reduction of property rights with increasing ratio of conservation area to the size of the property is indirectly related to the degree of interest in conservation. This indirect relationship shows a greater interest in conservation by landholders who have a bigger conservation area to property size ratio than those with a smaller conservation area to property size ratio.

4.4.2 Perception of covenant benefits

Perceptions of the benefits of a permanent covenant over those of fixed-term scheme are the second and third strongest determinant of landholders' attitudes to the uptake of a permanent covenant in Victoria and Western Australia, respectively. Landholders in Western Australia were less convinced about the benefits of a covenant over their fixed-term covenant than landholders in Victoria. Furthermore, a unit increase in the level of knowledge about permanent covenants has a much bigger influence on perception of the benefits of a permanent covenant in Western Australia than in Victoria.

Confirming the added benefits of a permanent covenant over the fixed term covenant would lead to a bigger change in attitudes to a permanent covenant uptake in Western Australia than in Victoria. This is possibly because landholders in Victoria are more content with their fixed term agreement, having entered it voluntarily and in most instances with a choice between it and a permanent covenant than landholders in Western Australia that mostly took up a fixed-term covenant under obligation from the government.

Perceptions of loss in land value have twice as great an influence on landholders' perception of the benefits of a covenant in Victoria than level of knowledge about permanent covenant. Thus, change in landholders' perceptions of the benefits of a permanent covenant in Victoria would most importantly require one to address their perceptions of loss in land value as result of placing a permanent covenant on it. To do so, one would need to consider two factors that influence the perception of loss in land value in Victoria namely the level of knowledge about permanent covenants and the ratio of conservation area to total land area.

The influence of the latter is correlated to landholders' interest in long-term nature conservation.

Landholders that have a high conservation area ratio and in effect a greater interest in long-term nature conservation than those with a smaller conservation area ratio were less likely to perceive a permanent covenant to cause a loss in land value. The issue of loss in land value has been recognized and addressed recently through amendment to Federal Tax legislation (*Income Tax Assessment Act 1997 pursuant to the Taxation Laws Amendment Act (No. 8) 2003)*. Furthermore, several local authorities in Australia (e.g. The Shire of Augusta-Margaret River in Western Australia, and Brisbane Municipal Council in Queensland) are already providing tax rebates on land under a covenant. Increasing knowledge about permanent covenants including the provision of new information such as availability of tax rebates would reduce the perception of loss in land value caused by placing a permanent covenant on it, and in effect directly increasing landholders' perceptions of the benefits of a permanent covenant.

In both States, landholders' perceptions of the benefits of covenants have a significant effect on their likelihood to take up a permanent covenant, which in both States is influenced by their level of knowledge about permanent covenants and their perceptions of the impact of a covenant on land value. The level of interest in long-term nature conservation also has an influence on the extent to which a landholder perceived the benefits of a permanent covenant in Western Australia. In both States, landholders who show little or no interest in long-term nature conservation, and/or those that perceived covenants to lead to loss in land value are more unlikely to perceive the benefits of a permanent covenant, and in turn less likely than others take up a permanent covenant.

The effect of a unit change in the perception of loss in land value on perception of the benefits of a covenant is almost twice as big in Victoria as Western Australia. This difference can be explained by differences in the ratios of conservation area to the total area of the properties. Evidently, the majority of the properties in Victoria have a higher conservation area ratio than in Western Australia. Placing a covenant on a conservation area with a high ratio would lead to perception of a larger percentage loss of the total property value than when a covenant is placed on properties with a low conservation area ratio. Accordingly, the impact on land value is more likely to be apparent in Victoria where the percentage loss in value relative to total value of the land is greater than in Western Australia.

4.4.3 Knowledge and Awareness of a permanent covenant

Contrary to expectation, the level of knowledge about permanent covenants does not have as large an influence on landholders' attitudes to uptake of a permanent covenant uptake in either Victoria or Western Australia as other factors retained in the path models. However, it

has an influence on the extent to which landholders perceived the benefits of a permanent covenant, with a greater influence in Western Australia than Victoria. Level of knowledge about permanent covenants also has influence on Victoria landholders' perceptions of loss in land value because of placing a permanent covenant on it. However, this influence is significantly smaller than that by unexplained factors.

The weakness of the level of knowledge about permanent covenants relative to other variables in explaining attitudes to a permanent covenant uptake can be attributed to the significantly large proportion of landholders who already know about permanent covenants. The notion is that any further increase in knowledge about covenants would have a limited impact on their attitudes to covenant uptake.

A difference is observed between the two States in respect to the desire to know more about permanent covenants - a large cross-section of landholders in Western Australia did not desire to know more about permanent covenants while in Victoria the majority desired to know more about permanent covenants. The lack of desire to know more about permanent covenants in Western Australia can be attributed to their association of a permanent covenant with fixed-term covenant, which is viewed negatively by some. This is because it is in many cases non-voluntary, but taken up as a condition for receiving a permit to clear or to develop a portion their land. Such a conditional grant has the effect of generating a dislike of other mechanisms resembling the disliked scheme or agreement. In contrast to Western Australia, the Land for Wildlife Scheme in Victoria, which is voluntary, is likely to attract landholders who have a greater interest in nature conservation than would the coerced schemes. In effect, this leads to the observed desire to know more about a permanent covenant as a conservation mechanism in Victoria.

4.4.4 Social economic factors

The small or no debt observed in the majority of landholders in Victoria compared to Western Australia is partly attributed to differences in the average size of the properties between the two States and the main farm types which were operated. Commercially oriented and larger farms in Western Australia than Victoria mean that landholders in Western Australia were more likely to have and require larger financial outlay and more mechanized farm operations, thus the larger levels of debt than Victoria. There is evidence of the possible influence of debt, assessed as a single factor, on landholders' attitudes to permanent covenant in Western Australia, which shows increasing level of debt to coincide with decreased likelihood of a permanent covenant uptake. Nevertheless, such influence is not replicated in either Victoria or Western Australia when the influence of debt level on the likelihood to take up a permanent covenant uptake is assessed jointly with other factors.

These observations suggested that debt, considered separately from other variables, is likely to have an influence on attitudes to the uptake of a permanent covenant uptake only after a certain level of debt that is already reached by a majority of landholders in Western Australia but not in Victoria. However, this influence becomes obscure in the presence of other variables.

4.4.5 Equity in conservation covenants

Vogel (1996) points out that people are unlikely to implement or take up environmental conservation measures for a public good asset where an improvement in its quality requires the concerted action by others rather than the individuals action. This view also holds where the cost and benefits from such assets were not perceived as distributed equitably among the benefactors of the conservation outcomes.

Equity concerns have an important influence on landholders' decision on actual uptake of a permanent covenant despite their non-statistically significant relationship with landholders' attitudes to uptake of a permanent covenant in Western Australia. A bigger proportion of landholders in Western Australia than Victoria give importance to compensation for forfeiture of property rights over areas of land under a permanent covenant. The bigger proportion also, expects a public contribution to the cost of nature conservation on private land. It also expects a covenanting agency to cover the cost of taking up a permanent covenant. The differences in proportions between the two States suggest that landholders in Western Australia were more responsive to equity for uptake of permanent covenant than were those in Victoria.

Compensation as equity for the taking up of a permanent covenant as a single factor had a statistically significant influence on attitudes to the uptake of a permanent covenant only in Victoria. Landholders that strongly viewed the necessity for compensation for land under a permanent covenant were also more likely to have a negative attitude to taking up a permanent covenant than were others. The proportion of landholders with a fixed-term agreement in Victoria that were likely to fall under this group is 36 percent. However, the influence of compensation as equity is masked when other factors are introduced in the analysis.

Compensation as equity, therefore, has an influence on attitudes on taking up a permanent covenant in Victoria only when it is considered separate of other factors. Although compensation as equity has no significant influence on the likelihood of a permanent covenant uptake in Western Australia, it would, nevertheless have an influence on the actual uptake on a permanent covenant in 54 percent of fixed-term covenant holders in Western Australia.

The demand for compensation as equity in the uptake of a permanent covenant is in part a function of the landholders' need for ongoing financial support to undertake the

requirements of a permanent covenant and their level of interest in long-term nature conservation. Landholders that express a strong need for ongoing financial support and those that have little interest in long-term nature conservation are more likely to demand compensation as equity for a permanent covenant uptake than are others. The more widespread demand for compensation as equity in Western Australia than Victoria suggests there is lesser interest in long-term nature conservation among fixed-term covenant/agreement landholders in Western Australia than in Victoria. It also suggests a greater requirement in Western Australia for on-going financial support for conservation under a permanent covenant than in Victoria.

4.4.6 Incentives and pre-requisites for covenant uptake

Most landholders in both States give importance to provision of on-going financial support as a pre-requisite for taking up a permanent covenant. There is clearly a level of awareness about the financial requirements associated with the uptake of a permanent covenant, and a lack of preparedness or inability to meet these requirements.

Non-financial incentives by States and Local Governments in either State would not attract as many landholders to the uptake of permanent covenants as would financial incentives. The larger proportion of landholders in Western Australia than Victoria that hold this view signifies lower sensitivity to non-financial incentives in Western Australia than in Victoria. As long as landholders feel constrained to undertake conservation by financial limitations, non-financial incentives will not prompt them to take up conservation under terms that require them to appropriate their own finances.

One explanation for the lack of greater sensitivity towards non-financial incentives in Western Australia than Victoria is the requirement for financial support by a bigger majority of landholders in Western Australia than Victoria, and differences in the economic activities on the properties between the two States. In Western Australia properties have, on average, much larger nature conservation areas than Victoria and would therefore require more financial input for activities such as fencing and weed control. Landholders in Western Australia, therefore, are more attracted to financial incentives and less to non-financial incentives.

Almost half of the landholders in both States give a measure of importance to the ability of a covenant to lead to increased public recognition as a pre-requisite for uptake of a covenant. Although this would not present a prime reason for the uptake of a permanent covenant, it suggests there is an aptitude for public recognition among a relatively large proportion of landholders in both States, which should be considered and incorporated when designing covenant programs.

The importance given by landholders to different incentives, as prerequisite for covenant uptake has no significant relationship with their attitudes to the uptake of a permanent covenant. These incentives, however, point out the missing ingredients that can motivate actual uptake of permanent covenant when there is a positive attitude to their uptake.

Regardless of the State, economic and financial incentives provided by State and Local governments are by far the most popular means for motivating landholders' uptake of a permanent covenant. Provision of information about permanent covenants and creation of their awareness by State and local governments was rated higher in popularity in Victoria than in Western Australia. Information and awareness are most useful in shaping the right attitude to the uptake of permanent covenant through their indirect influence on various perceptions and attitudes to permanent covenants.

Although non-financial incentives rate high in popularity in both States, their effectiveness in promoting the uptake of a permanent covenant is subject to a number of factors including the interest in long-term nature conservation. Efficient administration and management of conservation programs by both State and local governments were important incentives for promoting permanent covenants.

Irrespective of the State, landholders' decision for actual uptake of permanent covenant revolved around a complex set of factors. The elements that must be addressed in order to motivate a positive attitude and uptake of covenants include inculcating an interest in long-term nature conservation, addressing the issue of property rights, equity, and provision of economic and financial support. In addition, increasing knowledge about permanent covenants, and streamlining of the management of administration of private land conservation schemes are equally important. These elements are discussed further in Chapter 6. The Chapter that follows provides the findings on landholders without a covenant or agreement in Western Australia and Victoria, following the same approach in format as the present Chapter.

CHAPTER 5

Non- holders of Covenant or Agreement

Research Findings and Preliminary Discussion

This chapter contains the findings on landholders in Victoria and Western Australia that do not have any form of conservation covenant or agreement on their properties. The first section presents the descriptive findings (frequencies and proportions), which include socio-demographic, economic, and attitudes to nature conservation and permanent covenants, and property characteristics. The findings are presented in terms of the similarities and differences between Victoria and Western Australia. Tests of association between selected independent variables and respondents' attitudes to a permanent covenant uptake as the dependent variable are also reported.

The second section reports on the output of a multivariate path analysis based on selected variables in this study. Section three contains a qualitative synthesis of views and comments by respondents on the desired incentives for a permanent covenant uptake. A preliminary discussion of the findings is presented in Section 4. It focuses on the key factors in the decision of landholders on the uptake of permanent covenants in, and between the two States.

Section one: Results of the descriptive analysis

Introduction

This chapter responds to the research questions posed to establish whether there is a relationship between several exogenous variables measured in the study and landholders' likelihood to take up a permanent covenant, their motives for having retained nature conservation areas on their properties, and their attitudes to long-term nature conservation. The chapter also addresses the research questions aimed at establishing whether there is a relationship between landholders' knowledge and awareness, familiarity with permanent covenant mechanisms and their likely uptake of a permanent covenant.

Other research questions addressed in this chapter aim at establishing the perceptions and attitudes of landholders to permanent covenants as mechanisms for nature conservation in terms of the covenants' benefits, necessity for long-term nature conservation on private land, impact on land value, effectiveness in assuring long-term nature conservation, and effectiveness over other mechanisms. Other research questions aim at establishing whether friends/neighbours and the level of affiliation with conservation groups influence landholders likelihood to take up a permanent covenant, and whether there is a relationship between landholders' socio-economic disposition and their likely uptake of a permanent covenant.

Other research questions whose findings are reported in this chapter include whether there is a relationship between landholder's long-term goals for their property and their likelihood of them taking up a permanent covenant, and whether there is a relationship between landholders' attitudes to private property rights and their likely uptake of a permanent covenant. The results presented in this chapter also respond to the following questions: what are the specific barriers to landholders' uptake of a permanent covenant, and the incentives measures that can be used effectively by State and local governments and appointed covenant agencies to motivate the uptake of permanent covenants on private lands.

The results reported also respond to questions aimed at establishing whether there are equity concerns in nature conservation on private lands that have a bearing on permanent covenant uptake by landholders, and whether there are similarities in the factors that characterise permanent covenant holders and factors that characterise non-holders of a covenant or agreement.

The hypotheses in this chapter are that there are no marked differences between Victoria and Western Australia in respect to landholders' socio-demographic and socio-economic conditions, and their various attitudes to nature conservation and permanent covenants; and, there are no differences in the influence of these variables on landholders' attitudes to an uptake of a permanent covenant between the two States.

The methods used to collect and analyse the reported data are outlined in Chapter 2 and the response rates of the questionnaire surveys for the two categories of landholders are summarized in Table 2.2. Moderately high response rates were achieved in both States, with 32 percent in Victoria and 39 percent in Western Australia.

The exogenous and endogenous variables reported in this chapter are contained in Appendices 4.1 and 4.2 respectively.

5.1.1 Attitudes to the uptake of a permanent covenant

Table 5.1 shows the proportions of responses to the statement 'I would not consider a permanent covenant under any circumstance'. Attitude to a permanent covenant uptake was also designated the dependent variable in the descriptive and path analysis.

There were relatively equal proportions of respondents in Victoria that agreed (28.8 %) and those disagreed (26.6 %) that they would not take up a permanent covenant under any circumstance. Half of the respondents in Western Australia agreed with the statement (see Table 5.1). However, 45 percent of respondents in Victoria and 32 percent in Western Australia did not know or were neutral on whether they would consider a permanent covenant under any circumstance.

An assessment of the relationships between the observed attitudes to a permanent covenant uptake and the independent variables measured in the study are explored in this chapter in order to establish the reasons for the observed distribution in attitudes towards the uptake of permanent covenants.

Table 5.1 Response on attitudes to covenant uptake among respondents with no covenant or agreement in Victoria and Western Australia

Statement: I would NOT consider entering a permanent covenant under any circumstance.				
	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
Strongly Agree	25	18.0	29	26.9
Agree	15	10.8	25	23.1
Neutral	39	28.1	19	17.6
Disagree	25	18.0	10	9.3
Strongly Disagree	12	8.6	9	8.3
D/Know	23	16.5	16	14.8
Total	139	100	108	100

5.1.2 Summary of results of descriptive analysis

Tables 5.2 and 5.3 respectively, show summaries of the similarities and differences in variable responses of respondents with no covenant or agreement in Victoria and Western Australia. Determination of the significant similarities and differences is as described in Section 4.2 of Chapter 4. Tabulated survey results of the variables presented in these summaries are shown in Appendices 5.1 to 5.23. Summary of the statistically significant relationships between 15 independent variables and respondents' attitudes to a permanent covenant uptake and their directional trends is provided in Table 5.4.

5.1.2.1 Similarities and differences in variable attributes between Victoria and Western Australia

The average ages of the respondents in the two States were comparatively similar at 50 and 53 years in Victoria and Western Australia respectively. However, these averages differed with permanent covenant holders in Victoria that had an average age of 58 years.

The average size of properties in Western Australia is significantly larger than in Victoria; the large majority in both States were complete freehold tenure. In addition, the majority of the properties in both States have been in the family for more than 31 years.

The dominant farm-types vary in both States with almost a third of the properties in Victoria described as mix of sheep with cattle or dairy, while half of the properties in Western Australia have a mix of crop and sheep. No respondents from either of the States had properties managed solely for conservation. The vast majority of properties under permanent covenant holders in Victoria, on the other hand, were managed predominantly for nature conservation.

The most common types of conservation features in Victoria were Streams/Creeks/Rivers, followed by Native bush/forest. In Western Australia, it was native bush the most common, followed by Streams/Rivers. Three quarters of the properties in Victoria and Western Australia had slightly over 1.6 percent and 4 percent conservation area ratio respectively. A quarter of the properties in Victoria and Western Australia had a conservation area to total property area ratio of 46 percent and slightly more than 18 percent respectively. The findings for Victoria closely compare with observations of the large majority of properties of permanent covenant holders that showed they had over 50 percent nature conservation cover.

The two most popular primary reasons for having retained the nature conservation features on the properties in Victoria were 'shade and shelter for stock' (17.9 %); and 'support native vegetation' (16.6 %). In Western Australia 'support for native vegetation' (19.3 %) was the most popular primary reason followed by soil salinity control (15.3 %).

The majority of respondents in both States were apprehensive about entering a conservation arrangement that would entail permanent restrictions on some use of the conservation land, and almost half of the respondents in Victoria and slightly over half in Western Australia perceived placing a permanent covenant on the land would most likely cause their properties to lose market value.

The majority of respondents in Victoria either were neutral or did not have an opinion on whether a permanent covenant is an effective mechanism as a salinity control measure. In addition, the majority in both States did not perceive any apparent benefits in a permanent covenant.

Most respondents in Victoria and close to half in Western Australia were neutral or did not know whether they would only take up a permanent covenant with an organization that is independent of the Government. Moreover, most of the respondents in both States planned to retain ownership and management of their property in the family.

In respect to total income on the land, most respondents in Victoria have a total income of $150,000 or less, while the majority in Western Australia has a total income larger than $150,000. Nearly all respondents in Victoria have a low labour commitment compared to Western Australia, where most had significantly higher labour commitment on the property. Victoria's findings were similar to those of permanent covenant holders in Victoria.

Table 5. 2 Summary of similarities between non-holders of a covenant or agreement in Victoria and Western Australia in the results of the descriptive analysis

Variables	Attributes	Victoria	W.A
		Results are in % unless indicated otherwise	
Age distribution in years	Average age of respondents	50 years	53 years
Property tenure type	Properties completely freehold tenure	77	82
Length of time property has been in family (Appendix 5.1	Properties have been in the family for more than 31 years.	51	58
Attitudes to present uptake of a permanent covenant	Prefer not to take up a permanent covenant at present	78	88
Future retention of property ownership in family (Appendix 5.4)	Intended to retain ownership in the future.	70	85
Future retention of property management in family (Appendix 5.4)	Intended to retain management in the future.	73	84
Knowledge about permanent covenant (Appendix 5.5)	Little or no knowledge of permanent covenants	70	66
Affiliation or association with conservation groups (Appendix 5.6)	Members of, or support one conservation group	92	71
Attitudes to imposed restrictions of land-use (Appendix 5.9)	Not in favour of permanent restrictions on some use of the conservation land	53	55
Perceptions of the benefits in a permanent covenant (Appendix 5.11)	Do not perceive benefits in a permanent covenant	57	73
Debt on property in year 2000 (Appendix 5.16)	Derived more than 50 percent of their income from the property	54	76
	No debt on property	32	30
Importance of ongoing financial support as pre-requisite for a permanent covenant uptake (Appendix 5.20)	Attached importance to ongoing financial support	69	69
Interest in long-term nature conservation (Appendix 5.20)	Give level of importance to permanent covenant's ability to assure long-term nature conservation	65	58
Influence of non-financial incentives on covenant uptake (Appendix 5.21)	Do not know or are neutral about significance of non-financial incentive for the uptake of a permanent covenant	41	46
Compensation for non-use of land under a permanent covenant (Appendix 5.22)	Believe there should be compensation in permanent covenant for non-use of land.	64	68
Attitudes to equity in cost of permanent covenant uptake (Appendix 5.23)	Believe covenantee should cover cost of permanent covenant uptake.	66	67
Expectation of equity and level of public responsibility in private conservation (Appendix 5.24)	Prefer at least 40% of cost to be covered by the public.	54	62
	Prefer nil contribution by public to cost of private conservation.	25	31

Table 5. 3 Summary of differences in the results of the descriptive analysis between respondents without any form of covenant or agreement in Victoria and Western Australia

Variables	Attributes	Victoria	Western Australia
		Results are in % unless indicated otherwise	
Property size in hectares	Average area of properties in hectares	467 ha	2340 ha
Types of conservation features (Appendix 5.2)	Native bush/ forests	44	88
Percentage ratio of conservation to total property size	Conservation area ratio of a quarter of the properties in the States	46	18
Desire to know more about permanent covenants (Appendix 5.6)	Do not want to know more about permanent covenants	47	58
Perception of a permanent covenant's effectiveness as a salinity control mechanism (Appendix 5.10)	Neutral or do not have an opinion	51	29
Total annual income in 1999 (Appendix 5.13)	A$150,000 or less	68	
	More than A$ 150,000		57
Reception of financial support before uptake of fixed-term agreement or covenant (Appendix 5.15)	Have not received any financial support/benefits for nature conservation work on their land.	44	70
Familiarity with covenant programs in the State	Not familiar with the permanent covenant programs in the State	60	45
Debt on property in year 2000 (Appendix 5.16)	Debt of more than A$300,000	14	36
Labour commitment on property (Appendix 5.14)	Labour commitment score more than 9 points	35	60
Perception of a permanent covenants impact on land value (Appendix 5.17)	Perceive loss in land value as a result of placing a permanent covenant on it	46	55
Effectiveness of permanent covenants over other mechanisms (Appendix 5.18)	'Don't know' or 'Neutral' regarding effectiveness of permanent covenant	57	40
Necessity of permanent covenant for long-term nature conservation in view of other mechanism	Do not perceive the necessity of a permanent covenant in view of confidence in competent future management	43	65
Importance of frequent and long-term management advice as pre-requisite for permanent covenant uptake (Appendix 5.20)	Attached a level of importance	58	43

The majority of respondents in both States (a bigger majority in Western Australia) derived more than half of their income from the property. Overall, landholders in Western Australia had a greater dependence on income from the property than those in Victoria. The findings in both States contrast with those of permanent covenant holders, which showed that the majority of them had little or no economic dependence on their properties.

Most respondents in Western Australia and a much smaller proportion in Victoria (44 %) had not received any financial support/benefits to undertake nature conservation work on their land from any organisation or government. These findings compare with those of permanent covenant holders, which showed that the majority had not received any financial support before taking up a permanent covenant.

Almost half of the respondents in Western Australia and most in Victoria, were members of, or supported at least one conservation group/organization. Western Australia had a much higher proportion (29.5 %) than Victoria (8 %) of those that were not members and did not support to any conservation group/organisation. In contrast to the two categories of landholders, all permanent covenant holders were members of, or supported at least one conservation group.

Irrespective of their expressed attitudes to permanent covenant uptake, over half of the respondents in each State would give a level of importance to provision of on-going financial support, an assurance of the long-term nature conservation, and frequent long-term management advice on conservation, in their decision to take up a permanent covenant. The difference in these findings and those of permanent covenant holders are in respect to the importance given to the provision of on-going financial support, management advice. Less than 20 percent of permanent covenant holders gave a level of importance to on-going financial support as a pre-requisite of taking up a permanent covenant, and a smaller proportion of them (44 %) than were non-holders of a covenant or an agreement gave a level of importance to provision of management advice.

Close to a third of respondents in Victoria and Western Australia would give a level of importance to public recognition and appreciation of the conservation values on their land when taking a decision on taking up a permanent covenant. However, larger proportions of respondents (41 % in Victoria and 46 % in Western Australia) were uncertain whether non-financial recognition by State and Local Governments of their conservation efforts was a significant step in motivating their uptake of a permanent covenant. In little contrast to these findings, 41 percent of permanent covenant holders did not give importance to public recognition as a pre-requisite to the uptake of a permanent covenant.

Although the majority of respondents in each State expressed the need for compensation for land placed under a covenant, the proportion of respondents in Western Australia that strongly expressed this need was twice as large as that of Victoria. The majority of respondents in both States also agreed that the cost of entering a permanent covenant on their land should be covered by the covenantee. In respect to public contribution to the cost of conservation on private land, the majority of respondents in both States preferred the public to contribute at least 40 percent towards the conservation costs. This differed with observations of permanent covenant holders where the majority of permanent covenant holders preferred either no contribution from the public or less than 20 percent contribution from the public.

A summary of the statistically significant relationships between the independent variables in the descriptive analysis and attitudes to a permanent covenant uptake is presented in Table 5. 4.

Of the relationships assessed, only three independent variables were statistically significant in both States: respondents' attitudes to imposed restrictions on land-use, perceptions of the benefits in a permanent covenant, and perceptions of the impact of a permanent covenant on land value. Five of the variables were only statistically significant in Victoria: the ratio of conservation area to the total land area, the respondents' age, and their desire to know more about permanent covenants, their interest in long-term nature conservation, and their attitudes to compensation for permanent covenant uptake.

The length of time of the property in the family, the respondents' perceptions of a permanent covenant as a mechanism for salinity control, and their association with conservation groups were only statistically significant in Western Australia.

The relationship between several other independent variables assessed in this study and respondents' attitudes to taking up a permanent covenant were statistically not significant in either Victoria or Western Australia.

Table 5. 4 Summary of the statistically significant bi-variate relationships between attitudes to permanent covenant uptake and independent variables for respondents with no covenant or agreement in Victoria and Western Australia

Variable/Probability significance		*Trend in the variables relationship*
Victoria	**Western Australia**	
Property-Length of time in the family		*Decreasing length of time that property has been in the family corresponds to increasing likelihood of a positive attitude to a permanent covenant uptake*
X	d=-0.206 p=0.010	
Ratio of conservation to total land area		*Increasing ratio of conservation area to total land area corresponds to increasing likelihood of a positive attitude to the uptake of a permanent covenant*
d=0.231 p=0.004	X	
Age		*Decreasing age corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake*
d=-0.160, p=0.04	X	
Desire to know more about permanent covenants		*Desire to know more about permanent covenants corresponds to increased likelihood of a positive attitude to permanent covenant uptake than others*
$\chi 2(5, n=137)=11.57$, p=0.041	X	
Attitudes to imposed restrictions on land-use		*Increasing acceptance of permanent restrictions on land-use corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake.*
d= 0.313, p=0.001	d= 0.234, p=0.01	
Perception of the benefits of a permanent covenants		*Increasing perception of covenant benefits corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake.*
d= 0.333, p=0.001	d= 0.265, p=0.001	
Perceptions of the impact of permanent covenants on land value		*Increasing perception of loss in land value corresponds to an increasing likelihood of a negative attitude to a permanent covenant uptake*
d=-0.202, p=0.003	d=-0.222, p=0.011	
Perception of a permanent covenant as a mechanism for salinity control		*Increasing perception of permanent covenant as effective mechanism for salinity control corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake*
X	d=0.312, p=0.001	
Affiliation or association with conservation groups		*Increasing number of association or affiliation with conservation group corresponds to increasing likelihood for a positive attitude to a permanent covenant uptake*
X	$\chi 2(5, n=110) =12.66$; p=0.027	
Interest in long-term nature conservation		*Increasing interest in long-term nature conservation corresponds to increasing likelihood of a positive attitude to a permanent covenant uptake*
d = 0.236, p= 0.001	X	
Attitude to compensation for permanent covenant uptake		*Decreasing importance given to compensation corresponds to increasing likelihood of a positive attitude to a permanent covenant uptake*
d =-0.145, p=0.036	X	
Attitudes to covenanting organization's affiliation with Government		*Increasing agreeability to entering a permanent covenant with a covenantee that is affiliated to government corresponds to an increasing likelihood of a positive attitude to a permanent covenant uptake*
X	d=0.189, p=0.014	

Note: X= non statisitcally significant; d= Somers' d test

5.1.3 Summary

Similarities and dissimilarities were observed in seventeen and fourteen variable attributes respectively between the two States. The similar variable attributes were mainly in respect to demographics, long term goals for the properties, attitudinal factors and pre-requisites for a take up of a permanent covenant. The differences observed between the two States are mainly in respect to exogenous variable attributes particularly the socio-economic ones such as level of debt on the property, total income, and labour commitment, and endogenous variables attributes including respondents' perception of the effectiveness of a permanent covenant and perception of its impact on the land value. Other endogenous variables that show differences are respondents' perception of the necessity of a permanent covenant for long-term nature conservation and its effectiveness over other conservation mechanisms.

Statistically significant relationships were observed in both States in respect to respondents' perceptions of a permanent covenant's benefits and impact on land value, and on their attitudes towards restrictions on land-use. In the three variables, there is a likelihood of a positive attitude to a permanent covenant uptake with increasing perception of the benefits of a permanent covenant, decreasing perception of loss in land value because of placing a permanent covenant on it, and increasing positive attitudes to restrictions on land use under a permanent covenant.

The age of respondents and attitudes to compensation were some of the important statistically significant variables only in Victoria, while association with conservation groups, and perception of a permanent covenant as a mechanism for salinity control were significant only in Western Australia.

The section that follows reports on the multivariate relationships between several variables that have been described in the present section and landholders' attitudes to a permanent covenant uptake using path analysis models. The purpose of the section is to establish the collective influence of the independent variables in this study on the dependent variable and to determine the strength of the relationships between the variables retained in a path model.

Section two: Results Of Path Analysis

Introduction

This section contains the results of multiple regressions in form of path analysis for non-holders of a covenant or agreement. The conceptual model tested in this analysis is shown in Chapter 2: Figure 2.1. The procedures used in the path analysis to construct the final output model are described in the study methods in Chapter 2.

An additional independent variable coded 'State' was included in the path analysis of the combined categories of non-holders of a covenant or agreement respondents from Victoria and Western Australia (see sub-section labelled: Path analysis-non-holders of covenant or agreement in combined Western Australia and Victoria). Inclusion of the extra variable in the analysis was done to test a relationship between the State in which a respondent is based and their attitudes to a permanent covenant uptake. In addition, the variable 'State' was set as a predictor variable of all mediator and output variables and hypothesized to be correlated with all predictor variables in the conceptual path model. Table 5.5 presents an overview of the hypothesised predictor variables (extracted from Figure 4.1) of the mediator variables in the conceptual path model.

Table 5. 5 Hypothesized predictor variables of the dependent variables in the conceptual path models for non-holders of covenant or agreement in Victoria and Western Australia

Dependent (mediator) variables	Hypothesized predictor (explanatory) variables
Value_loss- (Perception of impact of covenant on market value of property).	State*, Knowledge, ConRatio, Age
Necessity- (Perception of the necessity of a permanent covenant).	State*, Age, Length, Knowledge, Membership.
Restrictions (attitudes to restrictions on land use).	State*, Age, Knowledge, Con_interest, ConRatio, Labour, Length, Effective, Membership, Econ_depend, Benefits, Ownership, Management, Value_loss, Debt
Salinity- (Perception of permanent covenant's effectiveness for salinity control).	State*, Knowledge, Age, Membership, Length
Compensation- (Attitudes on equity) (expectation for compensation for a covenant uptake).	State*, Knowledge, Age, Con_interest, ConRatio, Debt, Econ_depend, Length, Restrictions, Value_loss, Benefits.
Nonfin_recog- (Attitudes to non-financial recognition).	State*, Knowledge, Age, Membership, Con_interest.
Benefits- (Perceived benefits of a permanent covenant).	State*, Age, Knowledge, Con_interest, ConRatio, Econ_depend, Ownership, Management, Salinity, Value_loss, Debt, Effective, Necessity.

* note: The variable 'State' is used as a predictor variable only in the construction of a path model for the combined categories of respondents in Victoria and Western Australia.

5.2.1 Path analysis –Non-holders of covenant or agreement (Victoria)

Table 5.6 shows the five variables retained in the path model after regressing all 20 initial variables in the conceptual model (Chapter 2: Table 2.2 and 2.3), with the exception of the predictor variable 'State', from the output variable 'Attitudes to a permanent covenant uptake'. The retained variables were significant predictors of 'attitudes to a permanent covenant uptake' at 0.05 level of significance. The variable 'Restrictions' (0.308) has strongest and most positive effect of the retained variables on the dependent variables.

Table 5. 6 Path coefficients for the first regression analysis for respondents with no covenant or agreement in Victoria

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.136	.608		3.516	.001	.933	3.339
Econ_depend	-5.739E-03	.002	-.171	-2.325	.022	-.011	-.001
Con_interest	.231	.076	.223	3.036	.003	080	.382.
Age	-2.554E-02	.008	-.227	-3.098	.002	-.042	-.009
Restrictions	.240	.057	.308	4.227	.000	.127	.352
Benefits	.243	.069	.261	3.504	.001	.106	.381

a dependent variable: attitudes to a permanent covenant uptake.

Table 5.7 shows the results of the second path analysis derived from a regression of 14 hypothesized predictor variables (see Table 5.5) from the mediator variable 'Restrictions' as the dependent variable. Only two variables 'Value_loss' (-0.226) and 'Knowledge' (0.231) were retained in the path model with a significant effect on 'Restrictions'.

Table 5. 7 Coefficients of predictors for attitudes to restrictions of a permanent covenant (Respondents with no covenant or agreement in Victoria)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.357	.431		7.784	.000	2.504	4.210
Value_loss	-.240	.093	-.226	-2.590	.011	-.423	-.057
Knowledge	.337	.127	.231	2.657	.009	.086	.589

a dependent variable: attitudes to permanent covenant restrictions.

The output of the third analysis that regressed twelve predictor variables (see Table 5.5) from the mediator variable 'Benefits' as the dependent variable are reported in Table 5.8. Only the variables 'Age' (-0.198) and 'Value_loss' (-0.791) were retained in the model.

Table 5. 8 Coefficients for predictor variables for perceptions of benefits of a permanent covenant (Respondents with no covenant or agreement in Victoria)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.680	.596		2.817	.006	.500	2.859
Age	-2.449E-02	.010	-.198	-2.421	.017	-.045	-.004
Value_loss	-.265	.074	-.291	-3.567	.001	-.412	-.118

a dependent variable: perception of the benefits of a permanent covenant.

Figure 5.1 presents the final path model for non-holders of a covenant or agreement in Victoria. This was derived from a regression of all variables retained in the three previous regressions models from the output variable 'attitudes to a permanent covenant uptake' as the dependent variable. Seven variables were retained in this final model with five of them having a direct effect on the output variable. The correlations between the variables in the model and their coefficients are shown in Appendices 5.24 and 5.25 respectively.

Five variables in the final path model had a direct effect on landholders' attitudes to a permanent covenant uptake: economic dependence on the property, level of interest in long-term nature conservation, age of the respondent, attitudes to restrictions on land-use, and perceptions of the benefits of a permanent covenant. The direction of the coefficient values show that the less economically dependent the respondents are on their properties or the greater their interest in long-term nature conservation, the greater is their likelihood to have a positive attitude to a permanent covenant uptake. The direction of coefficient values also show that increases in positive attitude to restrictions on land-use and positive perceptions of benefits in a permanent covenant are likely to lead to a greater likelihood of a positive attitude towards taking up a permanent covenant.

In addition to the direct effect, the age of the respondent also had an indirect effect on attitudes to the uptake of a permanent covenant, which was mediated through perceptions of the benefits of a permanent covenant. The direction of the coefficient values for the direct effect of age on attitudes to taking up a permanent covenant show that younger landholders are more likely to take up a permanent covenant compared to older landholders. The indirect effect also shows that younger landholders are more likely to perceive permanent covenants to have benefits compared to older landholders.

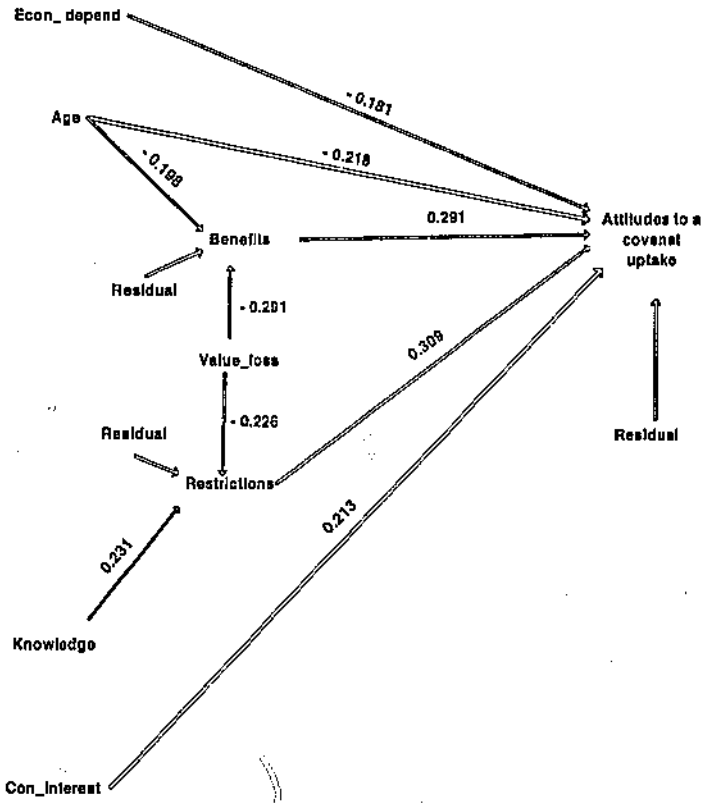


Figure 5. 1 Output (final) path model for landholders with no covenant or agreement in Victoria

Landholders' perceptions of the impact a covenant on land value and the level of knowledge about a permanent covenant had only an indirect effect on the output variable. The effect of the former is mediated through landholders' perceptions of the benefits of a permanent covenant (-0.291) and their attitudes to restrictions on land-use (-0.226). The effect of Knowledge, on the other hand, is only mediated through landholders' attitudes to restrictions on land-use. Although landholders' perceptions of loss in land value is a mediator

variable, none of its hypothesized predictor variables were retained in the model after the regression analysis.

The decreasing orders of direct and total influences of the retained variables in the final model on attitudes to a permanent covenant uptake are shown in Table 5.9. Of the seven variables retained in the final path model, landholders' attitudes to restrictions on land-use had the biggest direct and total effects on attitudes to a permanent covenant uptake. Although economic dependence on the land has a direct effect on attitudes to a permanent covenant uptake, it nevertheless had the smallest total effect of all variables in the model. Further explanation of the observed trends in model variable relationships is given in Section four of this chapter.

Table 5. 9 Decreasing order of influence on attitudes to a permanent covenant uptake of variables in the final model their for respondents without any covenant or agreement in Victoria

	Decreasing order of variable influence	
Variables	*Standardized beta coefficient values of direct effect	*Total standardized beta coefficient values (Sum of direct and indirect effects)
Restrictions	.309	0.309
Value_loss	-.140	-0.295
Benefits	.291	0.291
Age	-.218	-0.276
Knowledge	.153	0.224
Con_interest	.213	0.213
Econ_depend	-.181	-0.181

Note*: The bigger the standardized beta coefficient real value, the greater is influence of the variable on attitudes to a permanent covenant uptake

A summary of the final model including the explained variance is shown in Table 5.10. Thirty-seven percent of variance in the output variable is accounted for by the predictor variables in the model, as shown by the adjusted R^2 for the regression model value.

Table 5. 10 Model summary for respondents with no covenant or agreement in Victoria

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.639	.409	.373	.93	.409	11.545	7	117	.000

a. predictors: (constant), benefits, restrictions, age, conservation interest, economic dependence, knowledge, value_loss.
b. dependent variable: attitude to permanent covenant uptake

The outcome of the analysis of variance to test the fit of the model shown in Table 5.11 confirms a significant F statistics ($(F(7,70)=11.545, p<.01)$ which indicates a goodness of fit of the model. It also confirms that the set of variables in the final model is a good predictor of attitudes to a permanent covenant uptake.

Table 5. 11 Analysis of variance (ANOVA) for Path model for respondents with no covenant or agreement in Victoria

	Sum of Squares	df	Mean Square	F	Sig.
Regression	70.059	7	10.008	11.545	.000
Residual	101.429	117	.867		
Total	171.488	124			

a. predictors: (constant), benefits, restrictions, age, conservation interest, economic dependence, knowledge, value_loss.
b dependent variable: attitudes to permanent covenant uptake

5.2.2 Path analysis-Respondents with no covenant or agreement in Western Australia

The hypothesized input path model for non-holders of a covenant or agreement in holders in Western Australia is shown in Chapter 2: Figure 2.1. The seven variables retained in the first path model with a 0.01 level of significance are shown in Table 5.12. These were obtained from a regression of all predictor variables of the output variable (see chapter 2: Tables 2.2 and 2.3) from the dependent variable 'attitudes to a permanent covenant uptake'.

Table 5. 12 Coefficients table for the first path analysis model for respondents with no covenant or agreement in Western Australia

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.874	.572		5.028	.000	1.740	4.008
Con_interest	.183	.072	.194	2.554	.012	.041	.325
Fin_support	-.444	.138	-.251	-3.204	.002	-.718	-.169
Length	-.169	.058	-.219	-2.917	.004	-.283	-.054
Membership	.429	.112	.292	3.814	.000	.206	.652
Restrictions	.187	.055	.259	3.379	.001	.296	.077
Salinity	.137	.053	.199	2.586	.011	.032	.242
Benefits	.371	.076	.355	4.857	.000	.219	.523

a dependent variable: attitudes to a permanent covenant uptake

Of the seven variables, the only mediator variables retained in the model are 'Restrictions', 'Benefits', 'Value-loss' and 'Salinity'. Each of these mediator variables was taken as the dependent variables in the subsequent path analysis with their hypothesised predictor variables (see Table 5.5) regressed from the respective mediator variable.

Table 5.13 shows two predictor variables retained in the second path model after regressing the ten hypothesized predictors (see Table 5.5) from 'Attitudes to restrictions' as the dependent variable. These two variables show moderately strong beta coefficients and statistically significant relationships with the dependent variable at 95 percent level of confidence.

Table 5. 13 Coefficient of predictor variables of 'attitudes to restrictions of a permanent covenant' (respondents with no covenant or agreement in Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.688	.558		6.612	.000	2.582	4.794
ConRatio	2.038E-02	.009	.212	2.290	.024	.003	.038
Benefits	-.330	.135	.227	2.451	.016	.063	.597

a dependent variable: attitudes to permanent covenant restrictions.

Table 5.15 shows the only predictor variable, 'Value_loss' (0.297), which was retained in the third path model after regressing the hypothesized predictor variables (see Table 5.5) from 'Benefits' as the dependent variable.

Table 5. 14 Predictor variables for landholders' perceptions of benefits of a permanent covenant (Respondents with no covenant or agreement in Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.951	.325		9.074	.000	2.306	3.595
Value_loss	-.246	.076	-.297	-3.235	.002	-.397	-.095

a dependent variable: perception of permanent covenant benefits.

Only the variable 'length' (-0.214), shown in Table 5.15, was retained in the fourth path model after regressing the three hypothesized predictor variables (see Table 5.5) from 'Perceptions of a covenant effectiveness for salinity control'.

Table 5. 15 Predictor variables for perceptions of a permanent covenant's effectiveness for salinity control (Respondents with no covenant or agreement in Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4.528	.634		7.142	.000	3.271	5.785
Length	-.239	.105	-.214	-2.273	.025	-.447	-.031

a dependent variable: perception of permanent covenant's effectiveness for salinity control.

Figure 5.2 represents the final path model for non-holders of a covenant or agreement in Western Australia. The correlations between the variables entered in the final model and the estimated regression coefficients of the variables in the model are shown in Appendices 5.27 and 5.28 respectively.

All variables in the final path model, except 'Value loss' and 'ConRatio', have a direct effect on attitudes towards the uptake of a permanent covenant. The direction of the variables' beta coefficients show that the more positive the attitudes are towards restrictions of land-use (0.264), or the greater the perceptions of the effectiveness of a permanent covenant for salinity control (0.204) or perceptions of the benefits in a perceived covenant (0.336), the greater is a subject's likelihood to have a positive attitude to taking up a permanent covenant.

In addition, the directions of the beta coefficients for 'membership' (0.279), 'Fin_support' (-0.256), 'length' (-0.213), and 'Con_interest' (0.194), suggest that the larger the number of conservation groups to which subjects are associated, or the lower the frequency of reception of financial support, the greater the subjects' likelihood to have a positive attitude towards the uptake of a permanent covenant. Likewise the shorter the length of time the

property has been in the family or the greater the interest in long-term nature conservation, the greater the subjects' likelihood to have a positive attitude to taking up a permanent covenant.

The decreasing order of influence of the variables in the model on landholders' attitudes to a permanent covenant uptake is shown in Table 5.16. Of the nine variables retained in the final model, landholders' perceptions of the benefits of a permanent covenant (0.396) have the largest direct and total effects on landholders' attitudes to a permanent covenant uptake. The ratio of conservation area to total property size (0.077) has the smallest total effect on landholders' attitudes to a permanent covenant among the variables retained in the model.

Table 5. 16 Decreasing order of total influence of individual variables on attitudes to a permanent covenant uptake among respondents without any covenant or agreement in Western Australia

	Decreasing order of variable influence	
Variables	*Standardized beta coefficient values of direct effect	*Total standardized beta coefficient values (Sum of direct and indirect effects)
Benefits	.336	0.396
Membership	.279	0.279
Restrictions	.264	0.264
Length	-.213	-0.257
Fin_support	-.256	-0.256
Salinity	.204	0.204
Con_interest	.192	0.194
Value_loss	-.051	-0.151
ConRatio	.021	0.077

Note*: The bigger the standardized beta coefficient real value, the greater is influence of the variable on attitudes to a permanent covenant uptake

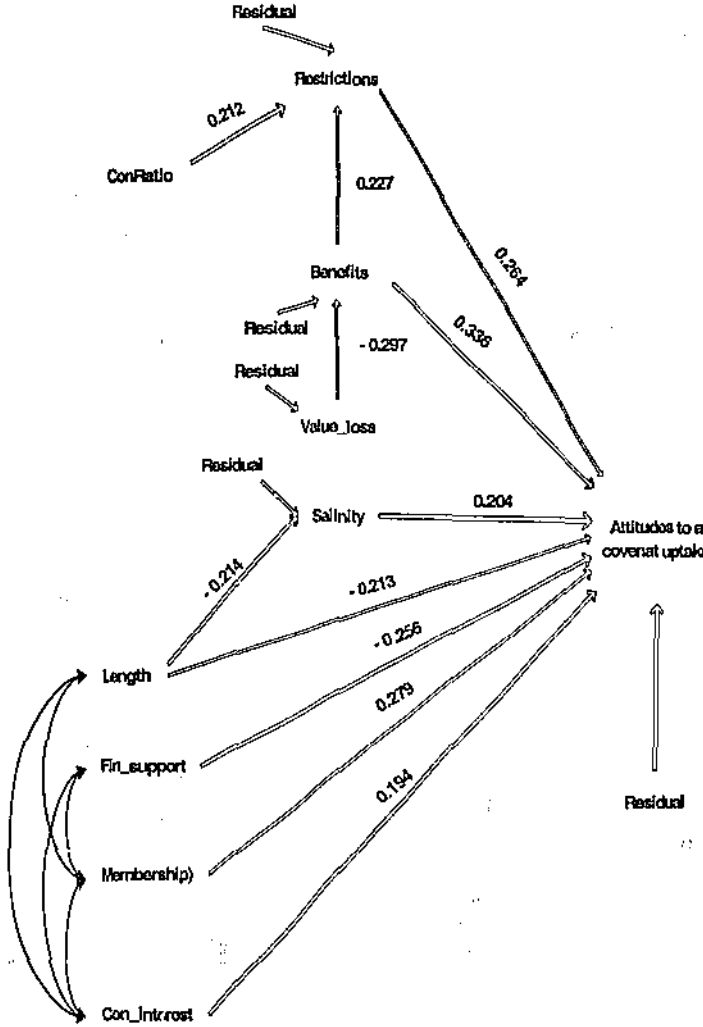


Figure 5.2 Output Path Model for landholders with no covenant or agreement in Western Australia

The results of the model summary (Table 5.17) show that the final model accounts for 44.5 percent of the variance (R^2). The analysis of variance to test the fit of the model (Table 5.18) shows that the entry of the set of predictor variables in the model yields a significant prediction equation, shown by a significant F statistic ($F(9,78)=10.7$) at $p<0.01$.

Table 5. 17 Path Model Summary for respondents with no covenant or agreement in Western Australia

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
				R Square Change	F Change	df1	df2	Sig. F Change
.701	.491	.445	.90	.491	10.708	9	100	.000

a. predictors: (constant), benefits, restrictions, age, con_interest, econ_depend, value_loss, length, fin_support, conratio, salinity, membership,
b. dependent variable: attitudes to a permanent covenant uptake

Table 5. 18 Analysis of variance (ANOVA) for respondents with no covenant or agreement in Western Australia

	Sum of Squares	df	Mean Square	F	Sig.
Regression	78.276	9	8.697	10.708	.000
Residual	81.224	100	.812		
Total	159.500	109			

a. predictors: (constant), benefits, restriction, age, con_interest, econ_depend, value_loss, length, fin_support, conratio, salinity, membership,
b. dependent variable: attitudes to a permanent covenant uptake

5.2.3 Path analysis- combined non-holders of covenant or agreement in Western Australia and Victoria

The predicted path model for the combined groups of respondents with no covenant or agreement in landholders in Victoria and Western Australia is shown in Figure 2.19 (Chapter 2). The eight variables retained in the initial path model after regressing 21 predictor variables that include the variable 'State' (Chapter 2: Table 2.2 and 2.3) from the dependent variable 'attitudes to a permanent covenant uptake' are shown in Table 5.19.

Table 5. 19 Coefficients table for the first path analysis model for combined respondents with no covenant or agreement in holders in Western Australia and Victoria

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.013	.567		5.313	.000	1.895	4.131
State	-.349	.148	-.145	-2.356	.019	-.641	-.057
Fin_support	-.200	.090	-.139	-2.214	.028	-.378	-.022
Con_interest	.207	.054	.211	3.812	.000	.100	.315
Length	-9.420E-02	.039	-.134	-2.437	.016	-.170	-.018
Membership	.349	.088	.222	3.961	.000	.176	.523
Restrictions	.179	.042	.235	4.261	.000	.096	.262
Salinity	.124	.041	.171	3.061	.003	.044	.204
Benefits	.332	.054	.341	6.158	.000	.226	.438

a. dependent variable: attitudes to a permanent covenant uptake

Table 5.20 shows the retained variables of the second path model at 0.05 level of significance. These were retained after regressing eight predictor variables (see Table 5.5) from 'Restrictions' as the dependent variable. Of the two variables, 'Value-loss' had the bigger effect on dependent variable 'Restrictions'.

Table 5. 20 Predictor variables for attitudes to restrictions on land use (Respondents with no covenant or agreement in Western Australia and Victoria)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	2.957	.437		6.759	.000
Con_interest	.169	.080	.132	2.120	.035
Value_loss	-.214	.070	-.191	-3.072	.002

a. dependent variable: attitudes to permanent covenant restrictions.

The only significant predictor variable 'Value_loss' (-0.286) retained in the third path model after regressing eleven hypothesized predictors variables from 'Benefits' as the dependent variables is shown in Table 5.21.

Table 5. 21 Predictor variables for landholders' perceptions of benefits of a permanent covenant (combined respondents with no covenant or agreement in Victoria and Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.957	.216		13.670	.000	2.531	3.383
Value_loss	-.247	.053	-.286	-4.686	.000	-.351	-.143

a. dependent variable: perception of permanent covenant benefits.

Of the five variables predicted to have an effect on landholders' perceptions of a covenant's effectiveness for salinity control (Table 5.5), only the variable, 'State' (-0.195), was retained in the fourth path model as shown in Table 5.22.

Table 5. 22 Predictor variables for landholders' perceptions of a permanent covenant's effectiveness for salinity control (respondents with no covenant or agreement in Victoria and Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4.435	.317		14.003	.000	3.811	5.059
State	-.649	.208	-.195	-3.123	.002	-1.059	-.240

a. dependent variable: perception of permanent covenant's effectiveness for salinity control.

Table 5.23 shows the two predictor variables ('State' and 'Knowledge') for the dependent variable 'Value_loss', which were retained in the fifth path model after regressing four hypothesized predictor variables (Table 5.5) from ' Value loss'. The coefficient values show quite clearly that 'knowledge' has the bigger effect (0.243) of the two variables on landholders' perceptions of the impact of a permanent covenant on land value. Increase in knowledge about permanent covenants is associated with an increase in perception of loss in land value because of taking up a permanent covenant.

Table 5. 23 Predictor variables for perceptions of a permanent covenant's loss in land value (respondents with no covenant or agreement in Victoria and Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.650	.278		13.118	.000	3.102	4.198
State	-.378	.175	-.132	-2.157	.032	-.723	-.033
Knowledge	.330	.083	.243	3.965	.000	.166	.494

a. dependent variable: perceptions of a permanent covenant's loss in land value.

The final path model of the combined Victoria and Western Australia for respondents with no covenant or agreement is illustrated in Figure 5.3. The estimated coefficients used to derive the final path model and the correlations between the variables entered in the model are shown in Appendices 5.29 and 5.30 respectively.

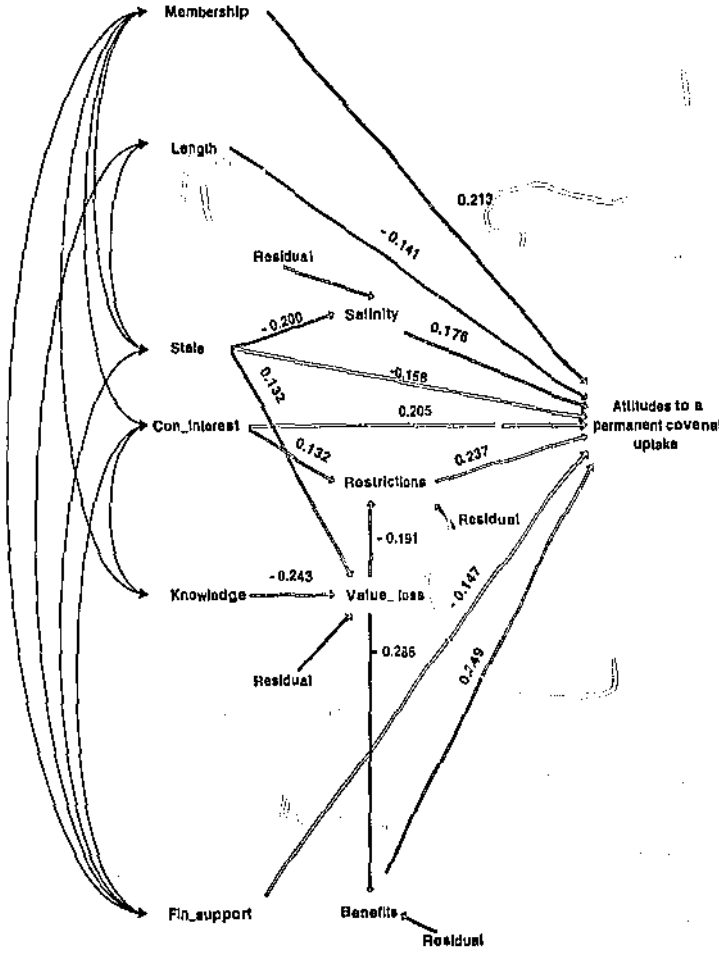


Figure 5.3 Final output path model for combined non-holders of covenant or agreement in Victoria and Western Australia

Eight of the variables retained in the final path model have a direct effect on the landholders' attitudes to a permanent covenant uptake (Figure 5.3). Two of these variables namely, 'State' and 'Con_interest' have, in addition, indirect effects. Landholders' perceptions of the impact of a permanent covenant on land value have only indirect effects on attitudes to permanent covenant uptake mediated through landholders' attitudes to restrictions on land-use and their perceptions of the benefits of a permanent covenant. 'Knowledge' also has only an indirect effect on attitudes to a permanent covenant uptake that is completely mediated through perceptions of loss in land value.

The directions of the regression coefficients in Figure 5.3 suggest that the larger the number of conservation groups a landholder is associated with, or the shorter the period that the property has been in the family ownership, the more likely she/he is to have a positive attitude to a permanent covenant uptake compared to others. Similarly, the greater the interest in long-term conservation, or the fewer the number of times a landholder has received financial support, or the more a landholder knows about permanent covenant, the more likely she/he is to have a positive attitude to a permanent covenant uptake compared to others. In addition, the direction of the regression coefficient for 'State' indicates that landholders in Victoria are more likely to have a positive attitude to a permanent covenant uptake compared to those in Western Australia with stronger direct effect (-0.158) than the sum of the indirect effects (0.054).

Table 5.24 shows the predictor variables retained in the final path model in their decreasing order of influence on landholders' attitudes to a permanent covenant uptake. Perceptions of the benefits of a permanent covenant have the gre. st effect on the attitudes of landholders to a permanent covenant uptake (0.349).

Table 5. 24 Decreasing order of total influence (sum of direct and indirect influences and non-significant influences where there is no direct influence) of individual variables on attitudes to a permanent covenant uptake among combined Victoria and Western Australia respondents with no covenant or agreement

Variables	*Standardized beta coefficient values of direct effect	*Total standardized beta coefficient values (Sum of direct and indirect effects)
Benefit	.349	.349
Restrictions	.237	.237
Con_interest	.205	.205
Membership	.213	.213
State	-.158	-.158
Value_loss	-.042	-.187
Salinity	.176	.176
Fin_support	-.147	-.147
Length	-.141	-.141
Knowledge	.086	.097

Note*: The bigger the standardized beta coefficient absolute value, the greater is influence of the variable on attitudes to a permanent covenant uptake

The effect of landholders' attitudes to restrictions on land-use on their attitudes to permanent covenant uptake is ranked second in decreasing order of strength of the variables retained in the final path model. Despite its significant effect on landholders' perception of the impact of a permanent covenant on land value, 'Knowledge' has the smallest total effect on attitudes to a permanent covenant uptake, of the variables in the final path model (Table 5.24).

The model summary (Table 5.25) shows the final path model accounts for 41.5 percent of the variance (adjusted R2). A significant F statistic of 15.846 at p=0.01 shown in the results of the ANOVA (Table 5.26) demonstrates a good fit of the output path model.

Table 5. 25 Path Model Summary for combined respondents with no covenant or agreement in Victoria and Western Australia

R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
				R Square Change	F Change	df1	df2	Sig. F Change	
.666	.443	.415	.92	.443	15.846	10	199	.000	1.999

a. predictors: (Constant), fin_support, con_interest, length, knowledge, benefits, salinity, membership, restrictions, value_loss, state.
b. dependent variable: attitudes to a permanent covenant uptake

Table 5. 26 ANOVA test of the model fit for combined Victoria and Western Australia respondents with no covenant or agreement

	Sum of Squares	df	Mean Square	F	Sig.
Regression	135.260	10	13.526	15.846	.000
Residual	169.864	199	.854		
Total	305.124	209			

a. predictors: (constant), fin_support, con_interest, length, knowledge, benefits, salinity, membership, restrictions, value_loss, State.
b. dependent variable: attitudes to a permanent covenant uptake

Section Three: Results of Qualitative analysis -Respondents with no covenant or agreement in Victoria and Western Australia

5.3.1 Views in Victoria on State and Local government policies or actions as incentives for a permanent covenant uptake

A summary of the specific issues or views held by non-holders of a covenant or agreement in Victoria on policy actions that State government can implement to motivate the uptake of a permanent covenant are shown in Table 5.27. Financial incentives and technical support in the form of management assistance and weed control programs were the two most popular incentives cited.

Table 5. 27 Views of respondents with no covenant or agreement in Victoria on the State Government policies or actions as incentives

Incentive group (Number of cases)	No of respondents	Incentive subgroup
Financial Incentives (28)	9	Tax exemption and subsidies
	19	Financial assistance/ incentives
Technical support and services (25)	17	Provision of support and advice on management and planning
	4	Assistance with weed and vermin control
	1	Assistance with labour
	3	Support to landcare groups
Equity response (20)	20	Compensation
Management and administration (13)	2	Flexibility of permanent covenant agreement
	1	Restructure/ Streamline funding process
	3	Lead by example
	3	Coordination and management
	2	Remove bureaucracy and increase conservation interest
	2	Stop coercion
Education, information and awareness (8)	8	Education, awareness and information on conservation and covenants
Policy issues (5)	2	Formulate policy and land valuation criteria
	3	Buy back land

Respondents cite five policy actions which they view the local government should put in place in order to motivate the voluntary uptake of permanent covenants as shown in Table 5.28. Financial incentives and technical support are the most popular incentives cited for local government action, as is the case at State government level.

Table 5. 28 Views of respondents with no covenant or agreement in Victoria on the local government policies or actions as incentives

Incentive group (Number of cases)	Number of respondents	Incentive subgroup
Financial incentives (31)	27	Rate rebates
	4	Financial support
Technical support services (20)	5	Advice on conservation
	6	Support control of weed and vermin
	7	Provision of equipment and labour
	2	Infrastructural support
Policy, Legislation and enforcement (10)	4	Conservation policy support
	6	Control and Enforcement of conservation legislation
Education, information and awareness (10)	5	Publicity and information
	5	Education and awareness
Moral encouragement (6)	6	Encouragement

Several issues contained in Table 5.29 were raised by the respondents to clarify the reasons for their lack of interest in permanent covenants. The main ones were landholders' reservations about the necessity and effectiveness of permanent covenants, apprehension about the loss of control over the land, and their desire to exclude all government involvement in conservation on private land.

Table 5. 29 Reasons advanced for lack of interest in permanent covenants by respondents without a covenant or agreement in Victoria

Issues about covenants uptake	Number of respondents	Comments by respondents
Reservations about covenant necessity and effectiveness	10	• covenants might not be the right conservation strategies in the future just like past land clearing policies • nature conservation is being overly extended in covenants • public awareness and landholder participation are sufficient conservation strategies • covenants may not be necessary as more people start to appreciate the need for conservation on their property • apprehensive about rigidity of a covenant, prefer mutual trust agreements as conservation may prove possible to co-exist with some other form of commercial enterprise
Apprehension about loss of control	5	• apprehensive about the possible loss of control over property • covenants are an infringement of property rights
Keep off landholders	5	• conservation on private land is a personal matter • restriction on clearing of land are unjust • conservation should be encouraged without imposing covenants • enough land already locked up for conservation by Government

5.3.2 Views in Western Australia on State and Local government policies or actions as incentives for a permanent covenant uptake

The views of non-holders of a covenant or agreement in Western Australia on the actions or policies that State government should implement in order to motivate landholders to take up a permanent covenant are outlined in Table 5.30. Education and awareness on nature conservation and covenants had the highest citing by the respondents, followed by a requirement for equity in form of compensatory measures.

Table 5. 30 Views of respondents with no covenant or agreement in Western Australia on the State Government policies or actions as incentives

Incentive group (Number of cases)	Number of respondents	Incentive subgroup
Education and public awareness (16)	16	Education, information and public awareness
Equity (12)	12	Equity in form of compensation
Financial incentives (11)	7	Financial support
	4	Support /compensate shires
Management and administration (10)	3	Management accountability
	7	Reduce/ Remove bureaucracy and involve landowners
Policy action (9)	4	Better government policy
	5	Land purchase
Technical support services (6)	6	Provision or labour and material

Four actions that the respondents in Western Australia suggested for implementation by local government as motivation for landholders' uptake of a permanent covenant in Western Australia are outlined in Table 5.31. Financial incentives in form of rates rebate and different forms of financial support, followed by the need for better management and administration were the two most popular cited incentives.

Table 5. 31 Views of respondents with no covenant or agreement in Western Australia on the local government policies or actions as incentives

Incentive group (Number of cases)	Number of respondents	Incentive subgroup
Financial incentives (25)	15	Rate rebates
	10	Financial support
Management and administration (14)	7	Better planning, policies and management
	3	Consult farmers
	4	Facilitation and coordination role
Technical support services (12)	4	Advice and demonstration
	3	Support infrastructure
	2	Support with manual work
Non participation of government or landholders (9)	9	Don't involve local government

Respondents provided five additional issues in other comments on permanent covenants and nature conservation as follows:

(1) Mechanisms for delivery of financial incentives:

(a) funding only large conservation areas: "Small areas of bush can be a costly nuisance and only large areas should receive public money and support";

(b) funding for fencing, tree planting, Lucerne establishment, regeneration, and earthworks, as "income tax concession do not always help farmers that have had a poor season. e.g., rust, drought, poor price, fuel fertilisers etc";

(c) targeting available government funds on conservation out in the country and not on office work;

(d) tax deduction (100%) in the first year on any land on which conservation work done;

(e) removal or concession on the payment of rates on an area under a covenant;

(f) provision of financial help for conservation but without the underlying restrictions.

(2) Compensation: Some of the reasons given by respondents on why and under what circumstances compensation should be provided were as follows:

"If a landholder has a significant amount of remnant vegetation and is not allowed to clear it, then they should be compensated and a permanent covenant placed on it."

"I see the biggest issues as compensation. Some farmers cleared all their land while others that left large areas of bushland because they have more foresight are now being penalized and told they will receive nothing."

"It is in the public interest that these areas be conserved but to date farmers have taken on the burden financially and the work load..."

(3) Public's role in conservation: Six respondents argued that the public should contribute to conservation on private lands. The main reason cited to justify the necessity for such contribution is that society demands the conservation and benefits from it, and society should therefore contribute equitably to its protection.

(4) No to covenants: Twenty-four respondents stated their reservation or outright opposition to permanent covenant uptake. The details of responses are contained in Appendix 5.36. Briefly, the various reasons cited were that landholders should be left to make their own decisions, a concern for loss of control of land, and a view that covenants were not a good conservation policy. In addition, respondents stated that covenants were not economically viable and flexible enough; and lack of sufficient encouragement and example to take up a

permanent covenant. Further, covenants were viewed as economically inequitable and unnecessary for personal conservation needs.

(5) Examples of useful covenant mechanism and arrangements: Eleven landholders provided insight on some covenant mechanisms and arrangements that can encourage landholders to take up a covenant. These include the incorporation of a mechanism for review if circumstances change, and issuance of separate title deeds for nature conservation areas. Other mechanisms included education and encouragement in the value of preserving nature for nature's enjoyment, and simplification of covenant funding mechanism.

5.3.3 Summary

The similarities observed between the two States were in respect to the level of knowledge about permanent covenants, long-term goals of the properties, interest in long-term nature conservation, outlook on property rights, and equity concerns in conservation. The differences were mainly in respect to property characteristics, economic factors, and perceptions and attitudes to permanent covenant.

Several reasons were cited for non-approval of permanent covenants: a view of permanent covenants as unnecessary for conservation on their particular property, apprehension about loss of control of their property, perception of covenants as a non-viable conservation tool and approach. Other reasons for non-approval of permanent covenants included inequitable financial implications of taking up a covenant, the view that covenants as lacked flexibility, and the lack of good examples in conservation and encouragement from governments to take up a covenant.

Eight categories of policies and actions by State and local government for encouraging the uptake of permanent covenants were identified by respondents: provision of financial incentives and various technical support and services, management and administrative restructuring of conservation support mechanisms, and assurance of equity in the sharing of various conservation costs. Other categories included non-financial recognition of landholders' contribution to conservation, inclusion of education, information and awareness programs on covenants in various forums, articulation of clear policy on land valuation criteria, mechanism for purchase of land of high conservation value where the landholder was unwilling to place a covenant on it. The last category is the need for non-involvement of government in the covenant arrangements.

The three most popular of the eight category issues raised by the respondents in decreasing order were requirement for financial incentives, addressing of equity concerns, and provision of technical support and services.

Section Four: Brief Discussion of Main Findings

The following discussion focuses on the similarities and differences between the two categories of non-holders of a covenant and agreement in Victoria and Western Australia. A brief explanation is also given on the important trends observed in the study in respect to landholders' attitudes and likelihood of a permanent covenant uptake. An introduction to the concepts that emerge from the findings is made.

5.4.1 Knowledge and awareness about a permanent covenant

A large cross-section of landholders in both States had never heard about a permanent covenant before this study. Moreover, many were not aware of the covenant programs in their State. This is despite the fact that covenant programs or schemes (i.e. Trust for Nature in Victoria and Remnant Vegetation Protection Scheme in Western Australia) have existed over several years in both States.

Although there was no statistically significant relationship between the level of knowledge about permanent covenants and landholders' attitudes to taking up a permanent covenant in either States, landholders' level of knowledge had an indirect influence on their attitudes to a permanent covenant uptake in Victoria though its influence on landholders' attitudes to a covenant's restrictions on land-use. As landholders' knowledge about permanent covenant in Victoria increases, their likelihood that they have a positive attitude to restrictions on land-use also increases. This in turn leads to increased likelihood of taking up a permanent covenant.

Evidently, the lack of familiarity with covenant programs was more pronounced among landholders who were associated with a few conservation groups than among those that were associated with many conservation groups. It can be concluded that as the number of associations with conservation groups increased, the greater the chances of a landholder to know about permanent covenants and programs. Secondly, an association with a large number of conservation groups is a likely result of greater interest in long-term conservation than non-association or association with a small number conservation groups. Landholders that have a great interest in long-term nature conservation are more likely to look out for information on conservation mechanisms than those with little or no interest in nature conservation. There is a need for covenanting organizations' to enlist more conservation groups in publicity and awareness activities on covenant mechanisms and programmes among landholders with whom they work.

Comments by several landholders recognise that an increase in education, awareness and information on permanent covenants and the importance of conservation are necessary approaches for encouraging the uptake of permanent covenants. These findings are consistent with similar views of other landholders reported in Chapter one (e.g. Jenkins, 1998; Millar, 1998). Evidently, any measures aimed at creating greater awareness of permanent covenant, particularly in Western Australia should seek to confirm the ability of permanent covenants to assure long-term nature conservation, and clarify the nature and terms of restrictions on land use that apply to covenants. The study findings point out that education and awareness of covenants and nature conservation values along with other incentives for promoting the uptake of permanent covenants such as non-monetary recognition of covenant holders are necessary for motivating the uptake of permanent covenants.

5.4.2 Attitudes to imposed restrictions

Landholders in both the states of Victoria and Western Australia showed strong relationships between attitudes to imposed restrictions and likelihood to take up a permanent covenant. However, the two categories of landholders differed in the factors that influenced their attitudes to restrictions on land-use. Although there is similarity in the strength and direction of the influence of landholders' attitudes to restrictions on land-use on their uptake of permanent covenants, the study findings point out the need for a different approach in each State to address landholders' attitudes to restrictions on land-use. In Victoria, landholders' attitudes to restrictions on land-use were partly influenced by their perceptions of the impact of a permanent covenant on the land value, and their level of knowledge about permanent covenants. In contrast to Victoria, landholders' attitudes to restrictions on land-use in Western Australia were partly influenced by their perceptions of the benefits of a permanent covenant and the proportion of conservation area to total area of the property.

In the combined categories of landholders in Victoria and Western Australia, landholders' attitudes to restrictions on land-use were partly attributed to their level of interest in long-term nature conservation and by their perception of loss in value of land because of placing a permanent covenant on it. Of the two explanatory variables, interest in long-term nature conservation had the bigger effect on landholders' attitudes to restriction on land-use.

The attitudes expressed by landholders on the restrictions imposed on land use conceptually relate to their perceptions of what constitutes their private property rights and their level of willingness to forfeit some of those rights. In encapsulating the apprehension about entering a conservation arrangement because of loss of property rights, one of the landholders noted that landholders view such restrictions as "*...a move by governments to control*

their land in an already over-governed State". Another landholder clarified that the apprehension among landholders of government motives in covenants was the result of mistrust, which has developed over time. This and other similar comments by the landholders illustrate the attachment many landholders have to their properties and their apprehension to a permanent covenant uptake. The comments also show landholders' perspectives on private property rights as it affects nature conservation areas on private land.

5.4.3 Perception of covenant impact on land value

The large proportion of respondents in both States that perceived a permanent covenant to lead to loss in market value of their property can be attributed to their awareness of the actual property market prices, which presently (2003) indicate actual loss in market value for properties that are encumbered with a covenant in parts of Australia. In the combined categories of landholders in Victoria and Western Australia, the State in which a landholder is based has an effect on their perceptions of the impact of a permanent covenant on land value. Landholders in Victoria are less likely to perceive permanent covenants to lead to loss in land value compared to landholders in Western Australia. Further discussion on landholders' perceptions of the impact of a permanent covenant on land value is present in chapter 6.

5.4.4 Benefits of a covenant

A lack of perception of the benefits of a permanent covenant was evident among the majority of landholders in both States. Landholders' perceptions of the benefits of a permanent covenant in Western Australia and in the combined categories of landholders from both States were partly attributed to their perceptions of loss in value of land because of placing a permanent covenant on it. The direction of the coefficient for the effect of 'Value_loss' on 'benefits' showed that landholders who perceive permanent covenants to lead to loss in land value were less likely to perceive the benefits of permanent covenant covenants compared to those that did not perceive such loss in land value.

The indirect effect of age mediated through landholders' perceptions of the benefits of a permanent covenant in Victoria suggests that younger landholders were more likely to perceive the benefits of a permanent covenant compared to older landholders. Landholders' perceptions of the benefits that can be derived from a permanent covenant conceptually influence their confidence in the permanent covenant mechanism. This is particularly so when the benefits are not clear (Guerin, 1999; Hollick, 1990) or when they cannot be realized within the landholders' timeframe for achieving the goals of the land.

The significant relationship between perceptions of benefits and attitudes to the uptake of a permanent covenant in both States strongly points out the need to explain the provisions in a permanent covenant to landholders. These include measures that are being developed and those that have already taken by government, such as the Tax offset of loss in value of land that has a permanent covenant (Income Tax Assessment Act 1997 pursuant to the Taxation Laws Amendment Act (No. 8) 2003)). Following the amendment, landowners can now claim deductions in relation to any decrease in land values caused by entering a conservation covenant in perpetuity with the Commonwealth, State/Territory or local governments.

In addition to providing information on covenants, information and awareness programmes need to point out the types and levels of benefit available in placing a covenant on the land and how landholders can access such benefits.

5.4.5 Other variables

Although the majority of landholders in both States were more than 50 percent economically dependent on their properties, the dependence was more pronounced in Western Australia than Victoria. The greater remoteness of farm-holdings in Western Australia from urban centres compared to those in Victoria makes it more difficult for landholders in Western Australia to engage in other forms of employment away from the farm. Therefore, landholders in Victoria were more similar, in respect to economic dependence on the land, to permanent covenant holders than were landholders in Western Australia.

Landholders' perceptions of the effectiveness of permanent covenants as salinity control measures in Western Australia are partly attributed to the length of time that the property has been in a landholder's family. The longer that landholders have had their properties in the family, the less likely they are to perceive permanent covenants as effective measures for salinity control than those that have had the properties in the family over a shorter period. However, the direct effect of the length of time that a property has been in the family on attitudes to permanent covenant was stronger than its indirect effect.

In the combined categories of landholders in Victoria and Western Australia, the effect of landholders' perception' of a permanent covenant's effectiveness as a salinity control measure on their attitudes to a permanent covenant uptake was partly attributed to the State in which landholders are based. Landholders in Western Australia are less likely to perceive permanent covenants as effective salinity control measures, compared to landholders in Victoria. The greater negativity to permanent covenants in Western Australia compared to Victoria may account for the greater scepticism of a permanent covenant's ability to act as a salinity control measure, among landholders in Western Australia than in Victoria.

The length of time that the property has been in the family, and the number of organizations that a landholder is associated with, had an effect on their attitudes to a permanent covenant uptake only in Western Australia. The possible explanation for this observation is the lesser attachment to the property by landholders with the shorter length of property ownership in the family than the attachment of landholders with longer period of family ownership of property. Lesser attachment to property is associated with greater acceptance and openness to new concepts or changes to land management, while stronger attachment is associated with established way of managing properties, and less tolerance to new ideas of managing land.

Landholders in Western Australia that were associated with a large number of conservation groups were more likely to have a positive attitude to uptake of a permanent covenant compared to those that were associated with fewer or with no conservation groups. It is likely that the number of conservation groups that a landholder is associated with is a proxy measure of their level of interest in nature conservation. This is strongly suggested by a significant positive correlation between membership of associations and interest in long-term nature conservation in the path model. The increasing number of conservation groups to which a subject is associated is correlated with an increase in interest in nature conservation.

Age had a direct and indirect influence on landholders' attitudes to a permanent covenant uptake in Victoria, suggesting younger respondents were more likely to have a positive attitude to permanent covenant uptake compared to older ones. Cary (2001) found age to have little influence on individual adoption of management practices and concluded that even where a relationship occurs it is unlikely to be linear. He further observed that among older landholders approaching retirement the relationship between age and adoption of innovation that require large investments is mediated by income.

A possible explanation for younger landholders' greater likelihood to have a positive attitude to permanent covenant uptake is related to a significant correlation established between familiarity with covenant programs and age, which showed younger landholders as more likely to be familiar with the covenant programs in their State compared to older respondents. In this case, familiarity with covenant programs in the State among landholders is linked to clearer and greater understanding of permanent covenants and their benefits, resulting in lesser apprehension about a permanent covenant uptake.

Another explanation of the observed relationships between landholder's age, the length of time that the property has been in the family and attitudes to permanent covenant uptake, is the influence of past behaviour. Social Information Theory maintains that past behaviour affects the construction of attitudes and present behaviours (Goldman, 2001). In this context,

past government policies in Australia directly or indirectly discouraged nature conservation on private land that had potential for agriculture. Nature conservation was therefore viewed by landholders as a government domain, to be restricted to protected areas such as national parks and nature reserves (Farrier, 1995).

Past practices and a mindset created among older landholders for non-involvement in nature conservation on the farm, suggest that older landholders who lived in the old government policy era, and those that have had properties in the family over a longer period are more likely to have a negative attitude towards the uptake of a permanent covenant compared to others. However, it is unclear why age is only significant in influencing attitudes to uptake of a permanent covenant among landholders without any covenant or agreement in Victoria and not among other landholder categories. But this lack of clarity is not unique to this study as literature shows contradictory findings on the relationship between age and adoption of agricultural innovations (Cary, 2001).

5.4.6 Economic incentives

Landholders recommended several economic incentive measures for encouraging the uptake of permanent covenants: funding from the State Government to cover the costs of covenant title search, legal cost of entering a covenant, and cost of maintaining the area under a covenant. Financial assistance from the State Government was also needed to cover the cost of fencing, assistance with weed and vermin control, and assistance with labour to carry out required conservation work under a covenant. Landholders are quite clear on how and why they expect the delivery of these incentives. Three of the ways that they recommended on how the incentives could be delivered in both States were direct funding, tax rebate and reduction in land taxes. The justification for the incentives was summarised in comments by two landholders:

> "*...The Governments should have a look at successful and well-managed conservation areas and acknowledge the human and financial contribution required for such partnership arrangements between the landholders and government*", and
>
> "*The only way I can see voluntary covenants working is to offer financial incentives for this to occur. I would love to have the farm looking like a park with lots of fenced off vegetation but I cannot because every hectare counts with today's current tight margins.*"

A cross-section of landholders were content to receive fencing costs to cover only the material, while others viewed it necessary to also include the cost of erecting the fence. The types of financial incentives cited by the respondents concur with those of other landholders reported by Jenkins (1998) and (Productivity Commission., 2001). Even when financial

incentives such as tax deductibility for conservation work were already in place, some landholders felt this was not sufficient in meeting the financial needs for conservation for some landholders. To amplify this, one landholder stated "*...this is not sufficient help when a great percentage of farmers at the moment aren't making enough money to pay tax*".

Evidently, the view of landholders that permanent covenants have a cost implication that is beyond what they are willing to bear is a deterrent to the uptake of covenant. Further discussion on incentive measures for permanent covenant uptake is provided in chapter 6.

5.4.7 Compensation as equity

Irrespective of their attitudes to a permanent covenant uptake, the majority of landholders clearly point out the need for incentives and compensatory measures to encourage uptake of permanent covenants. Some of the compensatory measures and their justification cited by landholders include the provision of annual management fees to cover the cost of working and maintaining the areas under a covenant, and the waiver of stamp duty on the land under a covenant to compensate for loss in market value of the property because of a covenant. Reduction in land taxes by the State Government to compensate for land taken out of production or placed under grazing restrictions is also cited. Further discussions on equity issues in permanent covenant uptake are presented in chapter 6.

The next chapter presents a discussion on the key issues that have emerged from the findings of this chapter and the previous two chapters.

Chapter 6

Final Discussion

The relationship between people and landscapes is about communities and their institutions: the law, economy, society, organisations, policies and social values, in others, and how these relationships impact upon and determine our use of resources. Charles Willcocks, *Land & Water Australia, July 2001*

This chapter presents a discussion of the overall findings of the study. An introduction and description of conceptual models that were constructed from the research findings, showing the factor relationships in a covenant uptake are presented in section one. The second section of the chapter discusses the conceptual model in relation to five constructs, showing the similarities and differences in their influences on the uptake of a permanent covenant among the different categories on landholders.

Attention is drawn to the consistency of the constructs and other factors and policy tools represented in the model with relevant theory and literature. Argument is made for the incorporation of these constructs in policy and programs aimed at supporting nature conservation on private land and the uptake of permanent covenant in particular. Discussion on incentive measures for uptake of permanent covenant and justification for their use is also presented.

Section three contains conclusions of the chapter, and of the thesis.

Section one: Overview of findings and discussion setting

Introduction

This thesis sets out to investigate and further the understanding of factors that have influenced and are likely to influence decisions of landholders regarding the uptake of permanent covenants, and the incentive measures necessary for encouraging the uptake of permanent covenant in Australia. The study was exploratory and largely guided by the research data, and supported by theory and literature on adoption of agricultural conservation practices and innovations on private land, economic decision-making, motivation and social policy theories. These theories and empirical literature were also the basis for the selection of several variables that were hypothesized in Chapter 1 to underlay the decision of landholders on the uptake of a permanent covenant.

Research questions were set in this study to establish:

- whether there are factors that typically characterise landholders who have a permanent covenant and whether there are relationships between landholders' likelihood of uptake of a permanent covenant and several exogenous and endogenous factors of landholders/properties included in the study.

- the specific barriers to landholders' uptake of a permanent covenant, and incentive measures that can be used effectively by state and local governments and appointed covenant agencies to motivate the uptake of permanent covenants on private land.

This chapter contains a discussion of the research findings contained in the previous three chapters and their implications for policy and programs for nature conservation on private land. A comparative approach showing the similarities and differences between all the different landholder categories is used in the discussion.

6.1.2 General likelihood of, and policy setting for, conservation covenant uptake

Permanent covenants are essentially voluntary regulatory mechanisms that serve as alternatives to government-imposed regulations. Their use is politically expedient as they help government to achieve the desired conservation strategy on private land without the appearance of imposition of rules and conditions or change of land ownership, and in a cost effective and efficient way. However, permanent covenants have not attracted widespread

uptake because among other factors landholders view them with suspicion as they see them as a disguised form of government regulation.

The observations made from landholder responses to permanent covenant uptake in this study have some potential implications for national policies for conservation on private land. For example, there were larger proportions of fixed-term covenant and fixed-term agreement holders in both Victoria and Western Australia that were positive towards the uptake of permanent covenants than there were non-holders of covenant or agreement. This trend reveals and demonstrates a hitherto unrecognized transition of increasing likelihood of permanent covenant uptake, from non-holders of a covenant or agreement to fixed-term holders of covenant or agreement. In that respect policy measures aimed at encouraging non-holders of a covenant or agreement to take up permanent covenants are likely to make gains if they encouraged the use of fixed-term covenants or fixed-term agreements as transitions towards uptake of permanent covenants. In such a transition, landholders would have the opportunity to learn about, and explore similar attributes to those of permanent covenant in a less encumbering and 'threatening' environment.

A comparison between States showed that Victoria had an overall larger proportion of landholders with a likelihood of taking up a permanent covenant than Western Australia. The difference between the two States may be attributed to widespread awareness of permanent covenants in Victoria resulting from a longer period of actively operational covenanting programs under the Trust for Nature than in Western Australia under the Department of Agriculture, the Department of Conservation and Land Management (CALM), and the National Trust of Western Australia. The negative attitudes to permanent covenants by a segment of landholders in Western Australia that were dissatisfied with its conditional terms may also have promoted negative sentiments towards covenants in Western Australia. This latter likelihood highlights the potential impact of closely related agreements or covenant mechanisms on each other and calls for care to minimise such negative impacts during planning and setting up of management agreements. An impact assessment of the actions proposed under the agreement program before its launch may pre-empt such negative impacts on other closely related nature conservation programs.

The decisions of landholders on the uptake of permanent covenants are influenced directly and/or indirectly by several interactive factors (represented by individual or collective variables). This confirms the hypothesis of the study set in chapter one. These factors differ in composition according to different categories of landholders (for example, categories based on the type of conservation agreement held or the State or Territory of operation). However, the factors can be broadly classified into five principal constructs that include:

- strength of nature conservation ethic,
- level of confidence in the permanent covenant mechanisms,
- level of economic dependence on the property,
- view on property rights regime, and
- nature conservation equity.

Although the influence of multiple factors on landholders' decisions to adopt or accept conservation programs is widely recognized as stated in Chapter 1, the influence of collective factor on the uptake of permanent covenant and their relative individual strength have not been discussed nor clarified adequately.

Conceptual models are often used to describe complex system processes to policy makers and the public. Although they do not represent the complete system, they provide opportunity that they be developed further or revised with availability of more information and they also help to derive universal principles, which can be applied to a variety of situations (Heemskerk, Wilson, & Pavao-Zuckerman, 2003)

The following discussion in Section 2 centres on a series of conceptual models (Figure 6.1 to 6.4) derived from the findings of this study, which expound on the principles that underpin the uptake of nature conservation covenants on private land. Description of each of the model components is carried out for each of the five constructs outlined above. Some of the policy and program measures that have the potential to support the uptake of permanent covenants and delivery of long-term conservation outcomes on private land are also discussed.

Section 2: Conservation covenant decision constructs and their policy implication

Introduction

In this section, it is argued that the five principal constructs i.e., nature conservation ethic, confidence in a covenant mechanisms, property rights, conservation equity, and economic situation are key factors for the achievement of nature conservation on private land and in influencing landholders' uptake of a permanent covenants. It is pointed out that despite the acknowledgement by government of the important role of the said constructs, conservation policies and strategies to support this importance have not been translated into concerted and coordinated actions that are capable of delivering major change to the conservation behaviour in landholders. The necessary tools and actions for promoting nature conservation on private lands and building a nature conservation ethic in landholders and the public are discussed.

6.2.1 Nature conservation ethic

Nature conservation ethic is one of the five principal constructs in the decision on the uptake of a permanent covenant. A conceptual model illustrating the interaction of factors that influence nature conservation ethic is shown in Figure 6.1.

Landholders in this study pointed out three non-mutually exclusive essentials for building a conservation ethic:

- increased awareness and understanding of the relationship between the natural environment and humans,
- increased awareness and understanding of the importance of biodiversity on individual properties for maintaining and enhancing biodiversity objectives at local, regional and national scales,
- stressing the value of each specific landholder's contribution to conserving biodiversity.

These are represented in the conceptual model as 'links to human well being' and 'perceptions of benefits'

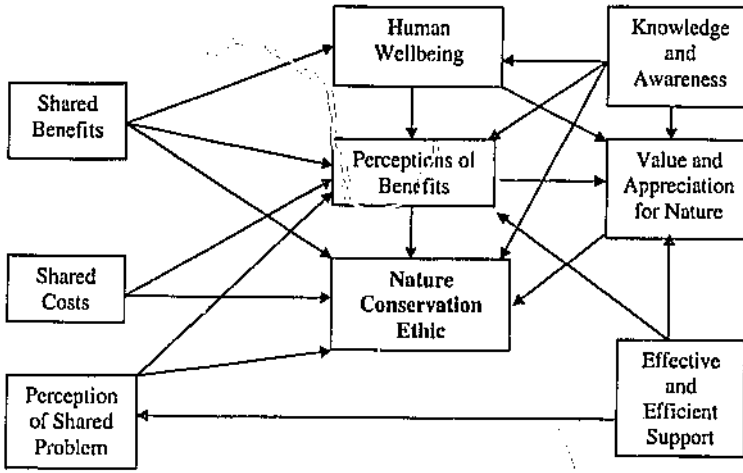


Figure 6. 1 Conceptual Model showing the interactions of factors in influencing nature conservation ethic

Note: The direction of arrows points from influencing factors to the influenced factors.

Some of the other components of a nature conservation ethic in this study are demonstrable interest in, and value accorded to, nature as evidenced by permanent covenant holders. These components are illustrated in the conceptual model (Figure 6.1) as 'Value and Appreciation for Nature'. They conform with findings by Beedell & Rehman (2000) which showed that farmers with strong environmental awareness were more likely to have positive attitudes towards hedge management as a conservation measure than were those who possessed lesser environmental awareness.

Landholders that have a predominantly utilitarian objective for land management are unlikely to appreciate the conservation values on their properties. Although this may be changing with the emergence of ecological agriculture, past detachment of a "techno-scientific" perspective of commercial agriculture from an ethics perspective (Lindholm, 1997) means that many landholders still do not see the value of conservation. This is expressed in two examples of comments by landholders in the study:

"People need to see the value of conserving native ecosystems on their land, whether that means a benefit to their agricultural enterprise or an appreciation of the ecosystem itself. If nature conservation covenants are to increase, big efforts need to be made to impart this sort of understanding which I guess means employing more people to do that."

"If landowners are not convinced of the value of natural bush (bush/wetland areas on their holding) there will never be any value in any agreement…"

Development of an appreciation of the values of nature in landholders can be achieved by improving their understanding of the link between their wellbeing and the healthy maintenance of the environment (USAID, 2001). Landholders also need to be convinced that the public and government appreciate and are willing to support them morally and financially to address the complex issues faced in conserving nature on their properties. A landholder in the present study underlines this:

"…the government must not use covenantors as an excuse to lessen their commitment to conservation of public property. This is a concern that actually prevents people I know from community to covenanting their remnant bushland."

Another measure also shown in the conceptual model for building or sustaining landholders' nature conservation ethic is 'Perception of Shared Problem'. In this study, landholders expressed the view that government and public do not give them the necessary support to enable them to achieve the desired conservation outcomes. Millar (1998) stresses that those working with landholders ought to recognise the social, historical and financial environment in which the landholders live, as well as factors that could influence their full participation in conservation. Bureaucracy and inefficiency, which are barriers to conservation, need to be addressed in government conservation administration. Furthermore, the development of responsive mechanisms that facilitate prompt and relevant support to landholders in nature conservation needs to be emphasised in policy setting.

Increased knowledge and awareness of the environment through education and other means can build landholders' value and appreciation for nature. Two permanent covenant holders in the present study illustrate the impact and ability of these measures to lead landholders towards their uptake of permanent covenants:

"I believe education is the key. We should be made to be more aware of our own diminishing vegetation and what this is doing to the environment", and "…Recognition of endangered species is difficult for lay people. I would not have appreciated these plants had my daughter not been a biologist, interested in native grasses and herbs."

Furthermore, knowledge and awareness of nature can increase landholders' perceptions of the benefits of conserving nature (depicted in the conceptual model as 'Perceptions of Benefits') directly or indirectly, and in effect building their nature conservation ethic. The indirect effect is through linking the state of nature and environment with human wellbeing (see Figure 6.1).

The ANZECC Working Group on Nature Conservation has identified some best-practice initiatives and principles for building ownership and stewardship of landholders in nature conservation on private land on Private Land (1997). They include building relationships with landholders and incorporating best practice nature conservation into existing extension and planning programs (Millar, 1998).

Despite the global and Australian recognition of the importance of promoting nature conservation ethic, calls by many landholders in this study for measures to promote education and awareness in nature conservation on private land indicate that this recognition has not translated into implementation actions. The requirements for building a conservation ethic often compete with similar other nature conservation approaches such as policy advocacy or compensation schemes for the limited financial resources availed by governments to conservation.

Landholders' perceptions of the benefits of conserving nature can also help to build a nature conservation ethic indirectly through increasing their value and appreciation of nature. Current covenant programs tend to focus and target landholders who already display strong conservation ethic[2]. These programs, because of limited resources, largely neglect the more 'difficult to reach and change' class of landholders despite evidence that significant nature conservation values that are most at risk are owned and managed by landholders who do not have a high nature conservation ethic or value for nature. Effective and efficient support to landholders in their conservation efforts can build their perception of benefits in conserving nature, thus promoting a nature conservation ethic among landholders.

The ability of nature conservation ethic to influence landholders' decision on the adoption of conservation measures is recognised in literature (Beedell & Rehman, 2000; Gasson & Potter, 1988) and in nature conservation policies. In the latter, for example, the National Strategy for the Conservation of Australia's Biological Diversity (Environment Australia, 2000) supports the development of information programs to improve the level of knowledge and

[2] One exception to this is a woodlands conservation program by WWF in Western Australia, which purposely targets management agreements at landholders who have important woodlands for conservation rather than those that are interested in covenanting their properties.

awareness of the values of retaining native vegetation as measures of inculcating a conservation ethic.

From a global perspective, the World Conservation Strategy (1980) recognized environmental ethics as a matter of unequivocal importance to the international community, based on five components: interdependence of all living things (reciprocity), holism, respect for future generations and a principle of sustainable development (de Silva, 1997). Several of these components can be observed in the responses by landholders in this study. For example, a respect for future generations is demonstrated in response by one landholder: *"Conservation on private land must be encouraged. People must be made aware of the advantages of having land set aside for these purposes and will leave them in a permanent state for future generation"*. The concept of holism is also demonstrated by another response by a landholder:

> *"Every aspect of every issue needs to be addressed urgently from; revegetation, including grasses, ground covers, low bush as well as trees. landuse including farmers re-education about farming techniques, conservation importance, chemical selection and use of water management, re-establishment of endangered species, anti salinity schemes, water use and allocation reappraisal for the whole of Australia... for our land health"*.

Manning et al. (1999) observe that landowners with a strong environmental ethic are more strongly motivated to adopt good conservation and environmental practices than others. Similarly, Clearfield & Osgood (1986) cite positive associations between the presence of a moral obligation in farmers for the protection of natural resources and the use of conservation practices.

Another reason for building a nature conservation ethic in landholders is given by Farrier (1995) - that landowners who have a weak nature conservation ethic are likely to look for loopholes in regulations in an attempt circumvent the high cost of implementation, or only implement conservation regulation when they are sure there is a realistic threat of vigorous enforcement. The reality is captured in a comment by one of the landholders in the study: "*Farmers see the Government as being responsible for conservation work and are still clearing even though salinity is obvious.*"

The nature conservation ethic can cause landholders to make conservation decisions based on long-term societal benefits rather than short-term profitability, and to achieve conservation outcomes more efficiently than 'command and control' approaches such as regulations and legislation. It also has the potential of generating positive actions that may be necessary for improved conservation outcomes, particularly with scientific uncertainties about conservation of biodiversity (Farrier, 1995). Furthermore, because active management is necessary for the integrity of most conservation areas on farmland, the need for a nature

conservation ethic among landholders becomes more apparent with change in property ownership as new owners may become distanced from the conservation intentions and zest of the original covenantors over time.

6.2.2 Confidence in permanent covenant mechanisms

Landholders are more likely to have confidence in a permanent covenant if they understand it well, if they view its comparative ability over other mechanisms to secure long-term conservation, if they perceive its necessity and benefits, and if they view it to be easy to implement and compatible with their goals and objectives. Confidence in the permanent covenant mechanism came second, after a concern for nature conservation, in the factors that influenced landholders' decision to take up a permanent covenant in Victoria. Similarly, landholders demonstrated their confidence in the permanent covenant mechanism in their decision to use a permanent covenant to manage their concerns about a likelihood of alteration of the conservation areas by future owners or managers, and their conviction that there were no other equally effective mechanisms for long-term nature conservation.

Figure 6.2 shows a conceptual model of the factor interaction leading to confidence in a permanent covenant mechanism. Five factors are shown to have a direct influence on landholders' confidence in a covenant as a mechanism for long-term nature conservation. The factor interactions presented in the conceptual model are discussed in the text that follows.

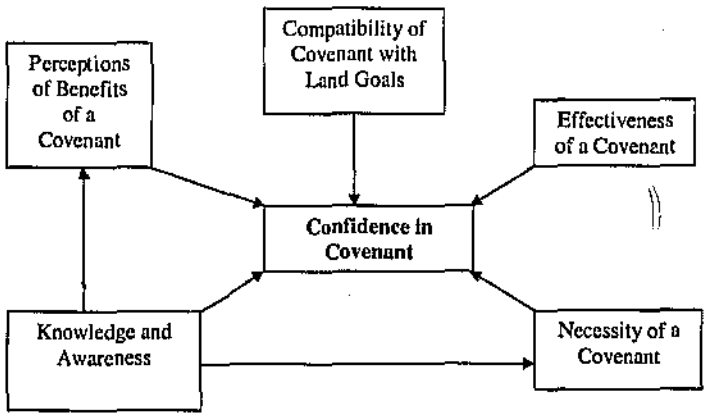


Figure 6. 2 Conceptual model showing the interaction of factors in influencing landholder confidence in permanent covenant mechanisms

Note: The direction of arrows points from influencing factors to the influenced factors.

6.2.2.1 Information, knowledge and awareness

Information and education are motivational approaches that can influence behaviour in favour of biodiversity conservation (Gunningham, 2001). The conceptual model (Figure 6.2) shows that information, knowledge and awareness have a direct and indirect influence on landholders' confidence in a covenant. The two indirect influences are through landholders' perceptions of the benefits and necessity of a covenant (depicted in the model as 'Benefits of a Covenant' and Necessity of a Covenant', respectively). Evidently, in all landholder categories, increase in the level of knowledge about permanent covenant mechanisms was associated with an increased likelihood of a permanent covenant uptake. Furthermore, level of knowledge about a permanent covenant in most landholder categories had an indirect influence on their likelihood to take up a permanent covenant.

An absent or ineffective publicity of permanent covenants in both States was evident in landholders from their display of little or no knowledge about a permanent covenant and its accompanying mechanisms and their lack of awareness about the covenant programs. This is despite the presence of long running covenants programs in Victoria and Western Australia. Lack of adequate knowledge and awareness about covenants is one of the reasons for landholders' lack of confidence in them and their negative perceptions about the purpose, intentions, and ability of a permanent covenant mechanism to deliver the desired outcomes.

The indirect influence of the level of knowledge about a permanent covenant on their uptake by landholders amplifies the importance of assessing both direct and indirect impact of interventions such as education and awareness programs on permanent covenant uptake. Farmers in Australia have recommended the use of information and education programs as measures to increase the protection of nature on private land e.g. (e.g. Haw et al., 2000; Jenkins, 1998; Safstrom, 1993). This is consistent with findings of a positive relationship between the level of conservation awareness and biodiversity conservation and adoption of conservation technologies e.g. (Brotherton, 1989; Brouwer et al., 1996; L. A. Curtis, 1997; Vanclay & Lawrence, 1995).

Hollick (1990) points out that decisions of farmers regarding the adoption of a program can change from the objective situation to the perception of it because of lack of information and understanding. Increased knowledge and awareness can potentially increase landholders' understanding about permanent covenant and in the process scuttle misconceptions and doubts about the purpose, components and operations of permanent covenants.

6.2.2.2 Benefits of a permanent covenant

Most non-holders of covenants or agreements in both States, with the bigger majority being in Western Australia, did not perceive covenants to have benefits. This was similar in close to half of fixed-term agreement and fixed-term covenant holders in both States. The benefits of a covenant alluded to by landholders are mainly economic. For example, except for fixed-term covenant holders in Western Australia, the perceptions of the benefits of a permanent covenant in all other categories of landholders were attributed in part to their perceptions of the impact of a permanent covenant on land value.

Even where individual characteristics of landholders such as age were an influence on the perception on benefits of a permanent covenant, landholders' perceptions of a permanent covenant's impact on land value were the bigger of these influences. This finding is consistent with Tisdell's (1998) assertion that local communities are less likely to conserve biodiversity where they appropriate little or no economic benefit from its conservation.

Norris & Shabman (1988) point out it is important for landholders to perceive the direct and tangible benefits of mechanisms or programs that they are being asked to adopt. Stronger perceptions of the benefits of a permanent covenant were associated with an increased likelihood for a permanent covenant uptake in all landholder categories in the present study. Nevertheless, there was a variance in perceptions of the benefits of a permanent covenant among the different categories of landholders.

Recent Tax legislation amendment to cover for loss in value of property that has a permanent covenant is likely to have a relatively similar level of improvement in perceptions of the benefits of a permanent covenant among the different categories of landholders. However, measures aimed at improving the perceptions of fixed-term agreement holders in Victoria on the benefits of a permanent covenant would have minimal impact on their likelihood to take up permanent covenants compared to other landholder categories. This is possibly because fixed-term agreement holders in Victoria (Land for Wildlife, 2000) are already aware and well informed about permanent covenants and do not see any additional benefits to draw from a permanent covenant so as to achieve their conservation goals.

Overall, measures to increase landholders' perceptions of the benefits of a permanent covenant are likely to have stronger impact on landholders' uptake of a permanent covenant in non-holders of covenants or agreements than in fixed-term covenant and fixed-term agreement holders, with the greatest impact in non-holders of covenants or agreements in Western Australia. Similarly, in Victoria older non-holders of covenants or agreements are less likely to take up a permanent covenant than are younger landholders because they do not perceive its benefits. Therefore, measures to increase the perceptions of the benefits of a permanent

covenant would have a positive effect on uptake of permanent covenants if they were targeted at older rather than at younger landholders. In fixed-term agreement and fixed-term covenant holders in Victoria and Western Australia, respectively, increased knowledge about permanent covenants would lead to increased positive perceptions of the benefits of a permanent covenant.

Although it would be expected that possession of a fixed-term covenant would naturally be the result of an interest in long-term nature conservation, the reality as shown in the study findings is that this is not the case. A cross-section of landholders with a fixed-term covenant are unlikely to have taken up a fixed-term covenant if it were not conditional for acquiring a permit from government to develop or clear some part of their property – 'a tied grant'. Consequently, interest in long-term nature conservation was not the primary motive for fixed-term covenant uptake. These observations have implications for the future protection of nature conservation areas currently under a fixed-term covenant on expiry of the agreement to reserve, particularly among landholders who feel they were coerced to take up the fixed-term covenant.

There is a risk that the required level of protection of conservation feature on such land under a fixed-term covenant may not be assured upon expiry of the covenant particularly where there is no other form of motivation for long-term nature conservation. Current review of the Remnant Vegetation Protection Scheme under which the fixed-term covenant is entered needs to build incentive measures that will support conservation beyond the 30-year fixed-term period by moving away from coerced uptake of management agreements to other incentive based programmes that have a community input into the acceptable conservation mechanism and policy mix.

6.2.2.3 Necessity and effectiveness of a permanent covenant

Landholders are unlikely to take up a permanent covenant if they do not perceive a need for it or its effectiveness in meeting their goal for their land, including the control of salinity. Figure 6.2 shows the two factors namely, 'necessity of a covenant' and 'effectiveness of a covenant' to have a direct influence on landholders' confidence in covenants. Landholders' perceptions of the necessity of a covenant are partly a function of their knowledge and awareness about permanent covenant, as shown in the conceptual model.

The majority of non-holders of covenants or agreements in Western Australia and less than half in Victoria were confident that future managers of their properties would ensure the continuation of conservation on their land. Furthermore, the majority of farmers in both States were uncertain about the effectiveness of permanent covenants for long-term nature

conservation over other mechanisms. In this respect, therefore, they did not perceive the necessity of a binding conservation mechanism. The conceptual model shows that the lack of perceptions of the need of covenants can be attributed partly to lack of awareness and adequate knowledge about permanent covenants, prevalent in the majority of landholders, particularly those without any form of a covenant or agreement.

Salinity has a significant impact on farmlands and most landholders in Australia are aware of its threat on farm production (Haw et al., 2000). However, the extent to which landholder perceived a permanent covenant as a mechanism for curbing the encroachment of salinity differed in different landholder categories. For example, the uptake of permanent covenants by the majority of permanent covenant holders was due to reasons other than their perceptions of the necessity of covenants as salinity control mechanisms. This, of course, could mean that they did not have or anticipate having salinity problems on their land or they did not perceive covenants as effective mechanisms for salinity control.

Lindholm (1997) points out that the outcome of peoples' choices and actions is dependent on the way they comprehend reality and their relationship to their environment. In respect to salinity, soil salinity control was more popular as a reason for having retained nature conservation features on the properties among non-holders of a covenant or agreement in Western Australia than among landholders in Victoria. A statistically significant relationship between perception of a covenants' effectiveness as a mechanism for salinity control and the likelihood of a permanent covenant uptake was only observed in non-holders of covenant or agreement in Western Australia.

Length of time a family had owned a property had an influence on the perceptions of non-holders of covenants or agreements in Western Australia on the effectiveness of a permanent covenant as a salinity control measure. Studies by Abd-Ella, Hoiberg, & Warren (1981) show that the number of years farming has a positive and significant relationship with the use of conservation practices at least in the earlier years. Longer duration of property ownership in the family was associated with a lower likelihood of landholders to perceive permanent covenants as effective mechanisms for salinity control than was than were landholders with a shorter association to their land. This therefore confirms the prediction made in Chapter 1.

Haw et al. (2000) related length of family association with the property with a relatively high level of awareness and response to environmental degradation. It is likely that those landholders in Western Australia with properties that had been in the family over a long period of time are sceptical about the ability of permanent covenants to curb salinity- because they

have perhaps witnessed and experimented unsuccessfully with various salinity-control techniques compared to other landholders.

Perceptions of the effectiveness of a permanent covenant as a salinity control measure were associated with the State, among non-holders of covenants or agreements. Victoria landholders were more likely to perceive permanent covenants as effective mechanisms for salinity control than those in Western Australia. Rickson, Saffigna, Vanclay, & McTainsh (1987) suggests that landholders' perceptions of risks of degradation of a conservation area in the long-term may contribute to their decision towards adoption of conservation measures. Accordingly, the observed greater likelihood for landholders in Victoria than Western Australia to view permanent covenants as effective mechanisms for salinity control is possibly attributed to more publicity in Victoria, than in Western Australia of the potential risk of salinity on properties.

6.2.2.4 Compatibility of permanent covenant

Incompatibility of permanent covenants with the goals and objectives of the land (Drost et al., 1996; Guerin, 1999; Harrington et al., 1985) has the potential to affect landholders' confidence in permanent covenants as illustrated in conceptual model (Figure 6.2). Landholders take up a permanent covenant when they view it easy to implement and compatible with their goals and objectives of the land (Harrington et al., 1985; Nowak, 1987). In this study, however, there were no statistically significant relationships between landholders' goals for the property in terms of retention of future management or ownership and likelihood of taking up a permanent covenant. But, a wide range of other comments made by landholders' in the study show that many, particularly non-holders of a covenants or agreements, held the opinion that a permanent covenant would prevent them from managing and using the property as they desired - in effect pointing out its incompatibility with their goal of unhindered use of the land.

Wide acceptance of permanent covenants among landholders entails their design and promotion in the context of a whole farm plan, thus reducing the chances of their incompatibility with landholders' goals of the land. The possible implication of uptake of a permanent covenant on present and future plans for the land also ought to be highlighted in promotional materials and events.

6.2.3 Level of economic dependence on the property

It was anticipated in this study that landholders who are more commercially oriented, or full-time on the land, and in effect economically dependent on the property, were less likely to take up a permanent covenant than those less economically dependent on the property.

Permanent covenant holders in Victoria had little or no economic dependence on their property before taking up a permanent covenant. Similarly, the majority of fixed-term agreement holders in Victoria did not derive any income from their property. The majority of landholders in all other categories derived more than half of their total income from their properties, signifying their strong economic dependence on the land. A significant relationship between level of income dependence on the property and landholders' likelihood of a permanent covenant uptake was only present among non-holders of covenants or agreements in Victoria. In this category, greater economic dependence on the properties was attributed to a lesser likelihood to take up a permanent covenant.

The above findings establish a link between a landholders' level of dependence on income from the property and their uptake of voluntary nature conservation schemes, such as land for wildlife and permanent covenants. This link suggests that the uptake of voluntary management agreements attracts mostly those that have the least dependence, economically, on their property. Furthermore, it can be deduced from the findings that landholders who do not have any form of a covenant or agreement and are highly dependent on income from their property are unlikely to take up a permanent covenant. Gasson & Potter (1988) observed a similar relationship showing the least financially constrained and most conservation-oriented farmers took up a conservation scheme on their land with relatively little compensation. The level of economic dependence on the property is a better predictor of likelihood of taking up a permanent covenant in non-holders of covenant or agreement in Victoria than in other landholder categories.

Landholders are more concerned about possible economic loss because of adopting a conservation program than any other reason and are unwilling to incur costs in programs that have only long-term economic returns (Norris & Shabman, 1988). Those that are largely dependent on their property for income are likely to avoid voluntary measures that have potential cost implications or the likelihood of restricting the expansion of their productive land area (Trust for Nature, 1996, 1998). In the present study, these landholders cited financial inability for their lack of uptake of a permanent covenant. They attributed the need for financial support to a decline in farm economic output and uncertainty about the future farms output. Reduced reliance on the primary industry sector in Australia has led to a decline in farm output

and profitability over the past thirty years (Commonwealth of Australia, 2002) particularly in small and medium size landholdings.

The cost implications of taking up a permanent covenant are apparent to most landholders. Apart from initial cost of taking up a covenant, further costs are incurred in perpetuity in meeting management obligations. Even landholders who are initially enthusiastic about taking up a permanent covenant can find such enthusiasm to wane with time (Binning & Young, 1997) when expectations are not met or when the required resources for maintaining the land under a covenant are diminished, or when the landholder is physically unable to attend to the obligations due to age or sickness.

The link between uptake of nature conservation schemes and level of economic dependence on the property has implications on policy for nature conservation on private land. Greater recognition of the prevailing social and economic situations of rural landholders in policy setting for nature conservation on private land is required. Policy statements ought to be specific and measures and implementation strategies to address specific needs such as financial resources and assistance with labour should be adequate and efficient. Financial incentives to cover possible economic loss arising from uptake of a permanent covenant would in particular have significant influence on non-holders of a covenant or agreement in the uptake of a permanent covenant.

6.2.4 Property rights regime

Private property rights are an institutional factor (Hollick, 1990), which have an influence on landholders decisions on the uptake of a permanent covenant. This was expressed in landholders' attitudes to restrictions imposed by a permanent covenant on land-use and in their comments citing what they perceived as an intention of government to take away their power and control their land through use of permanent covenants. These findings confirm the expectation postulated in Chapter 1 of the likely influence of landholders' perceptions of the impact of a permanent covenant on their private property rights.

Figure 6.3 shows a conceptual model of interaction of factors in influencing landholders' outlook on property rights in relation to uptake of a permanent covenant. Three factors are depicted to have an influence on landholders' outlook on property rights: perceptions of loss of control over their land, availability and level of compensation for losses, and the presence or absence of a nature conservation ethic in landholders. The model shows an indirect influence of nature conservation ethic on landholders' outlook on property rights through landholders' perceptions of loss of control of their land. The implication is that landholders who have a strong nature conservation ethic are unlikely to view covenants as a

threat to their control of the land. In turn, they are unlikely to attach much significance to the issue of property rights in deciding on the uptake of a permanent covenant. Landholders' perceptions of loss of control of their land are also shown to have indirect influence on their outlook on property rights through landholders' attitudes to compensation.

The study findings showed a positive relationship between landholders' outlook on property rights and their likelihood to take up a permanent covenant. However, the strength of the different factors noted in the model in influencing landholders' outlook on property rights differed from one category of landholder to another. These differences and similarities between the different landholder categories and States and their implication on nature conservation policies are discussed below.

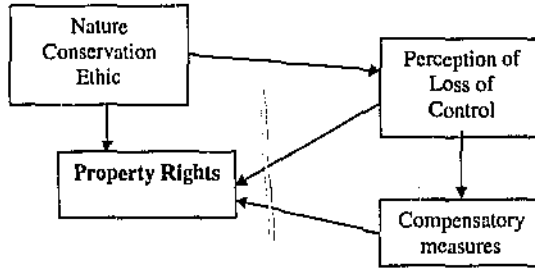


Figure 6. 3 Conceptual model showing the interaction of factors in influencing landholders' outlook on private property rights

Note: The direction of arrows points from influencing factors to the influenced factors.

Attitudes to restrictions were reliable predictors of the likelihood of uptake of a permanent covenant in all categories of landholders. Policy measures aimed at promoting the uptake of permanent covenants by compensating landholders for restrictions on land-use are more likely to attract greater uptake of permanent convents in Victoria than Western Australia. Overall, these pro-covenant policy measures are likely to cause the greatest covenant uptake by fixed-term agreement holders in Victoria and the least uptake in non-holders of a covenant or agreement in Western Australia.

The difference in policy response between the two States can be attributed to differences in the set of factors that influenced the attitudes of individual landholder categories to restrictions on land-use. For example, a notable stronger interest in long-term nature conservation by fixed-term agreement holders in Victoria compared to other categories of

landholder is the likely cause for a stronger and positive response to pro-covenant policy in the former than in other categories of landholders. The former voluntarily took up a fixed-term agreement in preference to the more land-use restrictive permanent covenant and because of their interest in conservation. In contrast, as stated many times already, the uptake of a fixed-term covenant by many landholders included in the study in Western Australia was involuntary and therefore not necessarily motivated by a strong interest to conserve nature. A combination of increase in long-term interest in nature conservation and compensatory policy measures for restrictions on land-use by a permanent covenant is likely to yield greater uptake of permanent covenants in fixed-term agreement holders than in other categories of landholders.

Some reasons advanced by landholders for apprehension to covenant uptake in relation to property rights included the possible loss of control of their land, undue restrictions imposed by a covenant, and foregone use of the land. Although these reasons may not necessarily reflect the reality regarding the restrictions in a covenant, they nevertheless amplify the perceptions of landholders on the restrictions that they envisage occur under a covenant: *"I fear I will lose control of my own land and be lumbered with a whole lot more red tape from government departments."* This comment not only expresses the concern regarding loss of property rights but also a concern about a perceived or anticipated bureaucracy in the operations of a covenant

Another reason for apprehension of covenant uptake was that covenant restrictions have a cost in terms of foregone use of the land, which amount to uncompensated taking of private property. The question whether these expressions have support in theory or practice is the subject of the discussion that follows.

6.2.4.1 Defining what rights and whose rights

Misconceptions and misunderstandings abound on the rights provided to private property, and the relationship between these rights and permanent covenant. It has been noted earlier that landholders are apprehensive of taking up a permanent covenant for fear of losing the rights to their property. The notion that Government intends to remove control of land from the landholder through the 'back door' was expressed. Incongruence of property rights and permanent covenants was expressed in relation to compensation- that where such rights to property use were taken away compensation is imperative.

Voluntary uptake of a permanent covenant by landholders implies acceptance of attenuation of property rights, in particular, limitation of some use of the conservation area as set out in the terms of the covenant agreement. It is supposed, therefore, that landholders who take up a permanent covenant voluntarily do not mind such attenuation. However, one general disagreement of landholders' concerning the uptake of a permanent covenant is that the

government wants to take private property for public use without just compensation. Because a property right has a utility function, landholders can be said to have been denied their property rights when attenuation of those rights has deprived them of use of land for its economically productive value.

Farrier (1995) argues that by legal definition, this notion is misleading as all land in Australia is already in public service under the crown - government is the trustee of all natural resources as common property, according to the public trust doctrine to protect all vital natural resources for the public and the future generations. The argument advanced by Farrier is that landholders cannot claim rights to that which they do not own, and that government, as the owners of all land has the right to determine the extent of the use of land.

Property rights are social constructs (not the dictates of 'nature'). Utilitarian considerations have been used to presume that ownership, on moral grounds, accords an individual that acquired an object the right to enjoy it undisturbed (A. Ryan, 1987) insofar as their use does not affect neighbouring areas (Meyer, 2000). Both Meyer and Ryan challenge this notion as a misconceived theory of property rights, with Ryan (1987) pointing out that this presumption is attributed to how the law on property is understood. Furthermore, Farrier (1995) points out that historical actions by governments and courts suggest that the property rights of private owners are shared with the public, though the notion of unlimited enjoyment limits the ability of a government to regulate activity on private land for the sake of conservation.

Private ownership of land is recognised, nevertheless, as the possession of a bundle of rights over the property, which can be increased or reduced by the government. Government on the other hand has a moral duty to protect bestowed property rights and accordingly to manage its own affairs so environmental liabilities are not imposed on present and future citizens. A permanent covenant entails the transfer of rights over the conservation areas from private to common property. It, in essence, removes specific rights from the bundle of rights vested under private property on the owner of the lands and extends rights to other members (public) who have a stake in the conservation area. Laurence(1994) points out the inevitability of shared rights between the landholder and the public:

> *"...Farmers are only one group of stakeholders in the control of natural resources. Urban and regionally based consumers, not only of food, but also of leisure, recreation and landscapes, increasingly determine what they want in, and from, the Australian countryside. They are likely to reject practices which denude soils and bushlands and pump chemicals into fragile river systems."*

The increasing use of permanent covenants in Australia indicates a shift in the traditional notions by landholders pointed out by Farrier (1995) in which there is expectation of

the public, represented by government agencies, to bear the significant load and responsibility for conservation. It also implies there is the recognition of the value of the resource being conserved; the importance of landholders' input to the desired conservation outcome beyond his/her expected duty of care, and the co-existing rights over land and resources that need to be defined.

6.2.4.2 Policy setting for property rights

Current laws in Australia as in most other nations around the world do not adequately reflect the complexity of relationships between private and public property rights that exist in the conservation of nature on private land for the common good. The precise limits of government interference on private land are not well defined in the constitution and vary from one case to another (Farrier, 1995). However, it is acknowledged that interference may be necessary where it is aimed at preventing 'harm' to public. Vira (1995) argues that where it becomes necessary to limit a previously unrestricted activity, resolving conflicting rights claims becomes the fundamental issue of policy debate, while constraining the activity through choice of instruments (such as regulation or permanent covenants) to implement policy is secondary.

Existence of property rights on land resources connotes the presence of utility and value (L. Ryan, 1998). Private property provides the holders of these rights with incentives to invest in the resource and manage them sustainably (Cullet, 2000). Furthermore, the social, cultural and economic structure and dynamics of the rural setting on which private nature conservation takes place dictates that outside claims to property in which landholders are almost sacredly attached to, is likely to meet with the resistance, as amplified by a landholder: *"I am not comfortable with any arrangement that removes my control of 'my' land."* In addition, *"Permanency of any agreement for a set time worries me."* These reasons justify the need to build and clarify the institution of private property in respect to nature conservation areas on private property.

Currently, allocation of rights and responsibility among claimants over nature on private land has not been adequately informed through policy debate in Australia. The purpose of a policy debate would, among others, bring to the forefront all the claimed and unclaimed rights to the resources, and set the arbitration criteria for their allocation. Although the primary motive for establishing property rights may be economic, other aspects such as cultural and social situations should be taken into account in policy setting (Cullet, 2000). For example, several landholders in the study pointed out the importance of compensation for economic losses that are likely to be incurred by landholders in the uptake of a permanent covenant. In essence, the role of policy is to dispel the misconceptions and set straight principles and modalities on which property rights in natural resources are to be allocated, basing it on sound

understanding of constitutional, legal, economic, social and cultural structures and dynamics of the stake bearers and the resources to be conserved.

Over time, new information may necessitate changes to the criteria used to allocate rights, leading to a transfer of rights between existing holders and perhaps with new claimants to the rights. In such circumstances, it may be necessary on moral and equity grounds to compensate those that are adversely affected by reduction of their allocated bundle of rights, as is the case with the restrictions set by the Australian government on native vegetation land clearing.

Policy may also support the transfer of rights from one holder to another party in respect to private land by one buying certain or all property rights from the landholder, or the landholder donating the rights, for example to the public. In either case, the tax owing on that piece of land is equivalent to the amount of rights removed from the landholder to be transferred to the public. Hodges (1982), for example, has suggested the use of transferable clearing rights as a means of preserving remnant vegetation and controlling salinity. The selling of rights entitles the landholder to compensation to the value of the rights. In the case of donation, the landholder forfeits the rights without any expected compensation.

The payment made over and above compensation ought to cover management costs over and above the costs of the duty of care. Farrier (1995) argues that landowners can be ordered by government to prevent harm, but not to provide benefits- the latter must be paid for. The management costs over and above the duty of care also have to be apportioned appropriately between the landholder, the government, and the public as the beneficiary of the conserved resource. Hanna & Munasinghe (1995) argue that property rights over biological resources should not necessarily stop at their provision of economic incentives; they must also foster sustainable management and equitable distribution of the benefits at local, State, national and international levels.

Permanent covenants act as politically expedient mechanisms for resolving conflicts of claims of rights to resources on private property between landholders and the public. They facilitate landholders to place voluntary regulations on their use of land that has overlapping claims over resource use with the public, and in effect avoid the appearance of government interference into private property as regulator. However, their increased uptake depends on a clarification of the distribution of rights and responsibility over the natural resource.

Attempts to define and enforce property rights, involve moral and political choices, which brings with them distributional consequences as not all claimants of the rights can win (Vira, 1995). Hill (2001) points out that sometimes property rights are deficient. This is particularly evident in cases such as the environment, where government intervention is

necessary for improvement of accountability (e.g., through regulation or definition and allocation of rights) when existing systems of rules are weak. The choice between the level of regulatory and voluntary mechanisms to use on private land can affect the resource flows, and thus impinges upon political, economic, and social relations. Government has an important role to play in providing the framework on which issues of allocation of property rights over natural resources on private property among the stakeholders can be addressed.

6.2.5 Equity and its imperatives

A large cross-section of landholders in this study sought incentives that are targeted to removing inequity in nature conservation. Most landholders expressed the need for a compensatory mechanism for loss of future productive use of their land under a permanent covenant. Of all the landholder categories, fixed-term covenant holders in Western Australia had a bigger majority of those that held this view. In addition, an overall larger proportion of landholders in Western Australia than Victoria that held this view. In the non-holders of covenant or agreement in Victoria, those that perceived the necessity for compensation showed a lesser likelihood of taking up a permanent covenant than those that did not perceive the necessity. Figure 6.4 depicts the interaction of three factors influence on landholders' outlook on equity in nature conservation. Each of the three factors captures the views expressed by landholders on the influence of equity issues in their decision on a covenant uptake.

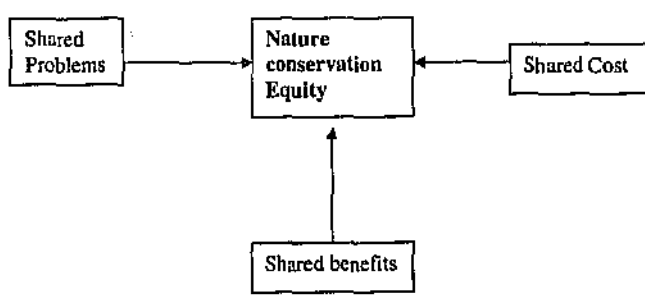


Figure 6. 4 Conceptual model showing the interaction of factors in influencing landholders' outlook on nature conservation equity

Note: The direction of arrows points from influencing factors to the influenced factors.

Most landholders expressed the view that it was necessary for the government to address inequity in conservation. Reconciling the disparities particularly between the costs incurred and benefits gained in conservation on private land is necessary. A large number of permanent covenant holders suggested tax concessions on equity grounds as a measure to offset loss of use of their land.

A second view of conservation equity expressed by landholders relates to loss of other opportunities caused by the uptake of a permanent covenant. The view is that there is a need for compensation for the denied opportunity of use of their land, and as a fair way for encouraging the uptake of permanent covenants among landholders. These views giving justification for compensation are summarised by one landholder: *"I see the biggest issue as compensation. Some farmers cleared all their land while others that left large areas of bushland because they had more foresight are now being penalised and told they will receive nothing."*

The perceived conservation inequity expressed by the landholder is in respect to the actions of other landholders. The perception is that those that take up a permanent covenant are disadvantaged while granting societal benefits from them (depicted in Figure 6.4 as benefit sharing). This is consistent with the Adams equity theory (1963) - that people in acting to satisfy their needs, evaluate the equity or fairness of the outcome they expected. Furthermore, they compare their outputs and inputs in relation to other people's, with the expectation that an equitable situation will result in a similar quality and quantity of outputs for similar inputs between individuals. It is clear that this notion of inequity underscores landholders' prescription of greater value to economic outcomes of cleared land than to land left under conservation. It also highlights the need to promote the value of nature conservation to landholders.

Perceived disadvantages and loss incurred by landholders by taking up a permanent covenant without compensation are disincentives to their uptake. One form of perceived conservation inequity expressed by landholders is the loss of earned ownership and rights to the land without compensation. A landholder stated *"...it has taken a lot of hard work and money to obtain ownership of my land. I am not about to relinquish control over it for little or no compensation."* Apart from notable misunderstanding of the functioning and purpose of a permanent covenant, the notion presented in the example is the right to, and expectation of compensation for costs incurred in purchasing the enjoyment of those rights. Permanent covenant is thus viewed as taking away property rights in an inequitable manner.

Jodha and Russell (1997) point out that the impact of adoption or uptake of conservation programs can differ from one landholder to another and it may create or accentuate social and economic inequalities. A reward system that recognizes those who conserve nature, often at the expense of short-term gains and in wider community's interest is

in the interest of governments as it spreads the cost of conservation (depicted as 'shared costs' in figure 6.5) between the individual landholder and the wider community (Skitch, 2000).

Nature conservation on private land is a private production of public goods and services on private property from an economic and market perspective, these goods cannot be exclusively allocated to benefit or to be enjoyed by those that finance their production (Hoppe, 1993). On that account, the market cannot produce such goods and services in sufficient quantity and quality in the absence of compensation. Failure to compensate for the production (management) of these goods could lead to their demise, as was the case in Queensland where landholders took to clearing their land before the introduction of a native vegetation ban on clearing (Hungerford, 1999).

It can be argued from an equity theory viewpoint that without compensation in the short-term economic perspective, the norms of equity and reciprocity are often discounted without payment by those that carry out and finance their production, for those that consume goods and services derived from nature conservation. Nevertheless, economics aside, the majority of permanent covenant holders in the study did not express the feeling of being disadvantaged by their action of placing a permanent covenant on their land. It can be argued that this is largely because of their high value for, and interest in, nature conservation acts to counterbalance the discount of equity made to the public. The challenge in reducing the need for compensation is therefore to identify the appropriate tools for promoting a strong value for nature that counterbalances any sense of being disadvantaged due to engaging in nature conservation.

Irrespective of their likelihood to take up a permanent covenant, the reality is that the majority of landholders clearly point out the need for incentives and compensatory measures to encourage the uptake of permanent covenants and the implementation of required conservation actions under it. In respect to the above, compensation ought to be viewed as transitional until their counterbalance in form of improved conservation ethic can be reached. Proposals were made by landholders on how to counter disparity between cost incurred in conservation and the derived benefits. Provision of an annual management fee to cover the cost of working and maintaining the areas under a covenant, rate rebate at local government level, and reduction in land taxes by the State Government to compensate for land taken out of use, and provision of low interest loan facility were cited.

Another viewpoint on conservation equity presented in this study on conservation equity is in respect to the bearer of responsibility for compensation. Some landholders argue that the burden of compensation rests with government, because it is responsible for land degradation that culminated in the need for permanent covenant, while others argued that the

public should share in the cost of conservation with landholders on the ground that there are shared benefits. Still, other landholders view that those that agitate for permanent covenants should pay the compensation to cover losses incurred by landowners through the imposed restrictions by a covenant. However, there was also the acknowledgement that compensation schemes ought to target specifically areas of high conservation value: "*...compensation should be specific to properties with significant amounts of remnant vegetation where clearing has been denied and a covenant placed on them thereafter.*"

The suggested proportions of public contribution to the cost of conservation on private land differed between the different categories on landholders. However, analysis showed that most landholders could be split between those that thought that no compensation was necessary and those that wanted at least a 40 percent public contribution to the cost of private land conservation.

There was much less expectation for public contribution to cost of conservation among voluntary agreement or covenant holders in Victoria, than among non-holders of a covenant or agreement in Victoria and all landholders in Western Australia. Comments by landholders distinguished three classes of landholders according to their views on equity in nature conservation. The first class was the majority of landholders, many of whom have permanent covenants in Victoria and they felt that conservation costs on private land are solely the responsibility of the landowner. This class of landholders also had a strong nature conservation ethic. They took up a permanent covenant solely to ensure the protection of nature from what they considered an uncertain conservation in the hands of future managers, and they required the services of a covenantor.

The second class of landholders did not view the public to have a role in contributing towards the cost of conservation on private lands because they felt this would (in theory) amount to surrendering their property rights. This class comprised predominantly of fixed-term agreement holders. The third is the class of all other landholders who believed in principle that the public should contribute towards the cost of conservation on private land.

Irrespective of their views regarding who should bear the cost of conservation, all landholders acknowledge that a covenant's uptake and maintenance has cost implications which landholders are unable to cover because of the financial hardship presently experienced in farming, even when they are willing to do so. Financial support to aid landholders' inability to finance the attainment of conservation goals is therefore necessary, and may be availed even when compensation for conservation inequalities have been provided. The economic incentives (depicted in the conceptual model Figure 6.1) can be provided depending on landholders' inability to finance conservation activities under a stewardship agreement.

6.2.5.1 Equity and policy

Stakes in nature conservation extend from private lands to local, state, national and international levels. An understanding of the beneficiaries of the conserved resource and the levels of their stakes is important in the allocation of conservation costs and responsibilities. For example, the Federal Government is responsible for, and expected to undertake, its international obligations for nature conservation. In this case, the Federal Government would be viewed as the bearer of the cost on behalf of the international and national public where the nature of the resource being conserved has international or national significance. On the other hand, costs of managing resources that are only of local importance would entail the local government to share the cost with the landholder on behalf of the local community. For the cost of conservation to be borne by the landholder beyond the expected cost under the duty of care, it has to be evident in theory that some of the benefits of conserving the land accrue to the landholder. This calls for improved instruments for identifying the stream of benefits that flow from privately conserved areas, as well as all who share in these benefits.

Demand for compensation by landholders for conservation might be viewed wrongly as absolving themselves from nature conservation responsibility, as explained by one landholder: "*Many landholders regard conservation as the responsibility of the Government and not theirs…*" (This draws out the reason for their lack of will to take up a permanent covenant). The fact that such compensation for land under a permanent covenant does not exist at present, accounts in part for the negative reactions by a cross-section of landholders to the notion of being asked to take up a permanent covenant.

Government is the custodian of the rights of future generations and has the role of safeguarding their interests through inter-generational equity. In this role, government has the responsibility to ensure that as far as possible present policies and actions do not transfer harm and costs to future generations. Measures that cause the decline or degradation of biodiversity such as land clearing of high value natural vegetation on private property can be said to be inequitable to future generations because it denies them the enjoyment and benefit that is available to the present generation without an equivalent substitute. This argument gives Government the right to limit harmful taking from such conservation areas on private land. However, it also strengthens landowners' demand of payment for management of the conservation area on behalf, and for the benefits of present and future generation.

Equity is the last of the five constructs in the covenant uptake model addressed in this Chapter. The decision to address equity on moral or economic grounds depends on societal orientation and the society's ability to address the concerns of the different landholders on the achievement of their goal of the land.

6.2.6 The covenant conceptual model

The relationships between the five constructs discussed above and their relationships to other model components such as economic incentives, extension policy and program, stewardship, and duty of care are shown in the conceptual model for permanent covenant uptake (Figure 6.5).

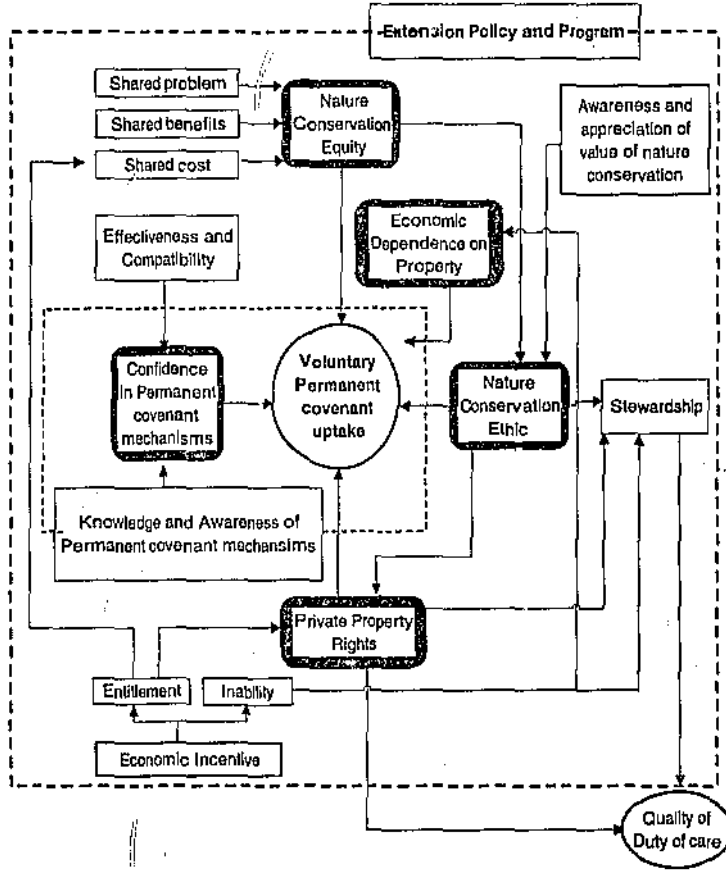


Figure 6. 5 Conceptual model showing the necessary factors and policy tools in a coordinated framework for promoting landholders' uptake of permanent covenants

Model description key

- The bold rectangular boxes in the model represent the five principal constructs in the uptake of permanent covenant.
- The lines with an arrowhead depict the model processes, with the arrow pointing to the output that is the results of a given intervention.
- The thin-bordered rectangles denote other interventions and factors that have an effect on the principal constructs. Other thin-bordered rectangles denote model outcomes, apart from a permanent covenant uptake, which are affected by one or more constructs. For example, the strength of a landholder's nature conservation ethic has an influence on their stewardship role.
- The area enclosed by the dotted rectangles depicts the area of influence of a policy intervention (depicted in light shaded rectangles). For example, knowledge and awareness of permanent covenant mechanisms is a pre-requisite for a permanent covenant uptake even when nature conservation equity or property rights concerns are met or where a strong nature conservation ethic exists. Further, extension policy and programs are suggested in the model as the overall operative tools for facilitating the achievement of the uptake of permanent covenant goals.

As the model indicates, the criteria for awarding economic incentives are based on entitlement and the inability of landholders. Economic incentives are awarded to landholders as entitlement on equity grounds to compensate for loss of private property rights, and as the public's contribution to cost sharing in nature conservation for actions beyond the of duty of care. Economic incentives are awarded based on landholders' inability to carry out stewardship actions. This is particularly the case where there is evidence that a landholder is willing but unable to cover the cost of conservation under a permanent covenant.

Duty of care lies outside the model but it is depicted in order to illustrate its relationship with the constructs and factors of the model. The quality of duty of care is influenced by quality of stewardship and the attitudes of landholders to property rights.

Command and control regulation should operate to enforce the duty of care, while payments are made for stewardship and on equity grounds. The goal of the conceptual model is to encourage the uptake of permanent covenants by removing barriers to their uptake, while concurrently building a nature conservation ethic, sound understanding of long-term nature conservation mechanisms and providing management support.

The discussion that follows focuses on other elements of the conceptual model, apart from the five factor constructs discussed earlier, and their relationship with the five constructs.

6.2.7 Justifying incentive measures

Landholders cite three ways to carry out nature conservation could be accomplished more effectively under incentive-based system rather than command-and-control mechanisms: direct funding, tax rebate, and reduction in land taxes. They justify provision of such incentives on two main grounds: that conservation is expensive and untenable under the prevailing poor agricultural price margins, and on equity grounds in recognition that conservation benefits are shared by all and therefore costs of conservation should equally be shared between the public and landholder. This was stressed in a comment by one landholder: *"The economic climate prevailing on large-scale agricultural production means very little surplus is generated. Long-term trends show this as continuing to occur in future. The only way I can see voluntary covenants working is to offer financial incentives for this to occur. I would love to have the farm looking like a park with lots of fenced off vegetation but I cannot because every hectare counts with today's current tight margins."*

Even where financial incentives such as tax deductibility for conservation work are already in place, landholders are deterred from taking up permanent covenants because they view them to have attached financial costs attached that are beyond their willingness to bear. One landholder in this study points this out the follows:

> *"We are very keen to continue to conservation plan on our land-fencing remnant vegetation, planting trees, and putting in drains to decrease salinity. However, over the last few years we have had no available funds to continue, even though this is of high importance to us. The only financial incentive we have available to us is the tax deductibility of conservation work. This is no help when great percentage of farmers is now not making enough money to pay tax."*

In circumstances as illustrated by the landholder, provision of economic incentives is provided based on landholders' financial inability to carry out the necessary conservation activities. This is depicted in the model as 'Inability'. According to the model, provision of such support can have a positive influence of enhancing the landholders' stewardship role. Some landholders in the study were contented with minimal financial incentives such as fencing costs that only covered the materials, whilst others saw it necessary that the cost of erecting the fence should be covered. There was consistency in the types of incentives cited by the landholders for promoting nature conservation on private land over the last decade (see for example, Coates, 1987; Jenkins, 1998; Productivity Commission, 2001). These include financial, technical, manual, and moral support and recognition for conservation efforts under a permanent covenant. Ongoing financial support, in particular, was noted by the majority of landholders as important in their decision on the uptake of a permanent covenant.

The United Nations Convention on Biological Diversity calls on member nations to adopt "economically and socially sound measures that act as incentives for the conservation of biodiversity." Current policies in Australia aimed at the conservation of biodiversity do not address comprehensively the need for incentive measures for nature conservation on private land, and further only dismally address the use of management agreements as mechanisms for long-term nature conservation. Regardless of category or State of location, all landholders consider incentives important for motivating the uptake of a permanent covenant.

In arguing for incentives to landowners, Skitch (2000) supported by Jodha & Russell (1997), points out there is a flaw in the argument that landholders should not be rewarded for undertaking their responsibility for nature conservation under a duty of care on the premise that they actually receive financial benefits in the long-term. The two argue that conservation initiatives may cause a significant reduction in the productive potential of the property and an uneven spread of costs and benefits over space and time due to changes in the pattern of resource access and use. Furthermore, the impact of such changes, which can differ from one landholder to another, may create or accentuate social and economic inequalities, which need to be addressed.

Further justification for provision of support, particularly labour, to landholders for nature conservation activities is the decreasing ability, with age, of some landholders to carry out physically demanding conservation work. There has been a decreased recruitment of younger people in agriculture in Australia over the past decade owing to changing technologies and markets in agriculture (Gretton & Salma, 1996). This had led to a concomitant increase in the average age of landholders who farm or manage sixty percent of land in Australia that is principally under agriculture or pasture (Commonwealth of Australia, 2002). Provision of support decisions ought to reflect the necessary adjustments to respond to the changing rural landholding scenario.

A notable disincentive to retention of conservation areas on private land is the relatively high valuation placed on such 'undeveloped' areas, resulting in high annual land rates that are calculated based on the land's potential for urban development and not on current land-use. Arguably, this may lead to conversion of conservation areas to more 'development oriented/higher income generating' uses, or their total neglect in order to avoid incurring additional cost of their retention. Removal or reduction of rates through reduced valuation to encourage the retention of land under conservation, and provision of financial support to maintain these areas, particularly those under pressure for urban development, are justified in this case.

6.2.8 Extension programs and permanent covenants

The proposal to use extension programs as the delivery tool for the mechanisms that support the uptake of permanent covenants is inspired by the relative and wide successes of extension in the adoption of agricultural practices. It is also inspired by the need for a holistic approach to the delivery of services to landholders, sensitisation of the government and general public on the how and where to support nature conservation on private land. The desired extension program, therefore, should seek to be multi-targeted - to landholders, public and government.

Robust extension policies and programs formulated from lessons and experience gained in the application of extension policy relating to the adoption of land or agricultural conservation practices, have the potential to promote the acceptance of permanent covenants. At the landholder level, extension programs go beyond provision of information - they also involve provision of the necessary support for ensuring the desired outcomes. Financial incentives and actual collaboration between different sectors with interest in private land have been cited as essential components for the success of extension policies in nature conservation on private land (United States Department of Agriculture, 1999).

Permanent covenant uptake, as with the adoption of conservation technologies, has costs attached to it. Acknowledgment of this to landholders by making provisions to defray these costs can increase landholders' appreciation of their nature conservation features. Some support is already being provided to cover the cost of uptake of permanent covenant in most States. Government and public concern and interest in nature conservation on private land needs to move beyond the demand that conservation be undertaken on private property, to provision of the necessary and adequate inputs for achieving the expected outcome.

There is at present lack of a wholesome and comprehensive government policy for provision of financial and other support to the management of private land under a permanent covenant. This means that where support is provided to covenantee for onward transmission to landholders, it is often insufficient and on an *ad hoc* basis. As one landholder confirms *"I am in landcare. The sad fact is very little of promised monies ever hit the ground. It is used up in every other way. Paper work etc..."* Vanclay (1994) points out some of the consequences of inadequate funds for extension programs in agriculture - extension agencies tend to target a narrow client base through client base segmentation, removal of free service to farmers to a user-pay basis for services, and adoption of approaches that place responsibility of the problem on the farmers. Insufficient support by government to conservation agencies and to landholders is ineffective for promoting nature conservation ethic and the uptake of permanent covenant as highlighted by a landholder in the study:

"I feel that there has been insufficient recognition of what individual farmers have done without any government or social assistance. I have tried to get government assistance on a number of occasions but have never been successful. It is very costly to do this non-productive work. Labour and material expenses are necessary..."

There is an assumption that landholders are best placed to manage the conservation values on their property because they have the practical knowledge of the area and possibly the management issues to be encountered. Despite land occupancy, landholders may not have the technical knowledge on how to manage the conservation areas to achieve the desired outcomes. Even where this knowledge exists, some may not feel confident that they have it. It has been shown earlier that a cross-section of landholders, even among those that have a strong interest in long-term nature conservation, still require conservation management advice. Several landholders in this study expressed the importance and need for extension (outreach) officers that are conversant with practical conservation as well as theory.

Creation of conservation and covenant awareness requires the use of credible professional experts (Hollick, 1990) with the capacity to target the right audiences, be understood, and generate the interest in landholders in the midst of a barrage of competing information. In addition to extension officers, Hollick (1990) notes that inspectors, contractors, bank managers, and neighbouring farmers (McGuire, 1981) are effective in creating information awareness among landholder. The status quo (ineffectiveness) would have to be maintained without adequate funding to recruit such officers. Currently, for example, Trust for Nature in Victoria is inadequately resourced; it only has one extension officer (Regional coordinator) for every 47 covenants in their program.

The National Trust Covenant Program in Western Australia presently has one extension officer for every eight covenants, though the number of covenants per officer is certain to increase over time. Establishing the optimal number of landholders who an extension officer can support effectively in the different States and regions may help to justify an increase in funding by government for additional extension officers and for actual management of areas under a covenant.

The wetland policy of the Commonwealth Government is one of the most comprehensive nature resource policies that specifically incorporate private landholders. One of its guiding principles of particular relevance to private land is its support for the empowerment of private landholders in their role as long-term custodians of wetlands, and the development of a cooperative partnership approach with them. Prevention of further loss of high value nature conservation areas can only be achieved by working with landholders, encouraging and facilitating them (through focussed and informed policies and programs) to retain high conservation value areas and manage other areas sustainably (Millar, 1998).

6.2.9 Limitations of the study

This study has several limitations that may influence the extent to which its findings can be applied. The samples of landholders were drawn from Victoria and Western Australia, meaning that many geographical areas of the Australia were left out thereby limiting or eliciting caution on the application of the findings outside the two States.

Path models were used to draw several conclusions in the study. Nevertheless, it is clear that the use of multiple regression in path models limits the variables that can be entered, thus resulting in the path models being non-exhaustive of all possible factors that influence landholders' attitudes to uptake of a permanent covenant. Similarly, although attitudes to a permanent covenant may be positive, there was evidence in the study actual uptake of a permanent covenant may not be assured in landholders due to other constraints cited by landholders such as lack of incentives for uptake of covenants. Furthermore, path models are non-replicable, meaning that different researchers are likely to draw different conclusions on variable relationships in the model. The findings and conclusions based solely on path models depend on the strength of the arguments of the individual researcher on the hypotheses set.

The conceptual models presented in this chapter are necessarily simplified for clarity of the interaction of different factors in the uptake of permanent covenants. In addition, they are not exhaustive, as they do not include variables that were neither considered in the study nor articulated in literature. In addition, the global application of the model is untested, as it was intended for use regarding private land conservation in Australia. The purpose of the models, therefore, is to construct and depict the main findings of the study in graphical form with a view to explain the complexities of the observed relationships between factors.

6.2.10 Summary, conclusion, and recommendations

The factors that influence landholders' decisions regarding the uptake of a permanent covenant are multi-faceted. Of the range of factors investigated, several stood out across the different categories of landholders to influence the decision for the uptake of permanent covenants.

Among permanent covenant holders, the said factors are categorized into four main groups, comprising a strong nature conservation ethic, minimal economic dependence on the land, confidence in the permanent covenant mechanism, and non-financial motivation for their decision.

Across the other categories of landholders, decisions and the likelihood of taking up a permanent covenant are also a function of several interactive factors. These include the

landholders' level of confidence in the permanent covenants mechanism, their ethics and values with respect to nature conservation, and the impact of social, political, and economic environments, and institutional arrangements, in which they operate and make land management decisions.

Differences in land management decisions are to be envisaged between the primarily conservation minded permanent covenant holders and landholders who manage their properties predominantly for agricultural production, as well as those that are economically dependent on their property. Importantly, the decision to take up a permanent covenant is partly aided by the suppression or lack of an economic imperative in land management among eco-centric landholders. Thus, permanent covenants are likely to attract those that have little or no economic dependence on their properties and those that have a strong nature conservation ethic. Eco-centrism is invariably the overriding factor in the land management decision of permanent covenant holders. In contrast, economic imperatives, often with a utilitarian approach to management, are the principal factor in the land management decision of landholders who are economically dependent on their land.

The nature conservation areas under most immediate threat and risk of being destroyed are on properties whose owners are likely to be economically dependent on the land and with a poor nature conservation ethic and those that are close to major urban areas. In the absence of a nature conservation ethic, these landholders are likely to avoid a permanent covenant for fear of curtailing future expansion of the agricultural land on which they economically depend or its subdivision for urban development.

Wandén (1997) cites three important requirements in decision-makers for the distribution of responsibility in environmental politics: sufficient insight into complex ecological and social relationships; ability to make ethically reasonable judgements, in particular concerning the place of humans in nature; and efficiency in decision-making. Protection of nature conservation areas that are under immediate threat requires, among others, policy and programs that support compensatory economic incentives to counter the perceived or real loss of income by landholders who are economically dependent on their land. It also requires the provision of resources to programs that promote a strong nature conservation ethic. Such provisions even when they originate from government are more likely to have a positive effect if carried out by locally based bodies or private organisations that are able to distance themselves from a government that is inevitably associated with the imposition and policing of the nature conservation rules and regulations(Farrier, 1995).

Although current landowners may have a high conservation ethic, future landowners may not have a similar ethic and respect for the terms of the covenant that they did not initiate.

This may lead to minimal compliance and neglect of voluntary and positive ongoing management of the conserved areas. The target of nature conservation ethic programs, therefore, ought to go beyond current landowners to include potential future landowners in view of the transferability of land within and across generations. Specific measures to encourage public discussion are necessary in the development of a nature conservation policy and clarification of the role and level of involvement of the public in nature conservation on private land, as well as aiding a stronger conservation ethic among landholders and the public.

Effective use of financial and other economic incentives in motivating landholders to take up a permanent covenant requires that economic conditions prevailing in the rural setting be factored in determining the appropriate levels of incentives for different landholders. Such measures require increased awareness among local, state and federal governments of the short and long-term financial and economic impact of full adoption of the required nature conservation measures on private lands by landholders. The roots of environmental problems have an obvious political content because they are not merely ecological, but also social, economic and cultural (Wandén, 1997). Strategic action to remove impediments and streamline delivery of services to landholders, as well as increased accountability in their conduct towards nature conservation can help to address the concerns raised by landholders about neglect by government of their welfare and efforts in nature conservation.

Federal, State and local governments need to explore mechanisms, methods and forums for optimising the co-operation between different actors in agriculture and nature conservation on private land in order to promote coordination and consistency in the delivery of information and resources to landholders. They can also serve to minimise suspicion of government by landholders and conflict in agricultural production, development of infrastructure, and conservation of nature.

Policies that are broadly targeted at landholders for nature conservation on private land, such as a provision of tax incentives for conservation are likely to have uneven impact on different categories of landholders. It is imperative, therefore, that recognition be made in policy implementation of the segmentation of landholders and the need for a policy impact study on the different landholders according to grouping by region, socio-economic status or by the types of conservation mechanisms they have experienced.

The design and implementation of a particular nature conservation mechanism on private land can affect positively or negatively the uptake of other closely related conservation mechanisms. For example, in Western Australia, landholders who were compelled to take up a fixed-term covenant as a pre-requisite for grant of permit to clear or develop other parts of their property are unwilling to take up a permanent covenant. This, as previously argued in this

thesis, is because they associate it negatively with the involuntary fixed-term covenant. It is important therefore; that the design and implementation of private land conservation mechanisms be preceded by a risk and impact assessment on landholders and other potentially related conservation mechanisms.

A notable increase in likelihood of the uptake of a permanent covenant from non-holders of a covenant or agreement to fixed-term agreement holders confirms the possibility of using fixed-term agreements such as Land for Wildlife Scheme as a transition for bringing non-holders of covenants or agreements to take up a permanent covenant. It is clear through, that the ability of, and scope to which fixed-term agreement or covenant can act as a transition depends on the extent to which their programs promote ideals that attract permanent covenant holders. This is evident from the more pronounced transition to permanent covenant demonstrated through land of wildlife fixed-term agreement in Victoria than through the Remnant Vegetation Protection Scheme fixed-term covenant in Western Australia.

It is advisable for the Remnant Vegetation Protection Scheme to review and possibly remove the compulsion for landholders to place a fixed-term covenant on their land as a pre-requisite for grant of permit to clear or develop another part of their property. This would have the double effect of removing the distaste for other closely related conservation mechanisms among landholders, and strengthen the scheme's role as a transit point for non-holders of a covenant towards full permanent covenant uptake.

It is presumptuous to ask people who have limited resources to change from an established farm practice to another perceived more risky, or more labour or capital intensive, unless some real benefits from the new practice can be demonstrated. Extension policies and programs ought to articulate the benefits of permanent covenants and to clarify and emphasize the connection between biodiversity on private land and landowners' goals and aspirations. They also need to be targeted at the public with a view to promoting an understanding of nature conservation principles and values, and clarifying the expected public contribution to the cost of nature conservation on private property. The obvious lack of adequate public information on the benefits of permanent covenants also needs to be addressed by outreach programs that target increased covenant uptake.

Economic incentives to support land stewardship and to address deficiencies in nature conservation equity and property rights can increase the uptake of permanent covenants in all categories of landholders. Extension programs provide a viable context for delivery of financial incentives to landholders because of their potential to incorporate a whole farm plan approach.

The success of nature conservation mechanisms on private land depends on their effective incorporation into, and address in, landholders' economics situations, environmental

requirements, and social structure of the rural landscape and its inhabitants. A wholesome private land conservation policy and strong policy interventions are necessary for improving nature conservation on private land and the uptake of permanent covenants. Such interventions include the following measures: inculcating an interest in long-term nature conservation in landholders, addressing and clarifying property rights and equity in respect to nature conservation, providing well-targeted economic and financial support, increasing awareness and knowledge about permanent covenant mechanisms, increasing the transparency and efficiency of government and private land conservation schemes by streamlining the management and administration.

Further research and collation of information on the social-cultural and economic impact of adoption of different nature conservation approaches by landholders is necessary for streamlining and guiding policy formulation and implementation. Covenanting organisations and their partner organisations can play an important role in encouraging such research. Other opportunities for further research in the use of management agreement mechanism on private land exist particularly on the impact of different mechanisms on each other, and evaluation of the impact of current and potential government policies on the uptake of specific management agreements for nature conservation.

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Appendices

Appendix 2. 1 Changes made to the questionnaire instruments

	Column 1	Column 2	Column 3
Comments	No covenant	Fixed-term covenant	Permanent covenants
No changes made	1. What type of farm do you manage?	1. What type of farm do you manage?	1. What type of farm do you manage?
No changes made	2. How long has this property been in your family?	2. How long has this property been in your family?	2. How long has this property been in your family?
No changes made	3i. What is the total area of your property in hectares or acres?	3i. What is the total area of your property in hectares or acres?	3i. What is the total area of your property in hectares or acres? %
No changes made	3ii. What proportion on your property is; - Owned (Freehold). Rented or leased %	3ii. What proportion on your property is; - Owned (Freehold)? Rented or leased %	3ii. What proportion on your property is; - Owned (Freehold)? - Rented or leased (From Government, company or individual)? ——%
Col 1Changed 'size' for 'area'.	3iii. What approximate area of owned property (freehold) is Worked? And fallow?	3iii. What approximate size of owned property (freehold) is Worked? And Fallow	3iii. What approximate size of your property (NOT leased land) is Worked? And fallow
No changes made			3iv. How many hectares of your property are under a permanent covenant for nature conservation? Ha
No changes made		4 Please provide information on all conservation agreements (eg. Land for wildlife, water catchment protection) on your land by filling in the tables below 4a Name of agreement 4b Organisation responsible 4d Total area in hectares for each conservation feature covered- Ha Num 4e Duration of agreement.	
Col 1 Changed sentence from 'what conservation or natural heritage features...'	4i. Which of the following 'conservation' features are on you property?	4e Types of conservation features covered 5ii. If YES, what types of conservation or natural heritage features are they? (additional conservation areas	4ii. If YES, what conservation or natural heritage features are on you property?
No changes made	4ii. What proportion of your property (NOT leased land) do these conservation or natural heritage features occupy?		

Appendix 2.1 continued

No changes made		5i. Are there other areas of your land, apart from those covered under the fixed-term agreements or covenant, which you consider to have nature conservation or natural heritage features? **Yes-No**	4i. Are there other areas of your land, apart from those covered under the permanent covenant that you consider having nature conservation or natural heritage features? **Yes-No**
No changes made		5iii. What total areas of your property (NOT leased land) do these conservation or natural heritage features occupy? Ha	4iii. What total areas in hectares do these additional (NOT leased land) conservation or natural heritage features occupy? Ha
No changes made	5. Which of the following statements below (labelled a-n) best describe your primary reason and secondary reasons for having retained areas of your property in their natural state?	6. Primary and secondary reasons for having retained areas of your property in their natural state BEFORE you entered a fixed-term conservation agreement or covenant?	6. Primary and secondary reasons for having retained areas of your property in their natural state BEFORE you entered a permanent covenant?
No changes made	8a What activities, if any, did you carry out to maintain or enhance the areas of your property in their natural state?	7. In the period BEFORE you entered a fixed-term conservation agreement or covenant what activities, if any, did you carry out to maintain or enhance the areas of your property in their natural state	8a. In the period BEFORE you entered a permanent covenant what activities, if any, did you carry out to maintain or enhance the areas of your property in their natural state?
New follow up question on Col2	8b. IF YES, approximately how much money and time did you spend on the nature conservation areas in the last two years? Hours and dollars	7b.IF YES, approximately how much money and Time did you spend on the nature conservation areas in the last two years? Hours and dollars	8b. IF YES, approximately how much money did you spend on the up-keep of the nature conservation areas in the last two years before you entered a covenant on your land? Hours and dollars
Col 2 Changed to "I will retain"	6a. Do you anticipate retaining ownership of your property within the family in the future? Yes-No-Not sure	11g. I anticipate retaining ownership of my property within the family in the future. Yes-No-Not sure	7a. Before you entered the permanent covenant on your land, did you anticipate retaining ownership of your property within the family in the future? Yes-No-Not sure
No changes made		8. Before you entered the fixed-term conservation agreement or covenant on your land, did you anticipate retaining ownership of your property within the family in the future? Yes-No-Not sure	
No changes made		9. Before you entered the fixed-term conservation agreement or covenant on your land, did you anticipate retaining the management of your property in the family in the future? Yes-No-Not sure	
No changes made	6b). Do you anticipate *Retaining* the management of your property in the family in the future? Yes-No-Not sure	11h. I anticipate retaining the management of my property within the family in the future. **Yes-No-Not sure**	7b. Before you entered the permanent covenant on your land, did you anticipate retaining the *management* of your property within the family in the future? **Yes-No-Not sure**

Appendix 2.1 continued

No changes made	7. Are you a member or do you support any of the following nature conservation groups/organisations?	10. Are you a member or do you support any of the following nature conservation groups/organisations Number of Organisations	9. In the period before you entered a permanent covenant on your land, were you a member or did you support any of the following nature conservation groups/organisations?
No changes made	10(i). Please Tick or circle 'True' or 'False' or 'Not Sure' for each of the following statement.	11. Please circle 'Yes' or 'No' or 'Not Sure' for each of the following statement.	
No changes made	10i.a I have NEVER heard about a permanent covenant for nature conservation before. T-F	11a. At the time I entered an agreement or fixed-term covenant I was aware of the option of entering a permanent covenant. T-F	
No changes made	10i.b. I have heard about fixed-term covenants (also called fixed-term management agreements) T-F		
No changes made		11b. I entered the fixed-term agreements or fixed-term covenant on my land because it was a requirement for receiving support from an agency. T-F	
No changes made	10ic. I have made inquiries about permanent covenants for nature conservation in the past T-F.	11c. I have made inquiries about permanent covenants for nature conservation since entering the agreement or fixed-term covenant T-F.	
No changes made	10id. I am familiar with the available permanent covenant programs for nature conservation in the state. T-F	11d. I am familiar with the available permanent covenant programs offered in the state. T-F	
Removed '--- processes' in Col3 replaced with 'procedure'	10ie. I know the procedures for entering a permanent nature conservation covenant on my land T-F	11e. I know the procedure for entering a permanent covenant for nature conservation on my land. T-F	
Col2 Removed word 'genuinely'	10if. I would like to know more about permanent nature conservation covenants T-F-Ns	11f. I would like to know more about permanent covenants for nature conservation T-F.	
See changes have been made to questions posed Col1	11. What importance would you give to each of the following issues noted below in deciding whether to enter a voluntary permanent covenant for nature conservation on your land?	12. What importance would you give to each of the following issues noted below in deciding whether to enter a voluntary permanent covenant for nature conservation on your land?	10. How important were the following considerations to you when you were making a decision on whether to enter a permanent covenant for nature conservation for the first time?
Changed wording to 'frequent in column 1 and 3.	11a. Whether I will receive frequent management advice on conservation.	12a. Whether I would receive more frequent management advice on conservation than at present.	10a. Whether I would receive frequent management advice on conservation.

Appendix 2.1 continued

Removed 'be' column 1 and changes in wording in Col 2 &3	11b. Whether a covenant will bring public recognition and appreciation of the conservation values on my land.	12b. Whether a permanent covenant would bring increased public recognition and appreciation of conservation values on my land.	10b. Whether a permanent covenant would bring public recognition and appreciation of conservation values on my land.
Col 2 'of' instead of 'for' and 'provide'.	11c. Whether a permanent covenant will assure the long- term nature conservation	12c. Whether a permanent covenant would provide greater assurance of long-term nature conservation than under the agreement or fixed-term covenant.	10c. Whether a permanent covenant would provide greater assurance for long-term nature conservation than under the other conservation agreements
No changes made	11d. Whether by entering a permanent covenant I can receive some on-going financial support to carry out the necessary conservation work.	12d. Whether by entering a permanent covenant I would receive additional on-going financial support to carry out the necessary conservation work.	10d. Whether by entering a permanent covenant I would receive some on-going financial support to carry out the necessary conservation work.
No changes made	12. How strongly do you agree or disagree with the following statements (a-h) in the table below on fixed-term covenants or agreements and permanent covenants?	13. How strongly do you agree or disagree with the following statements (a-h) in the table below on fixed-term agreements and permanent covenants?	11 How strongly do you agree or disagree with each of the following statements (a-i) on your views about permanent covenants in the period before you entered a permanent covenant on your land?
Changed col 1- new sentence. Altered sentences in col2 and 3	12b. I am concerned about entering any conservation arrangement that would place some permanent restrictions on the use of the conservation areas.	13a. I am concerned about entering any conservation arrangement that would place some permanent restrictions on the use of the conservation areas.	11a. Initially I was concerned about entering any conservation arrangement that would place some permanent restrictions on the use of the conservation areas.
See change in col 3 'I felt' And in col 2- I have omitted 'I felt'	12a. There are more effective mechanisms other than permanent covenants for promoting the long-term nature conservation on private lands.	13b. There are other more effective mechanisms than permanent covenants for promoting the long-term nature conservation on private lands.	11b. I felt there were other equally effective mechanisms than permanent covenants for promoting the long-term nature conservation on private lands.
Col 1-no11b has been omitted and relaced by a	12i.Placing a permanent covenant on my land would cause it to lose in market value.	13c.Placing a permanent covenant on my land would cause it to lose in market value.	11c. I was concerned about a possible loss in market value of my property as a result of entering a permanent covenant on my land
Changes made to Col 1,2,3	12h. I would be inclined to enter a permanent nature conservation covenant on my land if neighbouring landholders or friends having similar natural areas with a permanent covenant.	13d. I would be inclined to enter permanent nature conservation covenant on my land if neighbouring landholders or friends having similar natural areas with permanent covenant.	11d.I was inclined to enter a permanent covenant on my land in part, due to the presence of neighbours or friends having similar natural areas with permanent covenant.
No changes made			4iv. How long have you had a permanent covenant on your property? ----Years ----months.
No changes made		13e. I would be inclined to place a permanent covenant on my land if there was some compensation for the limitations of use of the land areas covered under a covenant	18a I could have placed more areas of my land under a permanent covenant if there was some compensation for the limitations of use of the land areas covered under a covenant.

Appendix 2.1 continued

No changes made		13f. I would place more areas of my land under a fixed-term covenant if there were some compensation for the limitations of use of the areas covered under a covenant.	
No changes made		13g. It is UNLIKELY I would have placed a fixed-term covenant on my land if the restrictions on clearing of native bushland did not exist.	
No changes made			11g. It is UNLIKELY I would have placed a permanent covenant on my land if regulatory restrictions on clearing of native bushland did not exist.
No changes made	12. How strongly do you agree or disagree with the following statements (a-f) in the table below on permanent covenants?	14. How strongly do you agree or disagree with the following statements (a-f) in the table below as reflecting present views on permanent covenants and nature conservation on private land?	
No changes made	12e I would prefer to divide and sell off the areas of my land with conservation or natural heritage values to a conservation-minded individual or organisation rather than to personally manage it under a permanent covenant	14a. I would prefer to divide and sell off the areas of my land with conservation or natural heritage values to a conservation-minded individual or organisation rather than to personally manage it under a permanent covenant.	
No changes made	19d.Presently, I prefer to maintain the nature conservation areas on my land WITHOUT the use of a permanent covenant.	14b. Presently, I prefer to maintain nature conservation on my l and under a fixed-term agreement to entering a voluntary permanent covenant.	
No changes made	12d The nature conservation features on my land will be conserved by the management that will take over from me even WITHOUT placing a permanent covenant on it		11j. I was concerned about a likelihood of the conservation areas being altered by future owners or managers
Remove word 'seriously'	12g.I would consider a permanent covenant just prior to selling my land to protect existing nature conservation features.	14c. I would consider a permanent covenant just prior to selling my land to protect existing nature conservation features.	
No changes made			11f. It is UNLIKELY I would have placed a permanent covenant on my land if the present conservation areas had a higher potential for agricultural production than other parts of the land.
Note change to 'apparent' instead of evident' in col1	19e. The benefits of a permanent covenant on my land are NOT apparent to me.	14d. The benefits of a permanent covenant over the current fixed-term conservation agreement or covenant on my land are NOT apparent.	

Appendix 2.1 continued

Rating for col 1 was changed to sync with the other two.	12f.It is necessary that the organisation with which I enter a permanent covenant on my land to be independent of Government	14e. It is necessary that the organisation with which I enter a permanent covenant on my land to be independent of Government.	11e.It was NECESSARY for the organisation with which I was to enter a permanent covenant to be independent of Government.
No changes made	12j. Permanent covenants are an effective mechanism for supporting salinity control on private lands.		11j. I believed permanent covenants to be an effective mechanism for salinity control measure on private lands
No changes made			11h. I felt there were economic gains to be realised in the future by using a permanent covenant as a long-term nature conservation mechanism on my land.
No changes made		14f. I would consider entering a permanent covenant on my land when the current term of my conservation agreement or fixed-term covenant expires.	.
No changes made	13. How many people (including family) work for pay on your property on	15. How many people (including family) work for pay on your property on;	12. At the time you entered a permanent covenant, how many people (including family) worked on your property on;
Change date to 1999 since questionnaire was to be sent out in 2000.	14. Which of the following categories best describes your approximate total income before taxes, derived from your property (including leased areas) in 1998?	16. Which of the following categories best describes your approximate total income before taxes, derived from your property (including leased areas) in 1998?	13. Which of the following categories best describes your approximate total income before taxes, derived from your property (including leased areas) in the year you entered a permanent covenant on your land?
Change date to 1999 since questionnaire	15. Which of the following categories best describes your approximate total income before taxes, derived from sources OUTSIDE your property in 1998?	17. Which of the following categories best describes your approximate total income before taxes, derived from sources OUTSIDE your property in 1998?	14. Which of the following categories best describes your approximate total income before taxes, derived from sources OUTSIDE your property in the year you entered a permanent covenant on your land?
No changes made	16. Which of the following best describes the approximate total expenditure associated with your property (including leased area) in 1998?	18. Which of the following best describes the approximate total expenditure on your property (including leased area) in 1998?	15. Which of the following best describes the approximate total expenditure on your property (including leased area) in the year you entered a permanent covenant on your land?
No changes made	17(a). Do you have a current debt on your property?	19(a). Do you have a current debt on your property?	16(a). Did you have a debt on your property at the time you entered a permanent covenant on your land?
No changes made	17(b) If YES, in which of the following categories does your property's current debt amount fall?	19(b) If YES, in which of the following categories does your current debt amount fall?	16(b) If YES, In which of the following categories did your debt amount fall?
No changes made	17(c). Consider the gross income of your property in the last financial year. What proportion of it did you spend to pay your debt in that period?	19(c). Consider the gross income of your property in the last financial year. What proportion of it did you spend to pay your debt in that period?	16(c) At the time you entered a permanent covenant on your land, what proportion of the debt was serviced by revenue derived from the property?

Appendix 2.1 continued

No changes made	18. Have you ever received financial support/benefits to undertake nature conservation work on your land from any organisation or department?	20. Did you ever receive any financial support/benefit to undertake nature conservation work on your land from any organisation or department before you entered a fixed-term agreement or fixed-term covenant on your land?	17. Did you ever receive any financial support/benefits to undertake nature conservation work on your land from any organisation or department before you entered a permanent covenant on your land?
No changes made		20. How strongly do you agree or disagree with the following statements (a-f) in the table below as reflecting your opinion about the need to seek assistance when entering a permanent covenant.	18. How strongly do you agree or disagree with the following statements (a-f) in the table below as reflecting the opinion you held about the need to seek assistance when entering a permanent covenant.
No changes made	19a. Permanent covenants should come with a mechanism for compensating for loss of future productive use of my piece of land.	20c. Permanent covenants should come with a mechanism for compensating for loss of future productive use of my piece of land.	
Change made to col 1 need similar changes to col 2 and 3	19b. Non-financial recognition by state and local government of my efforts to conserve nature would be a significant step in motivating me to enter a permanent covenant on my land.	20d. Non-financial recognition by state and local government of my efforts to conserve nature would be a significant step in motivating me to enter a permanent covenant on my land.	18b I could have had more enthusiastic to entering a permanent covenant on my land if there was some NON-financial recognition by state and local government of my efforts to conserve nature.
No changes made	19f. The cost of entering a permanent covenant on my land should be covered by the agency/organisation issuing the covenant	20e. The cost of entering a permanent covenant on my land should be covered by the agency/organisation issuing the covenant.	18e I believed the cost of entering a permanent covenant on my land should be covered by the agency/ organisation issuing the covenant.
No changes made	19c. I would NOT consider entering a permanent covenant under any circumstances.	20f. I would NOT consider a permanent covenant under any circumstances	
No changes made	12. Please tick 'True' or 'False' or 'Not Sure' about permanent covenants.		
Rewrite questions to tally with the permanent covenant category style	20a. Conservation of nature on your property has benefits to you and to the public. Do you consider the public to have any responsibility for the cost incurred in conservation on your property?	21a. Conservation of nature on your property has benefits to you and to the public. Do you consider the public to have any responsibility for the cost incurred in conservation on your property?	19a. Conservation of nature on your property has benefits to you and to the public. Do you consider the public to have any responsibility for the cost incurred in conservation on your property?
No changes made	20b. If YES, what percentage of the cost of nature conservation on your land do you consider should be covered by the public?	21b. If YES, what percentage of the cost of nature conservation on your land do you consider should be covered by the public?	19b. If YES, what percentage of the cost of nature conservation on your land do you consider should be covered by the public If you were to enter a permanent covenant on your land today.
No changes made	21. In your opinion, what actions or policies can the state government put in place to make it more favourable for landholders to enter permanent covenants for nature conservation on their land?	22. In your opinion, what actions or policies should the State government in whose jurisdiction your property lies put in place to make it more favourable for landholders to enter permanent covenants for nature conservation on their land?	20. In your opinion, what actions or policies can the state government put in place to make it more favourable for landholders to enter permanent covenants for nature conservation on their land?

Appendix 2.1 continued

No changes made	22. In your opinion, what actions or policies should the local government in whose jurisdiction your property lies put in place to make it more favourable for landholders to enter permanent covenants nature conservation on their land?	23. In your opinion, what actions or policies should the local government in whose jurisdiction your property lies put in place to make it more favourable for landholders to enter permanent covenants for nature conservation on their land?	21. In your opinion, what actions or policies should the local government in whose jurisdiction your property lies put in place to make it more favourable for landholders to enter permanent covenants nature conservation on their land?
No changes made	23. In what year were you born?	24. In what year were you born?	22. In what year were you born?
No changes made	24. Are there any comments you would like to make about any other issues relating nature conservation on private lands and/or permanent covenants?	25. Are there any comments you would like to make about any other issues relating nature conservation on private lands, permanent covenants, incentives and/or equity	23. Are there any comments you would like to make about any other issues relating nature conservation on private lands, permanent covenants, incentives and/or equity?
Extra question included	10a. Do you currently have a management agreement or covenant with another party aimed at nature conservation on your property? (1) Yes [ ] (2) No [ ]		5a. Before you entered a permanent covenant on your land did you ever have a fixed-term conservation agreement or fixed-term covenant on your land? (Please Tick or circle the appropriate response
Additional Question	11(ii) If you have made inquiries about permanent covenants for nature conservation, to who was the inquiry directed?		5a. Before you entered a permanent covenant on your land, did you have any fixed-term management agreement or covenant with another party aimed at nature conservation on your property?
			5b. IF YES, Please provide the following information below; Name of Agreement Length of time agreement was to last (Years) Area of land covered by the agreement (Ha)

Appendix 2. 2 Sample letter mailed with the final questionnaire instrument

CENTRE FOR
ECOSYSTEM
MANAGEMENT

Edith Cowan University.
100 Joondalup Drive.
Joondalup,
Western Australia, 6027.

Date

Dear Landholder,

RE: Your views and opinion on nature conservation Covenants on Private lands

Thank you for taking the time to read this letter.

The Centre for Ecosystem Management at **Edith Cowan University** (WA) with the assistance of ---*(name of supporting organisation)*---, are conducting a questionnaire survey with the aim of collecting **the views and opinions of private landholders** about nature conservation covenants and incentives for nature conservation.

You have been selected randomly among many private landholders in Victoria and Western Australia for participation in this study, which is aimed at providing a better understanding to policy makers, of the views of private landholders on conservation and covenants as mechanisms for nature conservation. These are already in use in most States in Australia.

This study is also the basis of a PhD project being conducted by Mr. Thomas Kabii under the supervision of Dr. Pierre Horwitz, Professor Alan Black and Dr. Jackie Alder of Edith Cowan University.

I kindly request you to answer all questions in the enclosed questionnaire. On completion of the questionnaire, kindly mail it to me in the enclosed prepaid, self-addressed envelop.

Please feel free to contact me (Thomas Kabii) on collect call Tel. 08- 9400 5861, or to contact Dr. Pierre Horwitz on Tel. 08 94005558 for any clarification or comments on the questionnaire or the overall study.

I wish to thank you once again for your anticipated support.

Yours sincerely,

Thomas Kabii.

Centre for Ecosystem Management.

Appendix 2. 3 Sample letter mailed as a reminder to those that had not responded or returned the mailed out questionnaire instrument

Edith Cowan University.
100 Joondalup Drive.
Joondalup,
Western Australia, 6027.

Date

Dear Landholder/Proprietor,

RE: Your views and opinion on nature conservation Covenants on Private lands

This letter is a gentle **reminder that we are still interested in your views** that we requested for in the attached questionnaire, which was mailed to you in May 2000.

This questionnaire survey relates to a nature conservation study which I am conducting with the support of (*name of supporting organization*), and the Centre for Ecosystem Management at **Edith Cowan University** (WA).

The aim of the survey is to collect the views and opinions of private landholders about nature conservation covenants and incentives for nature conservation. In the possibility that the questionnaire did not get to you, or has been misplaced, we have enclosed a copy of the same questionnaire for your attention. **If you have completed this questionnaire before, please do not complete this one, but send it back to me with a note to that effect.**

It is hoped the study with provide a better understanding to policy makers, of the views of private landholders on conservation mechanisms for nature conservation. These are already in use in most States in Australia. It is also the basis of a Ph.D. project being conducted by myself under the supervision of Dr. Pierre Horwitz, Professor Alan Black and Dr. Jackie Alder of Edith Cowan University.

Kindly complete the enclosed questionnaire and mail it to me in the enclosed prepaid, self-addressed envelope by 20th November 2000.

Please feel free to contact me (Thomas Kabii) on collect call Tel. 08- 9400 5861, or to contact Dr. Pierre Horwitz on Tel. 08 94005558 for any clarification or comments on the questionnaire or the overall study.

I wish to thank you once again for your anticipated support.

Yours sincerely,

Thomas Kabii.

Centre for Ecosystem Management.

Appendix 2. 4 Final Questionnaire- Landholders with a permanent covenant

Questionnaire Survey on Permanent Nature Conservation Covenants on Private Land in *Western Australia and Victoria* 2000

For landholders with a Permanent Covenant

This survey is to find out your past and present views on nature conservation, and permanent covenants as mechanisms for nature conservation on your land. It also seeks your views about incentives and equity as issues for encouraging the placing of permanent nature conservation covenants on your land.

Declaration of Confidentiality

The information that you provide in this questionnaire will be used for the sole purpose of the stated objectives of the study and WILL NOT be given to any other party. You will not be identified in the study.

By completing the questionnaire, you will be giving consent to the researcher to use the information you provide for the sole purpose of the study.

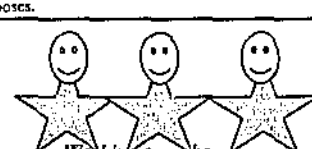
Definitions of key terms used in this questionnaire

The term **'permanent covenant'** is used to mean a voluntary management agreement in perpetuity that is attached to the land title, binding current and future owners of the land.

Fixed-term conservation covenant for nature conservation refers to binding **conservation agreements** entered into voluntarily by a landholder and another party for a specified period of time. A fixed-term covenant is attached to the land title.

Fixed-term conservation agreement refers to a non-binding agreement between a landholder and another party for a specified period of time. It is based on mutual trust to carry out the terms of the agreement.

The term **'nature conservation'** areas refers to areas set aside in their natural condition on your land to conserve some natural features such as wetlands, bushland, native vegetation, native grassland. They may also be areas that are a habitat for rare, endangered or vulnerable plant or animal species, areas that are used as transit route by some native animals, or areas that serve an important environmental protective role or areas that serve an important water balance functions to the region, or areas that have other functions you might consider relevant for heritage purposes.



Shire:..... Date of Survey:----/----/-2000 Fol__

To fill in the survey:
Some questions require written responses, some the circling of a number or placing of a *tick* in a box next to the number that corresponds to the statement or listed comment with which you agree. For most questions the required response will be stated.

Please answer all the questions.

Section A: This section is about your property and its management.

1. What type of farm do you manage? (*Please tick the appropriate box*).

(1) Cropping [ ]
(2) Cropping/Sheep [ ]
(3) Cropping/Sheep/Cattle [ ]
(4) Sheep/Cattle [ ]
(5) Hobby farming [ ]
(6) Conservation purpose [ ]
(7) Others – Please specify
.....[ ]

2. How long has this property been in your family?

(1) Under 2 years [ ]
(2) 2 - 5 years [ ]
(3) 6 - 10 years [ ]
(4) 11 - 20 years [ ]
(5) 21 - 30 years [ ]
(6) 31 - 40 years [ ]
(7) More than 40 years [ ]

3a. What is the total area of your property in hectares or acres? ____Acres / ____Hectares

3b. What proportion on your property is;
- Owned (Freehold)? ____%
- Rented or leased (From Government, company or individual)?....____%

3c. What approximate size of your property (NOT leased land) is - Worked? ____Ha
- Fallow? ____Ha

3d. How many hectares of your property are under a permanent conservation covenant?
____Ha

4a. Are there other areas of your land, apart from those covered under the permanent covenant, which you consider having nature conservation or natural heritage features?

(1) Yes [ ] → *(Go to Question 4b)*
(2) No [ ] → *(Go to Question 4d)*
(3) Not sure [ ] → *(Go to Question 4d)*

4b. If YES, what conservation or natural heritage features are on you property?(Please tick or circle the appropriate response)

(1) Stream/river (4) Native grasslands [ ] (5) Others (Please specify) .....
(2) Wetlands [ ] .....
(3) Native bush land [ ]

4c. What size of your property (NOT leased land) do these natural features occupy?

.....Ha

4d. Did your land have a permanent covenant when you acquired it?
(1) Yes [ ] (2) No [ ] → *(Go to Question 6)*

4e. How long have you had a permanent covenant on your property? ___years ___ months.

5a. Before you placed a permanent covenant on your land, did you have any other conservation agreement or a fixed-term covenant on it? *(Please Tick or circle the appropriate response below).*
(1) Yes [ ] (2) No [ ] → **Go to Question 6**

5b. If Yes, please give the following information.

Name of Agreement or Covenant (eg. Land for Wildlife Agreement or Remnant Vegetation. Protection Scheme)	Name of department or organisation with which the agreement was held.	Length of time agreement was to last (Years)	Area of land covered by the agreement (Ha)

6. Please tick 'True', 'False' or 'Not sure' to the following statements (a-f) below.

a). Before I placed a permanent covenant on my land I anticipated **retaining ownership** of my property in the family in the future?	*True*	*False*	*Not Sure*
b). Before I placed a permanent covenant on my land I anticipated **retaining the management** of my property within the family in the future?	*True*	*False*	*Not Sure*
c). Before I placed a permanent covenant on my land I was aware of the option of entering a fixed-term conservation agreement instead.	*True*	*False*	
d). I would still have placed a permanent covenant on my land if regulatory restrictions on clearing of native vegetation did not exist.	*True*	*False*	*Not sure*
e). I would NOT have placed a permanent covenant on the conservation areas of my land if I was convinced that altering them for agricultural production would bring greater economic returns than they currently do.	*True*	*False*	*Not sure*
f). I believed the cost of entering a permanent covenant on my land should be covered by the agency/organisation issuing the covenant.	True	False	

7. Which of the following statements below (labelled *a-m*) best describe your one **primary** and two **secondary** reasons for having retained the present conservation areas on your property **BEFORE** you placed a permanent covenant? (*Please indicate **one** primary reason by writing (1) in the box next to the statement, and write (2) in other boxes to indicate your secondary reasons.*

(a) For seasonal grazing. [ ]
(b) For recreational use. [ ]
(c) For future agricultural use. [ ]
(d) To support wildlife conservation. [ ]
(e) To preserve native vegetation. [ ]
(f) To act as wind break or buffer. [ ]
(g) To act as a wildlife corridor [ ]
(h) For scenic reasons [ ]
(i) For soil salinity control [ ]
(j) Cost of clearing for cropping or pasture was not economical [ ]
(k) For shade and shelter for stock [ ]
(l) Provision of fresh water. [ ]
(m) Others (please specify).---------- [ ]

8a. In the period **BEFORE** you placed a permanent covenant, did you carry out any activity to maintain or enhance the conservation areas present on your land? (*Please tick the appropriate response below*).

(1) *Yes* [ ] (Please state the main activities carried out)

(i) .....

(ii) .....

(2) **None** [ ] ⟶ **Go to Question 9**

8b. IF YES, approximately how much money and time did you spend on the up-keep of the nature conservation areas in the last two years before you entered a covenant on your land?

(1) [ ] dollars Time [ ]

9. In the period **before** you placed a permanent covenant on your land, were you a member or did you support any of the following or other nature conservation groups/organisations? *(Please tick all the relevant ones).*

(1) Land Conservation Group. [ ]
(2) Greening Australia. [ ]
(3) Land for Wildlife. [ ]
(4) Nature conservation group (eg. *Wildflower Society, Birds Australia, Naturalist Club, Australian Conservation Foundation, Conservation Council*). [x]
(5) Others – (*Please Specify*).

_____

(6) I was not a member and I did not support any conservation group/organisation [ ]

Section B : This section seeks your opinion on the use of permanent covenants for nature conservation on private lands.

10. **Before you entered a voluntary permanent covenant on your land, how important** was the following issues (a-e) in determining your decision to place a permanent covenant on your land? (*Use the following scale 1-6 below to make your rating*).

1. Definitely NOT important.
2. Probably NOT important.
3. Neutral
4. Probably important
5. Definitely important
6. Did not consider it

Tick or circle one rating on the scale of 1-6 for each of the issue statements below.

a	Whether I would receive long-term management advice on conservation.	1	2	3	4	5	6
b	Whether there would be increased public recognition and appreciation of conservation values on my land.	1	2	3	4	5	6
c	Whether a permanent covenant would provide greater assurance for long-term nature conservation than under the other conservation agreements.	1	2	3	4	5	6
d	Whether by entering a permanent covenant I would receive some on-going financial support to carry out the necessary conservation work.	1	2	3	4	5	6
e	The organisation with which I place a permanent covenant should be independent of Government.	1	2	3	4	5	6

11. How much did the following stated reasons (a-f) influence your decision to place a permanent covenant on your land?

1. *Very much.*
2. *Much*
3. *A fair amount*
4. *A little*
5. *Not at all*
6. *Don't know*

Tick or circle one rating on the scale of 1-6 for each of the statements below.

a	Convinced there were no other equally effective mechanisms than permanent covenants for promoting the long-term nature conservation on private lands.	1	2	3	4	5	6
b	The presence of neighbours or friends having a permanent covenant on similar nature conservation areas as mine.	1	2	3	4	5	6
c	Felt there were economic gains to be realised in the future by using a permanent covenant as a long-term nature conservation mechanism on my land.	1	2	3	4	5	6
d	Convinced a permanent covenant was an effective mechanism for present or future salinity control measure on my land.	1	2	3	4	5	6
e	Viewed permanent covenants as an opportunity to demonstrate to others the importance of long-term nature conservation on private land.	1	2	3	4	5	6
f	Concerned about a likelihood of the conservation areas being altered by future owners or managers of this land.	1	2	3	4	5	6

11b. Place the above stated reasons (a-f) in their **order of importance** by writing '1-6' for the highest importance to the lowest importance in the boxes.

12. To what extent did the following concerns (a-b) influence the **size of the conservation area** on which you placed a permanentcovenant?

1. *Very Much.*
2. *Much*
3. *A fair amount*
4. *A little*
5. *Not at all*
6. *Don't Know*

Tick or circle one rating on the scale of 1-6 for each of the statements below

a	Concerned about a possible lose in market value of my property as a result of entering a permanent covenant on my land.	1	2	3	4	5	6
b	Concerned about entering any conservation arrangement that would place some permanent restrictions on the use of the conservation areas.	1	2	3	4	5	6

Section C: This section is about social and economic issues relating to the management of your property.

13. At the time you placed a permanent covenant, how many people (including family) worked on your property on;

(a). Salaried full time basis? ---------- (b) contract workers? ----------

(c). Salaried part time basis? ---------- (d) non-paid workers? ----------

14. Which of the following categories best describes your approximate total income before taxes, derived from your property (including leased areas) in the year you placed a permanent covenant on your land? (*Tick* **ONE** only).

(1) None [ ] (5) $100,001 to $200,000 [ ]

(2) $25,000 or less [ ] (6) $200,001 to $300,000 [ ]

(3) $25,001 to $50,000 [ ] (7) $300,001 and more [ ]

(4) $50,001 to $100,000 [ ] (8) Withhold/Don't know [ ]

15. Which of the following categories best describes your approximate total income before taxes, derived from sources OUTSIDE your property in the year you placed a permanent covenant on your land? (*Tick* **ONE** only).

(1) $10,000 or less [ ] (4) $50,001 to $70,000 [ ]

(2) $10,001 to $20,000 [ ] (5) $70,001 and more [ ]

(3) $20,001 to $50,000 [ ] (6) Withhold/Don't know [ ]

16. Which of the following best describes the approximate total expenditure on your property (including leased area) in the year before you placed a permanent covenant on your land? (*Tick* **ONE** only).

(1) None [ ] (5) $50,001 to $100,000 [ ]

(2) $10,000 or less [ ] (6) $100,001 and more [ ]

(3) $10,001 to $30,000 [ ] (7) Withhold/Don't know [ ]

(4) $30,001 to $50,000 [ ]

17a. Did you have a debt on your property at the time you placed a permanent covenant on your land?

(1)Yes [ ] (2) No [ ] ⟶ **(Go to Question 18)**

17b If YES, In which of the following categories did your debt amount fall?

(1)	$10,000 or less [ ]	(6)	$300,001 to $400,000 [ ]
(2)	$10,001 to $50,000 [ ]	(7)	$400,001 to $500,000 [ ]
(3)	$50,001 to $100,000 [ ]	(8)	$500,000 and more [ ]
(4)	$100,001 to $200,000 [ ]	(9)	Withhold/Don't know [ ]
(5)	$200,001 to $300,000 [ ]		

17c At the time you placed a permanent covenant on your land, what proportion of the debt was serviced by revenue derived from the property? *(Please tick or circle **ONE** only).*

(1)	None [1]	(4)	between 51% and 75% [4]
(2)	between 1% and 25% [2]	(5)	between 76% to 100% [5]
(3)	between 26% and 50% [3]		

Section D : This section is an\bout your views on the necessary assistance to enter Permanent Covenants

18. Did you ever receive any financial support/benefits to undertake nature conservation work on your land from any organisation or department before you placed a permanent covenant on your land?

(1) Yes, once [ ] (2) Yes more than once [ ] (3) No [ ]

19. How strongly do you agree or disagree with the following statements (a-b) about how you felt about assistance for entering a **permanent covenant**. Choose your response from the list of views provided in numbers 1-6.*and tick or circle the number in the box which corresponds to your opinion.*

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree
6. Undecided/don't know

The statements are : In the period before I placed a permanent covenant;

a	I could have placed more areas of my land under a permanent covenant if there was some compensation for the limitations of use of the land areas covered under a covenant.	1	2	3	4	5	6
b	I could have placed more land under a permanent covenant if there was some NON-financial recognition by State and Local Governments of my efforts to conserve nature.	1	2	3	4	5	6

20a. Conservation of nature on your property has benefits to you and to the public. Do you consider the public to have any responsibility for the cost incurred in conservation on your property?

(1) Yes [ ] (2) No [ ] (3) Not Sure [ ]

20b. **If YES,** what percentage of the cost of nature conservation on your land do you consider should be covered by the public if you were to place a permanent covenant on your land today?

(Please tick or circle the appropriate response)

Nil % 1-10% 11-20% 21-30% 31-40% 41-50% 51-60% 61-80% 81-100%

21. In your opinion, what actions or policies can the State government put in place to make it more favourable for landholders to place a permanent covenant for nature conservation on their land?

22. In your opinion, what actions or policies should the Local government in your jurisdiction put in place to make it more favourable for landholders to enter permanent covenants nature conservation on their land?

Section E : This section is for information about you and your comments

23. In what year were you born?

24. Are there any comments you are encouraged to make about any other issues relating nature conservation on private lands, permanent covenants, incentives and/or equity?

Thank you very much for your valuable time.

Appendix 2. 5 Final Questionnaire- Landholders without any covenant or agreement

Questionnaire Survey on Permanent Nature Conservation Covenants on Private Land in Western Australia and Victoria

2000

For Landholders WITHOUT any form of agreement or covenant

This survey is to find out your past and present views on nature conservation, and permanent covenants as mechanisms for nature conservation on your land. It also seeks your views about incentives and equity as issues for encouraging the placing of permanent nature conservation covenants on your land.

Declaration of Confidentiality

The information that you provide in this questionnaire will be used for the sole purpose of the stated objectives of the study and WILL NOT be given to any other party. You will not be identified in the study.

By completing the questionnaire you will be giving consent to the researcher to use the information you provide for the sole purpose of the study.

Definitions of key terms used in this questionnaire

The term '**permanent covenant**' is used to mean a voluntary management agreement in perpetuity that is attached to the land title, binding current and future owners of the land.

Fixed-term conservation covenant for nature conservation refers to binding **conservation agreements** entered into voluntarily by a landholder and another party for a specified period of time. A fixed-term covenant is attached to the land title.

Fixed-term conservation agreement refers to a non-binding agreement between a landholder and another party for a specified period of time. It is based on mutual trust to carry out the terms of the agreement.

The term '**nature conservation**' areas refers to areas set aside in their natural condition on your land to conserve some natural features such as wetlands, bushland, native vegetation, native grassland. They may also be areas that are a habitat for rare, endangered or vulnerable plant or animal species, areas that are used as transit route by some native animals, or areas that serve an important environmental protective role or areas that serve an important water balance functions to the region, or areas that have other functions you might consider relevant for heritage purposes.

Shire:..... Date of Survey:----/------/-2000 Pol__

To fill in the survey:
Some questions require written responses, some the circling of a number or placing of a *tick* in a box next to the number that corresponds to the statement or listed comment with which you agree. For most questions the required response will be stated.
Please answer all the questions.

Section A: This section is about your property and its management.

1. What type of farm do you manage? (*Please circle the appropriate answer*

1. Cropping [ ]
2. Cropping/Sheep [ ]
3. Cropping/Sheep/Cattle [ ]
4. Sheep/Cattle [ ]
5. Hobby farming [ ]
6. Conservation purpose [ ]
7. Others – Please specify .....[ ]

2. How long has this property been in your family?

(1) Under 2 years [ ]
(2) 2 - 5 years [ ]
(3) 6 - 10 years [ ]
(4) 11 - 20 years [ ]
(5) 21 - 30 years [ ]
(6) 31 - 40 years [ ]
(7) More than 40 years [ ]

3a. What is the total area of your property in hectares or acres? ____Acres / ____Hectares

3b. What proportion of your property is;
- Owned (Freehold)? ____%
- Rented or leased (From Government, company or individual)?____%

3c. What approximate size of your property (NOT leased land) is - Worked? ____Ha
- Fallow? ____Ha

4a. What conservation features are on you property?(*Please tick OR circle the appropriate response)*

(1) Stream/river [ ]
(2) Wetlands [ ]
(3) Native bush land [ ]
(4) Native grasslands [ ]
(5) Others (Please specify) .....

4b. What size of your property (NOT leased land) do these conservation features occupy?

5. Which of the following statements below (labelled *a-m*) best describe your primary reason and secondary reasons for having retained these conservation areas of your property to date? (*Please indicate **one** primary reason by writing (1) in the box next to the statement, and write (2) in other boxes to indicate **your** secondary reasons.* For seasonal grazing.

a) For recreational use.
b) For future agricultural use.
c) To support wildlife conservation.
d) To preserve native vegetation.
e) To act as a wind breaks or buffer.
f) To act as a wildlife corridor.
g) For scenic reasons
h) For soil salinity control
i) Cost of clearing for cropping or pasture was not economical
j) As shade and shelter for stock
k) Provision of fresh water.
l) Others (please specify).-------
---

6. Are you a member or do you support any of the following nature conservation groups/organisations? *(Please tick or circle all the relevant ones).*

(1) Land Conservation Group. [ ]
(2) Greening Australia. [ ]
(3) Land for Wildlife. [ ]
(4) Nature conservation group (eg. *Wildflower Society, Birds Australia, Naturalist Club, Australian Conservation Foundation, Conservation Council*). [ ]
(5) Others – *Please specify*_____
(6) I am not a member and I do not support any conservation group/organisation. [ ]

7a Have you carried out any activity to maintain or enhance the conservation areas of your property in the last two years? *(Please Tick or Circle the appropriate response below).*

(2) *Yes* [ ] *(Please state the main activities carried out)* .

(i) .....

(ii) .....

(2) None [ ] ⟶ **Go to Question 8A**

7b. IF YES, approximately how much money and time did you spend on the nature conservation areas in the last two years?

(i)_____dollars (ii)time_____

8a. Do you currently have a management agreement or covenant with another party aimed at nature conservation on your property?

(1) Yes. [ ] (2) No. [ ]

8b. IF YES, please provide the following information below:

Name of Agreement (For *example: Land for Wildlife, Remnant Vegetation Protection Scheme*)	Period of the Agreement (Years)	Size of land covered by Agreement (Ha)

Section B: **This section seeks your opinion on the use of voluntary permanent covenants for nature conservation on private lands**

WHAT IS A PERMANENT COVENANT?

The following is a broad definition of a covenant for nature conservation.

> A permanent covenant for nature conservation is a management agreement entered voluntarily by a landholder and another party (i.e private organisation or government department). It is permanently attached to the land title and is therefore binding on current and future owners of that land. By entering a covenant the landholder undertakes to conserve and protect nature (eg. native vegetation or wetlands) in a specified area of land, in accordance with an agreed management plan. The party with whom the covenant is entered often provide some support for carrying out and maintaining the conservation work.

9a. Please *tick* or *cross* 'True' or 'False' or 'Not Sure' for each of the following statement.

	Statements			
A	I have NEVER heard about a permanent covenant for nature conservation before now.	True	False	
B	I have heard about fixed-term covenants (also called fixed-term management agreements).	True	False	
C	I have inquired about permanent covenants for nature conservation in the past.	True	False	
D	I am familiar with the available permanent covenant programs for nature conservation in the State.	True	False	Not Sure
E	I know the procedures for entering a permanent nature conservation covenant on my land.	True	False	Not Sure
F	I would like to know more about permanent nature conservation covenants.	True	False	Not Sure
G	I plan to retain ownership of my property within the family in the future.	True	False	Not Sure
H	I plan to retain the management of my property within the family in the future.	True	False	Not Sure

9b. If you have inquired about permanent covenants for nature conservation, to who was the inquiry directed?----------

9c. If you have stated that you are familiar with permanent covenant programs in your State, please list the permanent covenant programs with which are you familiar.

---

14. How strongly do you agree or disagree with the following statements (a-i) in the table below on permanent covenants? Choose your response from the list of views provided in numbers 1-6.

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree
6. Don't know

For each statement please tick or circle the number that corresponds to your opinion.

A.	There are more effective mechanisms other than voluntary permanent covenants for promoting the long-term nature conservation on private lands.	1	2	3	4	5	6
B.	I do not mind entering a conservation arrangement that would entail permanent restrictions on some uses of the conservation land.	1	2	3	4	5	6
C.	Placing a permanent covenant on my land would most likely cause it to lose in market value.	1	2	3	4	5	6
D.	The nature conservation features on my land will be conserved by the management that will take over from me even WITHOUT placing a voluntary permanent covenant on it.	1	2	3	4	5	6
E.	I would prefer to divide and sell off the areas of my land with conservation values to a conservation-minded individual or organisation than to personally manage it under a permanent covenant.	1	2	3	4	5	6
F.	I would only place a permanent covenant on my land with an organisation that is independent of the Government.	1	2	3	4	5	6
G.	I would seriously consider a voluntary permanent covenant just prior to selling my land to protect existing nature conservation values.	1	2	3	4	5	6
H.	I would be inclined to enter a permanent nature conservation covenant on my land if neighbouring landholders or friends with similar natural areas had permanent covenant on theirs.	1	2	3	4	5	6
I.	Permanent covenants are an effective mechanism as salinity control measures where it occurs on private lands.	1	2	3	4	5	6

Section C: This section is about social and economic issues relating to the management of your property.

11. How many people (including family) work on your property on/as;

(a). Salaried full time basis? ---------- (b) Contract workers? ----------

(c). Salaried part time basis? ---------- (d) Non-paid workers? ----------

12. Which of the following categories best describes your approximate gross income, before taxes, derived from your property (including leased areas) in 1999? *Tick* **ONE** only.

(1) Zero	[ ]	(5) $100,001 to $200,000.	[ ]
(2) $25,000 or less.	[ ]	(6) $200,001 to $300,000.	[ ]
(3) $25,001 to $50,000.	[ ]	(7) $300,001 and more.	[ ]
(4) $50,001 to $100,000.	[ ]	(8) Withhold/Don't know	[ ]

13. Which of the following categories best describes your approximate gross income before taxes, derived from sources **OUTSIDE** your property in 1999? (*Tick **ONE** only*).

(1) $10,000 or less	[ ]	(4) $50,001 to $70,000	[ ]
(2) $10,001 to $20,000	[ ]	(5) $70,001 and more	[ ]
(3) $20,001 to $50,000	[ ]	(6) Withhold/Don't know	[ ]

14. Which of the following best describes the approximate total expenditure on your property (including leased area) in 1999? (*Tick **ONE** only*).

1. Zero	[ ]	5. $50,001 to $100,000	[ ]
2. $10,000 or less	[ ]	6. $100,001 and more	[ ]
3. $10,001 to $30,000	[ ]	7. Withhold/Don't know	[ ]
4. $30,001 to $50,000	[ ]		

15a. Do you have a current debt on your property?

(1)Yes [ ] (2) No [ ] ⟶(Go to Question 16)

15b If YES, In which of the following categories does the debt amount fall?

(1) $10,000 or less	[ ]	(6) $300,001 to $400,000	[ ]
(2) $10,001 to $50,000	[ ]	(7) $400,001 to $500,000	[ ]
(3) $50,001 to $100,000	[ ]	(8) $500,000 and more	[ ]
(4) $100,001 to $200,000	[ ]	(9) Withhold/Don't know	[ ]
(5) $200,001 to $300,000	[ ]		

15c Consider the total income before tax in the last financial year. What proportion of it did you spend to pay your debt in that period? *(Tick ONE only).*

(1) None [ ]
(2) between 1% and 25% [ ]
(3) between 26% and 50% [ ]
(4) Between 51% and 75% [ ]
(5) between 76% to 100% [ ]

Section D : This section is about your views on the necessary assistance to enter Permanent Covenants

16. Have you ever received financial support/benefits to undertake nature conservation work on your land from any organisation or department?

(1) Yes, once [ ] (2) Yes, more than once [ ] (3) No [ ]

17. How strongly do you agree with the following statements (a-f) in the table below about the need to seek assistance and benefits of entering a permanent covenant? *Choose your response from the list of views provided in numbers 1-6 and tick or circle the number in the box, which corresponds, to your opinion*

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree
6. Undecided/Don't know

The statements are :

A.	Permanent covenants should come with a mechanism of compensation for loss of future productive use of my piece of land.	1	2	3	4	5	6
B.	Non-financial recognition by State and Local government of my efforts to conserve nature would be a significant step in motivating me to enter a covenant on my land.	1	2	3	4	5	6
C.	Presently, I prefer to maintain the nature conservation areas on my land WITHOUT the use of a permanent covenant.	1	2	3	4	5	6
D.	The benefits of a permanent covenant on my land are NOT apparent to me.	1	2	3	4	5	6
E.	The cost of entering a permanent covenant on my land should be covered by the agency/organisation issuing the covenant	1	2	3	4	5	6
F.	I would NOT consider entering a permanent covenant under any circumstance.	1	2	3	4	5	6

18. What importance would you give to each of the issues (a-d) below, in deciding whether to enter a voluntary permanent covenant on your land? *(Use the following scales 1-6 below to make your rating*

1. Definitely important
2. Probably important
3. Neutral
4. Probably NOT important
5. Definitely NOT important
6. No opinion/Don't know

Tick or circle one rating scale 1-6 for each of the statements (a-d).

A.	Whether I will receive frequent long-term management advice on conservation.	1	2	3	4	5	6
B.	Whether a permanent covenant will bring public recognition and appreciation of the conservation values on my land.	1	2	3	4	5	6
C.	Whether a permanent covenant will assure the long- term nature conservation	1	2	3	4	5	6
D.	Whether by entering a permanent covenant I can receive some on-going financial support to carry out the necessary conservation work.	1	2	3	4	5	6

19a. Conservation of nature on your property has benefits to you and to the public. Do you consider the public to have any responsibility for the cost incurred in conservation on your property?

(1) Yes. [ ] (2) No. [ ] (3) Not Sure. [ ]

19b. If YES, what percentage of the cost of nature conservation on your land do you consider should be covered by the public? *(Please tick or circle the appropriate response)*

Nil %	1-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-80%	81-100%
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]

20. In your opinion, what actions or policies can the State government put in place to make it more favourable for landholders to enter permanent covenants for nature conservation on their land?

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21. In your opinion, what actions or policies should the Local government, in whose jurisdiction your property lies, put in place to make it more favourable for landholders to enter permanent covenants for nature conservation on their land?

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Section E : This section is for information about you and your comments

22. In what year were you born? _____

23. Are there any comments you would like to make about any other issues relating to nature conservation on private lands and/or permanent covenants?

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Thank you very much for your valuable time.

Please check to verify you have answered all questions.

Appendix 2. 6 Final Questionnaire- Landholders with a fixed-term covenant or agreement

Questionnaire Survey on Permanent Nature Conservation Covenants on Private land in Western Australia and Victoria

2000

For Landholders with a fixed-term agreement or covenant

This survey is to find out your past and present views on nature conservation, and permanent covenants as mechanisms for nature conservation on your land. It also seeks your views about incentives and equity as issues for encouraging the placing of permanent nature conservation covenants on your land.

Declaration of Confidentiality

The information that you provide in this questionnaire will be used for the sole purpose of the stated objectives of the study and WILL NOT be given to any other party. You will not be identified in the study.

By completing the questionnaire you will be giving consent to the researcher to use the information you provide for the sole purpose of the study.

Definitions of key terms used in this questionnaire

The term **'permanent covenant'** is used to mean a voluntary management agreement in perpetuity that is attached to the land title, binding current and future owners of the land.

Fixed-term conservation covenant for nature conservation refers to binding conservation agreements entered into voluntarily by a landholder and another party for a specified time. A fixed-term covenant is attached to the land title.

Fixed-term conservation agreement refers to a non-binding agreement between a landholder and another party for a specified period of time. It is based on mutual trust to carry out the terms of the agreement.

The term **'nature conservation'** areas refers to areas set aside in their natural condition on your land to conserve some natural features such as wetlands, bushland, native vegetation, native grassland. They may also be areas that are a habitat for rare, endangered or vulnerable plant or animal species, areas that are used as transit route by some native animals, or areas that serve an important environmental protective role or areas that serve an important water balance functions to the region, or areas that have other functions you might consider relevant for heritage purposes.

Shire:..... Date of Survey:----/-----/-2000 Fol_

To fill in the survey:
Some questions require written responses, some the circling of a number or placing of a *tick* in a box next to the number that corresponds to the statement or listed comment with which you agree. For most questions the required response will be stated.

Please answer **all** the questions.

Section A: This section is about your property and its management.

1 What type of farm do you manage? (*Please circle the appropriate answer*)
1. Cropping [ ]
2. Cropping/Sheep [ ]
3. Cropping/Sheep/Cattle [ ]
4. Sheep/Cattle [ ]
5. Hobby farming [ ]
6. Conservation purpose [ ]
7. Others – Please specify
.....[ ]

2. How long has this property been in your family?
(1) Under 2 years [ ]
(2) 2 - 5 years [ ]
(3) 6 - 10 years [ ]
(4) 11 - 20 years [ ]
(5) 21 - 30 years [ ]
(6) 31 - 40 years [ ]
(7) More than 40 years [ ]

3a. What is the total area of your property in hectares or acres? ____Acres / ____Hectares

3b. What proportion of your property is;
- Owned (Freehold)? ____%
- Rented or leased (From Government, company or individual)? ____%

3c. What approximate size of your property (NOT leased land) is - Worked? / ____ Ha
- Fallow? ____ Ha

4a. What conservation features are on you property? (*Please tick OR circle the appropriate response*)
1. Stream/river [ ]
2. Wetlands [ ]
3. Native bush land [ ]
4. Native grasslands [ ]
5. Others (Please specify) .....

4b. What size of your property (NOT leased land) do these conservation features occupy?

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4c. Please provide information on the fixed-term voluntary conservation agreement which is currently on your land by filling in the tables below.

a	What is the name of the Agreement?					
b	With which department/agency is the agreement entered?					
c	What is the duration of the agreement? (in years)					
d	Types of conservation features covered by the agreement (Tick)	Stream/ river	Wetlands	Native bush land	Native grasslands	others
e	Total area in hectares of the conservation feature covered					
f	Is agreement legally binding?(Tick)	Yes	No			

5. Which of the following statements below (labelled *a-m*) best describe your primary and secondary reasons for having retained the conservation areas on your property **BEFORE** you entered a fixed-term conservation agreement or covenant? *(Please indicate* **one** *primary reason by writing (1) in the box next to the statement, and write (2) in other boxes to indicate* **your** *secondary reasons).*

(a) For seasonal grazing. [ ]
(b) For recreational use. [ ]
(c) For future agricultural use. [ ]
(d) To support wildlife conservation. [ ]
(e) To preserve native vegetation. [ ]
(f) To act as wind break or buffer. [ ]
(g) To act as a wildlife corridor [ ]
(h) For scenic reasons [ ]
(i) For soil salinity control [ ]
(j) Cost of clearing for cropping or pasture was not economical [ ]
(k) For shade and shelter for stock [ ]
(l) Provision of fresh water. [ ]
(m) Others (please specify).----------
---------- [ ]

6. Are you a member or do you support any of the following nature conservation groups/organisations?

(1) Land Conservation Group. [ ]
(2) Greening Australia. [ ]
(3) Land for Wildlife. [ ]
(4) Nature conservation group (eg. *Wildflower Society, Birds Australia, Naturalist Club, Australian Conservation Foundation, Conservation Council*). [ ]
(5) Others – *Please Specify*_____

7a In the period before you entered a fixed-term agreement or covenant on your land, did you carry out any activity to maintain or enhance the conservation areas of your property? (*Please tick the appropriate response below*).

(3) ***Yes*** [ ] *(Please list the main activities carried out)*

(i) .....

(ii) .....

(2) **No** [ ] —► **Go to Question 8**

7b IF YES, approximately how much money and time did you spend on the nature conservation areas in the last two years before you placed a fixed-term covenant on your land?

_____dollars. _____Time (In hours or days)

8 Before you placed the fixed-term conservation agreement or covenant on your land, did you anticipate retaining ownership of your property within the family in the future?

(1) Yes [ ] (2) No [ ] (3) Not certain [ ]

9 Before you placed the fixed-term conservation agreement or covenant on your land, did you anticipate retaining the management of your property within the family in the future?

(1) Yes [ ] (2) No [ ] (3) Not certain [ ]

Section B : This section seeks your opinion on the use of permanent covenants for nature conservation on private lands.

10 Please circle *'Yes' or 'No' or 'Not Sure'* for each of the following statement.

At the time I entered a fixed-term agreement or covenant I knew about permanent covenant (i.e. covenants in perpetuity).	*Yes*	*No*	
I only placed a fixed-term conservation agreement or covenant on my land because it was a requirement for receiving support from an agency or a permit to clear other parts of my land.	*Yes*	*No*	
I have inquired about permanent covenants for nature conservation since entering the fixed-term covenant.	*Yes*	*No*	
I am familiar with the basic rights and obligations in managing land under a permanent covenant.	*Yes*	*No*	*Not sure*
I know the processes to follow for entering a permanent covenant for nature conservation on my land.	*Yes*	*No*	*Not sure*
I would like to know more about permanent covenants for nature conservation.	*Yes*	*No*	
I plan to retain ownership of my property within the family in the future.	*Yes*	*No*	*Not sure*
I plan to retain the management of my property within the family in the future.	*Yes*	*No*	*Not sure*

11 What importance would you give to each of the following issues today in making a decision on whether to enter a **permanent covenant** for nature conservation on your land? (*Use the following scales 1-6 below to make your rating*).

1. Definitely NOT important
2. Probably NOT important
3. Neutral
4. Probably important
5. Definitely important
6. No opinion/Don't know

Tick or circle one rating on the scale of 1-6 for each of the issue statements below.

A	Whether I would receive more frequent management advice on conservation than at present.	1	2	3	4	5	6
B	Whether there would be increased public recognition and appreciation of conservation values on my land.	1	2	3	4	5	6
C	Whether a permanent covenant would give greater assurance for long-term nature conservation than under the fixed-term covenant.	1	2	3	4	5	6
D	Whether by entering a permanent covenant I would receive additional on-going financial support to carry out the necessary conservation work.	1	2	3	4	5	6

12 How strongly do you agree or disagree with the following statements (a-g) in the table below as reflecting of your opinion on fixed-term and permanent covenants? *(Choose your response from the scale provided in numbers 1-6.)*

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly agree
6. Don't Know

For each statement please tick or circle the number that corresponds to your opinion

A	I do not mind entering a conservation arrangement that places permanent restrictions on some uses of the conservation land.	1	2	3	4	5	6
B	There were other more effective mechanisms than permanent covenants for promoting the long-term nature conservation on private lands.	1	2	3	4	5	6
C	Placing a permanent covenant on my land would cause it to lose in market value.	1	2	3	4	5	6
D	I would enter a permanent nature conservation covenant on my land if neighbouring landholders or friends with similar natural areas had permanent covenant on theirs.	1	2	3	4	5	6
E	I would place a permanent covenant on my land if there were some compensation for the limitations of use of the land areas covered under a covenant.	1	2	3	4	5	6
F	I would place more areas of my land under a fixed-term covenant if there were some compensation for the limitations of use of the areas covered under a covenant.	1	2	3	4	5	6
G	I would not have placed a fixed-term covenant on my land if the restrictions on clearing of native bushland did not exist.	1	2	3	4	5	6

13 How strongly do you agree or disagree with the following statements (a-e) in the table below as reflecting present views on permanent covenants and nature conservation on private land? *(Choose your response from the scales provided in numbers 1-6).*

1. Strongly disagree.
2. Disagree.
3. Neither agree nor disagree.
4. Agree.
5. Strongly agree.
6. Don't know.

For each statement please tick or circle the number that corresponds to your view.

A	I would prefer to divide and sell off the areas of my land with conservation or natural heritage values to a conservation-minded individual or organisation than to personally manage it under a permanent covenant.	1	2	3	4	5	6
B	I would seriously consider a permanent covenant just prior to selling my land.	1	2	3	4	5	6
C	The benefits of a permanent covenant over my existing fixed-term conservation agreement or covenant on my land are NOT apparent.	1	2	3	4	5	6
D	It is NECESSARY for the organisation that manages the covenant to be independent of Government.	1	2	3	4	5	6
E	I would consider entering permanent covenant on my land when the current term of my fixed-term agreement or covenant expires.	1	2	3	4	5	6

Section C: This section is about social and economic issues relating to your property and its management

14 How many people (including family) work on your property on/as;

(a). Salaried full time basis? ---------- (b) Contract workers? ---------

(c). Salaried part time basis? ---------- (d) Non-paid workers? ---------

15 Which of the following categories best describes your approximate gross income before taxes, derived from your property (including leased areas) in 1999? *(Tick ONE only).*

(1) Zero [ ]
(2) $25,000 or less [ ]
(3) $25,001 to $50,000 [ ]
(4) $50,001 to $100,000 [ ]
(5) $100,001 to $200,000 [ ]
(6) $200,001 to $300,000 [ ]
(7) $300,001 and more [ ]
(8) Withhold/Don't know [ ]

16 Which of the following categories best describes your approximate gross income before taxes, derived from sources **OUTSIDE** your property in 1999? *(Tick ONE only).*

(1) $10,000 or less [ ]
(2) $10,001 to $20,000 [ ]
(3) $20,001 to $50,000 [ ]
(4) $50,001 to $70,000 [ ]
(5) $70,001 and more [ ]
(6) Withhold/Don't know [ ]

17 Which of the following best describes the approximate total expenditure on your property (including leased area) in 1999? *(Tick ONE only)*

1. Zero	[ ]	5. $50,001 to $100,000	[ ]
2. $10,000 or less	[ ]	6. $100,001 and more	[ ]
3. $10,001 to $30,000	[ ]	7. Withhold/Don't know	[ ]
4. $30,001 to $50,000	[ ]		

18a Do you have a current debt on your property?

(1)Yes [ ] (2) No [ ] ⟶(Go to Question 19)

18b **If YES**, in which of the following categories does the debt amount fall

(1)	10,000 or less	(5)	$200,001 to $300,000
(2)	$10,001 to $50,000	(6)	$300,001 to $400,000
(3)	$50,001 to $100,000	(7)	$400,001 to $500,000
(4)	$100,001 to $200,000	(8)	$500,000 and more
		(9)	Withhold/Don't know

18c Consider the total income before tax in the last financial year. What proportion of it did you spend to pay your debt in that period? *(Please tick or circle ONE only).*

(1) None [ ]
(2) between 1% and 25% [ ]
(3) between 26% and 50% [ ]
(4) between 51% and 75% [ ]
(5) between 76% to 100% [ ]

Section D : This section is about your views on the necessary assistance to enter Permanent Covenants

19 Did you ever receive any financial support/benefit to undertake nature conservation work on your land from any organisation or department before you placed a fixed-term conservation agreement or covenant on your land?

(1) Yes, once [ ] (2) Yes more than once [ ] (3) No [ ]

20 How strongly do you agree or disagree with the following statements (a-c) in the table below as reflecting your opinion about the need to seek assistance when entering a permanent covenant. *(Choose your response from the list of views provided in numbers 1-6.and tick or circle the number in the box that corresponds to your opinion).*

1. Strongly disagree
2. Disagree
3. Neither agree nor disagree
4. Agree
5. Strongly Agree
6. Undecided/Don't know

The statements are: In considering placing a permanent covenant on my land;

A	Non-financial recognition by state and local government of my efforts to conserve nature would be a significant step in motivating me to enter a covenant on my land.	1	2	3	4	5	6
B	I believe the cost of entering a permanent covenant on my land should be covered by the agency/organisation issuing the covenant.	1	2	3	4	5	6
C	I would NOT consider a permanent covenant under any circumstance.	1	2	3	4	5	6

21a Conservation of nature on your property has benefits to you and to the public. Do you consider the public to have any responsibility for the cost incurred in conservation on your property?

(1) Yes [ ] (2) No [ ] (3) Not Sure [ ]

21b If YES, what percentage of the cost of retaining and upkeep nature conservation on your land do you consider should be covered by the public? *(Please tick or circle the appropriate response).*

Nil %	1-10%	11-20%	21-30%	31-40%	41-50%	51-60%	61-80%	81-100%
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]

22 In your opinion, what actions or policies can the **State government** put in place to make it more favourable for landholders to place a permanent covenant for nature conservation on their land?

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23 In your opinion, what actions or policies should the Local government in whose jurisdiction your property lies put in place to make it more favourable for landholders to place a permanent covenant for nature conservation on their land?

.....

.....

Section E: This section is on information about you, and your comments

24 In what year were you born?

25 Are there any comments you would like to make about any other issues relating nature conservation on private lands and/or permanent covenants?

Thank you very much for your valuable time.

Please check to verify you have answered all questions

Appendix 3. 1 Primary reasons for having retained conservation features on the property in the period prior to taking up a permanent covenant

Primary reasons	Frequency	Percent of Cases
Seasonal Grazing	2	0.8
For Recreational use	7	3.4
Future agricultural use		0
To support wildlife conservation	64	31.4
To support native vegetation	125	61.3
To act as wind breaks or buffer	5	2.5
To act as a wildlife corridor	17	8.3
For scenic reasons	8	3.9
For soil salinity control	1	0.5
Cost of clearing for cropping or pasture was not economical	4	2.0
As shade and shelter for stock	1	0.5
Provision of fresh water	1	0.5
Land not suitable for farming		0
Retained by previous owners	1	0.5
Protection of waterway		0
Soil erosion control	3	1.5
Others	1	0.5

Appendix 3. 2 Approximate gross income derived from the property in the year a permanent covenant was placed on the land

Income classes (Australian dollars)	Frequency	Proportion of respondents (%)
None	95	52.5
25,000 or less	43	23.8
25,001-50,000	11	6.1
50,001- 100,000	8	4.4
100,001- 200,000	9	5.0
200,001-300,000	1	.6
>300,000	2	1.1
Withheld	12	6.6
Total	181	100.0

Appendix 3. 3 Percentage ratio of respondents' income from property to total income

Percentage income from property.	Frequency	Proportion of Respondents (%)
0	95	51.1
1-20.0	9	4.8
20.1- 30.0	16	8.6
30.1- 50.0	25	13.4
50.1- 70.0	4	2.2
>70.0	37	19.9
Total	186	100.0

Appendix 3. 4 Landholders' level of expectation of various services and actions as pre-requisite for entering a permanent covenant for nature conservation

Services and Actions		Importance rating					
		Definitely Not Important	Probably Not Important	Neither Important nor Unimportant	Probably Important	Definitely Important	Did not consider it
More frequent management advice.	%	9.8	12.0	17.5	27.9	16.4	16.4
Increased public recognition and appreciation of conservation values on their land.	%	13.7	12.0	14.8	20.2	19.1	20.2
Greater assurance for long-term nature conservation than under other conservation agreements.	%	3.3	1.1	1.6	6.6	73.6	13.7
Additional on-going financial support to carry out the necessary conservation work.	%	17.8	10.8	20.5	9.7	9.2	31.9
Independence of covenanting institution from Government affiliation	%	7.7	6.6	19.8	17.6	30.2	18.1

Appendix 3. 5 Proportion of cost expected from the public for nature conservation on private lands by respondents with a permanent covenant in Victoria

Proportion expected cost	Frequency	(%)
None	76	40.9
1-10 %	13	7.0
11-20 %	7	3.8
21-30 %	6	3.2
31-40 %	3	1.6
41-50 %	16	8.6
51-60 %	3	1.6
61-80 %	8	4.3
81-100 %	19	10.2
No response	35	18.8
Total	186	100.0

Appendix 4. 1 Exogenous variables assessed in the descriptive analysis of fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Variable	Attribute measured
Age.	Age of respondent in years
Size of property	Area in hectares
Property tenure type	Proportion of property under freehold and/or leasehold tenure
Level of income	Total income in Australia dollars (A$)
Attachment to the property	Length of property tenure in the family
Affiliation and association with conservation groups	Number of conservation groups/ organisations respondent is member or supports
Impact of debt on permanent covenant uptake	Level of debt on property
Economic dependence on property	Percentage ratio of income from property to total income
Level of labour commitment	Amount of labour employed on property
Relative size of nature conservation area to total property	Percentage ratio of conservation area to total property size
Influence of financial support for nature conservation on permanent covenant uptake	Frequency of financial support before fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) uptake

Appendix 4. 2 Endogenous variables assessed in the descriptive analysis of fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Motive for taking up a fixed-term agreement or fixed-term covenant	Influence of availed support on fixed-term agreement or fixed-term covenant uptake
Awareness about permanent covenants	Inquiry about permanent covenant
Interest in nature conservation	Primary reasons for retaining nature conservation features on the property
Knowledge of permanent covenants	Previous knowledge of permanent covenant before uptake of a fixed-term agreement (Victoria) and fixed-term covenant (Western Australia)
Inquiry about permanent covenant	Whether they had made an inquiry about permanent covenant
Long term goal for retention of ownership	Anticipation of retention of ownership of property in family
Long term goal for retention of management	Anticipation of retention of management of property in family
Attitudes to covenants in terms of their perceived benefits	Strength of perception of permanent covenant benefits
Attitudes to non financial recognition	Strength of acceptance of non-financial incentives for permanent covenant uptake
Impact of restrictions of land-use on permanent covenant uptake	Attitudes to permanent covenant restrictions on land-use
Influence of association with neighbours or friends on permanent covenant uptake	Level of influence of neighbours or friends on covenant uptake
Interest in long-term nature conservation.	Attitudes to covenants in terms of their ability to assure long-term nature conservation than other mechanisms
Impact of permanent covenants on land value	Perception of permanent covenants in terms of their impact on land value
Influence of non-financial incentives on permanent covenant uptake	Attitude to non-financial incentives as motivators of a permanent covenant uptake
Attitude to public recognition as incentive for permanent covenant uptake	Importance given to public recognition as incentive for permanent covenant uptake
Perception of effectiveness of permanent covenant for long-term nature conservation over other mechanisms	Degree of agreement about permanent covenant's effectiveness for long-term nature conservation over other conservation mechanisms
Necessity of financial support as incentive for permanent covenant uptake	Level of importance given to financial support as incentive for permanent covenant uptake
Necessity of compensation as incentive for permanent covenant uptake	Attitude to compensation in covenant up
Equity requirement in cost of permanent covenant uptake	Expectation by respondents regarding coverage of cost by covenantors in permanent covenant uptake
Equity requirement in cost of private conservation.	Expected level of public contribution to cost of nature conservation on private lands
Attitudes to the uptake of a permanent covenant	Degree of agreement with the uptake of a permanent covenant

Appendix 4. 3 Length of time of property ownership in family among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Victoria		Western Australia	
Period in years	Counts	(%)	Counts	(%)
<2	2	1.8	7	3.6
2 to 5	3	2.7	30	15.4
6 to 10	6	5.4	36	18.5
11 to 20	12	10.7	68	34.9
21 to 30	12	10.7	26	13.3
31 to 40	20	17.9	6	3.1
>40	57	50.9	22	11.3
Total	112	100.0	195	100.0

Appendix 4. 4 Types and proportions of conservation features on properties of fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Victoria		Western Australia	
Conservation features	Count	% Responses	Count	% Responses
Stream/River/ Creeks	83	43	56	37.6
Wetlands	62	32.1	34	22.8
Native Bush/Forest	164	85	141	94.6
Native Grass	70	36.3	12	8.1
Planted trees/plants	14	7.3		
Salt bushes/Salt lakes				
Others	17	8.8	9	6.1
None	0	0	0	0

Appendix 4.5 Knowledge about permanent covenant at the time of entering a fixed-term agreement among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: At the time I entered a fixed-term agreement or covenant I knew about permanent covenant (i.e., covenants in perpetuity)

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
Yes	89	49.4	71	49.0
No	91	50.6	74	51.0
Total	180	100.0	145	100.0

Appendix 4.6 Response on desire to know more about permanent covenants among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: I would like to know more about permanent covenants

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
True	106	56.1	55	38.5
False	83	43.9	88	61.5
Total	189	100.0	143	100.0

Appendix 4.7 Primary reason for retaining nature conservation features on the properties among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Vic		Western Australia	
Primary reasons	Case Count	% Number of cases	Case Count	% Number of cases
Seasonal Grazing	1	0.5	5	4.3
For Recreational use	11	5.7	1	0.9
Future agricultural use	3	1.5		
To support wildlife conservation	136	70.1	6	5.1
To support native vegetation	53	27.3	70	59.8
To act as wind breaks or buffer	9	4.6	5	4.3
To act as a wildlife corridor	24	12.4	4	3.4
For scenic reasons	14	7.2		
For soil salinity control	9	3.1	17	14.5
Cost of clearing for cropping or pasture was not economical	1	0.5	5	4.3
As shade and shelter for stock	8	4.1	7	6.0
Provision of fresh water	3	1.5		
Land not suitable for farming				
Retained by previous owners.			4	3.4
Protection of waterway			3	2.6
Soil erosion control			1	0.9
Others	2	1.0	3	2.6

Note to Appendix 4.3: Percentage number of cases exceeds 100 percent because some respondents gave more than one primary reason for having retained nature conservation features on their land

Appendix 4. 8 Attitude to covenant restrictions on some uses of the conservation land among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: I do not mind entering a conservation arrangement that would entail permanent restrictions on some uses of the conservation land.

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	20	10.6	30	20.3
Disagree	29	15.3	18	12.2
Neutral	20	10.6	22	14.9
Agree	64	33.9	60	40.5
St. Agree	45	23.8	13	8.8
D/Know	11	5.8	5	3.4
Total	189	100.0	148	100.0

Appendix 4. 9 Perceptions of a permanent covenant's impact on land value among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: 'A permanent covenant is likely to lead to a loss in market value of my property'.

	Victoria		Western Australia	
Responses	Count	Proportion (%)	Count	Proportion (%)
St. Disagree	15	8.1	15	10.1
Disagree	33	17.7	34	23.0
Neutral	23	12.4	31	20.9
Agree	42	22.6	29	19.6
St. Agree	28	15.1	19	12.8
D/Know	45	24.2	20	13.5
Total	186	100.0	148	100.0

Appendix 4. 10 Response on the effectiveness of permanent covenant over other mechanisms among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: There are mechanisms that are more effective other than voluntary permanent covenants for promoting the long-term nature conservation on private lands.

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	10	5.4	6	4.1
Disagree	24	12.9	18	12.3
Neutral	32	17.2	41	28.1
Agree	41	22.0	29	19.9
St. Agree	18	9.7	25	17.1
Don't know	61	32.8	27	18.5
Total	186	100.0	146	100.0

Appendix 4. 11 Attitudes of fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents to the affiliation of a covenanting organisation to Government

Statement: It is necessary for the organization that manages the permanent covenant to be independent of Government

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	12	6.3	14	9.5
Disagree	15	7.9	23	15.6
Neutral	37	19.6	47	32.0
Agree	39	20.6	35	23.8
St. Agree	49	25.9	17	11.6
Don't know	37	19.6	11	7.5
Total	189	100.0	147	100.0

Appendix 4. 12 Perceptions of benefits of a permanent covenant among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: The benefits of a permanent covenant over my existing fixed-term conservation agreement are not apparent'

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	18	9.6	9	6.1
Disagree	28	14.9	33	22.4
Neutral	27	14.4	34	23.1
Agree	62	33.0	37	25.2
St. Agree	26	13.8	23	15.6
D/Know	27	14.4	11	7.5
Total	188	100.0	147	100.0

Appendix 4. 13 Total median income in 1999 for fixed-term agreement/covenant respondents in Victoria and Western Australia

Total median income (AU$)	Victoria		Western Australia	
	Count	Percentage	Count	Percentage
35000 or less	57	32.9	34	26.0
35001-75000	55	31.6	4	3.1
75001-150000	43	24.7	12	9.3
150001-255000	10	5.8	25	19.1
255001-400000	1	0.6	5	3.9
400001- 490000	8	4.6	51	38.9
Total	174	100.0	131	100.0

Labour commitment refers to a weighted financial commitment made to labour employment by a landholder. Labour commitment scores were calculated by initially assigning respective points i.e. five, three, two, and one points to four respective labour categories under review, notably; salaried full-time, contract, salaried part-time, and non-paid, on assumption of a decreasing order of financial remuneration made annually for the respective categories. A labour score was calculated by multiplying the points allocated to each category by the number of people in a particular category. Finally, a labour commitment score for each respondent was calculated by summing the scores of the different worker categories. The higher the score the greater the assumed labour commitment.

Appendix 4.14 Labour commitment on the property among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Victoria		Western Australia	
Labour commitment score classes	Count	Proportion (%)	Count	Proportion (%)
Zero	50	25.5	10	6.7
1 to 2	74	37.8	9	6.0
3 to 4	19	9.7	10	6.7
5 to 8	26	13.3	27	18.0
9 to 15	16	8.2	53	35.3
>15	11	5.6	41	27.3
Total	196	100.0	150	100.0
Mean score (points)		6.48		12.89
Std. Deviation		31.91		10.67
Maximum scores		440		52

Appendix 4.15 Reception of financial support for conservation work before a fixed-term agreement/covenant uptake among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: Have you ever received financial support/ benefits to undertake nature conservation work on your land from any organization or department?

	Victoria		Western Australia	
Frequency	Count	(%)	Count	(%)
None	157	80.5	105	70.5
Once	22	11.3	28	18.8
More than once	16	8.2	16	10.7
Total	195	100.0	149	100.0

Appendix 4.16 Level of debt on properties among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Victoria		Western Australia	
Debt amount (A$)	Count	(%)	Count	(%)
None	105	54.1	51	34.9
Less than100,000	52	26.8	13	8.9
100,000 to 300,000	23	11.9	22	15.1
300,001 to 500,000	7	3.6	48	32.9
More than 500, 000	7	3.6	12	8.2
Total	194	100.0	146	100.0

The ratio of income derived from the property to the annual gross income (i.e. the sum of income from inside and outside of the property) was used to indicate a respondent's economic dependence on the land. Landholders with a higher income ratio from the property to total income were assumed more economically dependent on the land than those with a lower income from property ratio.

Appendix 4.17 Percentage income ratio from property to median total annual income among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Victoria		Western Australia	
Percentage ratio of income from property	Count	(%)	Count	(%)
Nil %	100	60.2	11	8.4
12-30 %	30	18	3	2.3
31-50%	11	6.6	2	1.6
51-70%	4	2.4	2	1.6
71-90%	2	1.2	30	22.9
Over 90%	19	11.4	83	63.4
Total	166	100	131	100

Appendix 4.18 Anticipation of retention of ownership and management of the property in the family among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: I plan to retain the management of my property within the family in the future.					*Statement: I plan to retain ownership of my property within the family in the future.*			
	Victoria		Western Australia		Victoria		Western Australia	
Responses	Count	(%)	Count	(%)	Count	(%)	Count	(%)
True	129	67.9	118	80.3	128	67.4	114	78.1
False	12	6.3	7	4.8	13	6.8	9	6.2
Not sure	49	25.8	22	15.0	49	25.8	23	15.8
Total	190	100.0	147	100.0	190	100.0	146	100.0

Appendix 4.19 Influence of neighbours and friends on covenant uptake among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: I would be inclined to enter a permanent covenant on my land if neighbouring landholders or friends with similar natural areas had one on theirs.				
	Vic		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	24	12.8	24	16.6
Disagree	41	21.9	38	26.2
Neutral	58	31.0	45	31.0
Agree	34	18.2	24	16.6
St. Agree	14	7.5	10	6.9
Don't know	16	8.6	4	2.8
Total	187	100.0	145	100.0

Appendix 4.20 Number of memberships or support to conservation group/organisation among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

	Vic		Western Australia	
Number of conservation groups	Count	(%)	Count	(%)
None		0	21	14.0
One group	86	44.1	91	60.7
Two groups	74	37.9	22	14.7
Three groups	28	14.4	11	7.3
More than 3 groups	7	3.6	5	3.3
Total	195	100.0	150	100.0

Appendix 4.21 Importance given to provision of management advice as a pre-requisite for covenant uptake by fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Whether I will receive frequent long-term management advice on conservation.

	Vic		Western Australia	
Responses	Count	(%)	Count	(%)
Definitely important	52	27.2	18	12.1
Probably important	47	24.6	31	20.8
Neutral	33	17.3	45	30.2
Probably Not important	33	17.3	27	18.1
Definitely Not important	19	9.9	21	14.1
No opinion	7	3.7	7	4.7
Total	191	100.0	149	100.0

Appendix 4.22 Importance given to increase in public recognition and appreciation as a pre-requisite for covenant uptake by fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Issue: Whether there would be increased public recognition and appreciation of conservation values on my land.

	Vic		Western Australia	
Responses	Count	(%)	Count	(%)
Definitely important	54	28.4	32	21.5
Probably important	40	21.1	36	24.2
Neutral	38	20.0	33	22.1
Probably Not important	24	12.6	21	14.1
Definitely Not important	25	13.2	17	11.4
No opinion	9	4.7	10	6.7
Total	190	100.0	149	100.0

Appendix 4.23 Importance given to greater assurance for long-term nature conservation as a pre-requisite for a covenant uptake by fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Issue: Whether a permanent covenant would give greater assurance for long-term nature conservation.

	Vic		Western Australia	
Responses	**Count**	**(%)**	**Count**	**(%)**
Definitely important	90	47.1	23	15.4
Probably important	54	28.3	37	24.8
Neutral	19	9.9	39	26.2
Probably Not important	7	3.7	14	9.4
Definitely Not important	7	3.7	19	12.8
No opinion	14	7.3	17	11.4
Total	191	100.0	149	100.0

Appendix 4.24 Importance given to financial support as a pre-requisite for covenant uptake by fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Issue: Whether by entering a permanent covenant I would receive additional on-going financial support to carry out the necessary conservation work.

	Vic		Western Australia	
Responses	**Count**	**(%)**	**Count**	**(%)**
Definitely important	50	26.2	60	40.3
Probably important	53	27.7	33	22.1
Neutral	30	15.7	22	14.8
Probably Not important	19	9.9	5	3.4
Definitely Not important	27	14.1	15	10.1
No opinion	12	6.3	14	9.4
Total	191	100.0	149	100.0

Appendix 4.25 Agreeability on non-financial incentive by State and Local governments as incentive for permanent covenant uptake by fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: Non-financial recognition by state and Local Government of my efforts to conserve nature would be a significant step in motivating me to enter a covenant on my land

	Victoria		Western Australia	
Responses	**Count**	**(%)**	**Count**	**(%)**
St. Disagree	20	10.4	30	21.3
Disagree	38	19.8	36	25.5
Neutral	45	23.4	33	23.4
Agree	52	27.1	29	20.6
St. Agree	19	9.9	7	5.0
Don't know	18	9.4	6	4.3
Total	192	100.0	141	100.0

Appendix 4.26 Agreeability on compensation as incentive for covenant uptake among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: I would place a permanent covenant on my land if there were some compensation for the limitations of use of the land areas covered under a covenant

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
Strongly Disagree	21	11.1	14	9.6
Disagree	28	14.8	14	9.6
Neutral	41	25.9	29	19.9
Agree	48	25.4	43	29.5
Strongly Agree	20	10.6	35	24.0
Don't Know	23	12.2	11	7.5
Total	189	100	146	100.0

Appendix 4.27 Agreeability on the covenantor bearing the costs incurred in the uptake of a permanent covenant among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Statement: The cost of entering a permanent covenant on my land should be covered by the agency/ organisation issuing the covenant

	Vic		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	5	2.8	4	2.8
Disagree	12	6.7	7	4.8
Neutral	28	15.6	14	9.7
Agree	69	38.5	60	41.4
St. Agree	43	24.0	57	39.3
Undecided	22	12.3	3	2.1
Total	179	100	145	100.0

Appendix 4.28 Expected level of public contribution to cost of nature conservation on private lands among fixed-term agreement (Victoria) and fixed-term covenant (Western Australia) respondents

Question: What percentage of the cost of nature conservation on your land do you consider should be covered by the public?

	Victoria		Western Australia	
Expected public cost contribution (%)	Count	(%)	Count	(%)
Nil	79	47.3	29	22.7
1-10	11	6.6	7	5.5
11-20	12	7.2	8	6.3
21-20	11	6.6	9	7.0
31-40	4	2.4	1	.8
41-50	28	16.8	33	25.8
51-60	5	3.0	6	4.7
61-80	8	4.8	7	5.5
>80	9	5.4	28	21.9
Total	167	100.0	128	100.0

Appendix 4.29 Final path model coefficients tables for fixed-term agreement respondents (Victoria)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.730	.430		4.022	.000	.881	2.579
Con_interest	.187	.071	.176	2.648	.009	.048	.327
Knowledge	5.758E-02	.066	.056	.877	.382	-.072	.187
ConRatio	2.779E-03	.002	.083	1.299	.196	-.001	.007
Membership	.165	.086	.123	1.925	.056	-.004	.335
Restriction	.299	.055	.370	5.418	.000	.191	.407
Value-loss	-6.000E-02	.047	-.086	-1.273	.205	-.153	.033
Benefits	9.612E-02	.051	.128	1.884	.061	-.005	.197

a. dependent variable: attitudes to a permanent covenant uptake.

Appendix 4.30 Path analysis variable correlation for fixed-term agreement respondents (Vic)

		Attitudes to permanent covenant uptake	Con_interest	Knowledge	ConRatio	Membership	Restrictions	Value_loss	Benefits
Pearson Correlation	Attitudes to permanent covenant uptake	1.000	.363	.134	.119	.258	.508	.160	.298
	Con_interest	.363	1.000	.049	.149	.175	.351	.017	.145
	Knowledge	.134	.049	1.000	-.082	.141	.049	.168	.207
	ConRatio	.119	.149	-.082	1.000	.002	.087	-.216	.003
	Membership	.258	.175	.141	.002	1.000	.219	-.004	.117
	Restriction.	.508	.351	.049	.087	.219	1.000	.098	.240
	Value-loss	.160	.017	.168	-.216	-.004	.098	1.000	-.340
	Benefits	.298	.145	.207	.003	.117	.240	.340	1.000
Sig. (1-tailed)	Attitudes to permanent covenant uptake	.	.000	.036	.056	.000	.000	.016	.000
	Con_interest	.000	.	.258	.023	.010	.000	.412	.026
	Knowledge	.036	.258	.	.138	.030	.257	.012	.003
	ConRatio	.056	.023	.138	.	.489	.123	.002	.481
	Membership	.000	.010	.030	.489	.	.002	.481	.058
	Restriction.	.000	.000	.257	.123	.002	.	.095	.001
	Value-loss	.016	.412	.012	.002	.481	.095	.	.000
	Benefits	.000	.026	.003	.481	.058	.001	.000	.

Appendix 4.31 Final path model coefficients tables for fixed-term covenant (Western Australia) respondents

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	1.346	.544		2.477	.015	.271	2.422
Knowledge	7.946E-02	.055	.112	1.445	.151	-.029	.188
Con_interest	7.048E-02	.065	.088	1.077	.283	-.059	.200
Restrictions	.256	.078	.275	3.269	.001	.101	.410
Value_loss	-.152	.061	-.196	-2.470	.015	-.273	-.030
Benefits	.185	.074	.199	2.497	.014	.038	.332
ConRatio	2.342E-03	.008	.023	.289	.773	-.014	.018

a: dependent variable: attitudes to a permanent covenant uptake

Appendix 4.32 Path analysis variable correlation for fixed-term covenant (Western Australia) respondents

		Attitude to permanent covenant uptake	Knowledge	Benefits	Value_loss	Restrictions	ConRatio	Con_interest
Pearson Correlation	Attitude to permanent covenant uptake	1.000	.200	.337	-.307	.393	.060	.267
	Knowledge	.200	1.000	.247	-.115	.023	.071	.100
	Benefits	.337	.247	1.000	-.189	.195	.110	.193
	Value_loss	-.307	-.115	-.189	1.000	-.199	.177	-.113
	Restrictions	.393	.023	.195	-.199	1.000	.154	.389
	ConRatio	.060	.071	.110	.177	.154	1.000	.004
	Con_interest	.267	.100	.193	-.113	.389	.004	1.000
Sig. (1-tailed)	Attitude to permanent covenant uptake	.	.009	.000	.000	.000	.242	.001
	Knowledge	.009	.	.002	.091	.394	.204	.123
	Benefits	.000	.002	.	.014	.011	.101	.012
	Value_loss	.000	.091	.014	.	.010	.019	.094
	Restrictions	.000	.394	.011	.010	.	.037	.000
	ConRatio	.242	.204	.101	.019	.037	.	.481
	Con_interest	.001	.123	.012	.094	.000	.481	.

Appendix 4. 33 Views of Ecov-Vic landholders on the State Government policies or actions as incentives

Incentive group	Desired action (Number of respondents)	Purpose/desired outcome
Economic and Financial incentives (69)	Financial assistance and subsidies (52)	• support fencing • enrichment planting • cover full costs of property title changes • weed control • buying trees • exemptions for expenses incurred on conservation work • cover all or concession of conservation work and its maintenance
	Tax incentive (17)	• tax deductions on expenses for land maintenance • improving nature conservation areas • tax rebates for volunteers • carbon credit tax discounts • reduce stamp duty
Information and awareness (34)	Information and awareness on covenants (28)	• explain impact of covenants on land management goals • explain significance of conservation values of specific sites • create awareness of value of individual contribution to conservation • promote natural heritage • education programs for future generations especially schools • promote and educate landholders on benefits of covenants and biodiversity
	Enlist public participation (6)	• cost sharing as a means to achieving equity with those without conservation areas by funding those that have • public participation as a collective approach to the success of conservation on private lands
Technical, labour support and advice (29)	Advice (14)	• identification of species, flora and fauna management, and advice and management assistance on weed and pest control. • provide ongoing and free expert advice
	Support weed and vermin and fire control (8)	• make council and property owner liable for feral animals and noxious weeds on property, • keep with prescribed management plans and fire control regimes, • help meet the cost of fire prevention in areas under a covenant
	Assist with material (4)	• provide suitable plants and equipment to part-time small-scale landholders
	Labour support (3)	• removal of diseased/ drying trees to enable enrichment planting. source of labour cited was green corps volunteers

Appendix 4.33 continued

Incentive group	Desired action (Number of respondents)	Purpose/desired outcome
Policy and Legal arrangements (17)	Enact legislation and enforce regulations (17)	• restrict use of superphosphates, pesticides, and poison for noxious plants on adjoining conservation properties • change legislation to ensure conservation covenants override miners rights • enforce conservation requirements • change insurance laws on controlled burning to remove liability from landowners, • strengthen fencing regulation on creek frontage • enforce restriction on clearing on private and public land • enforce weed and vermin control on public and private land • apply better methods other than rules and regulations for motivating private land conservation • greater protection of waterways from erosion and pollution
Compensatory measures (15)	Financial compensation (15)	• cover for loss of potential earnings or cost of appropriate management of the conservation area, and loss in land resale value
Recognition (9)	Recognition and encouragement (9)	• public acknowledgement of landholders for taking up covenant
Leadership (8)	Lead by example (8)	• engage more active management particularly in deteriorating public lands
Organizational and administrative arrangements (8)	Reduce bureaucracy (5)	• simplify application procedures and application requirements in funding and grants
	Assurance about covenant (2)	• make covenants irrevocable in the future
	Mediation (1)	• convince others of the benefit of placing a permanent covenant on similar and adjacent lands • Mediate between landowners of adjacent properties on conservation issues

Appendix 4. 34 Views of Feov-Vic landholders on the Local Government policies or actions as incentives

Incentive group type (total number of respondents)	Desired action (Number of respondents)	Comment/desired outcome
Economic and Financial Incentives (69)	Rates rebate (61)	• in recognition of the conservation effort
	Financial assistance (8)	• fund for weed and vermin control • low cost financing for conservation work
Technical, labour support and advice (36)	Labour and machinery (20)	• weed control and eradication of pests in the covenanted area and on road verges • free loan or low cost hire of machinery and equipment for heavy conservation work • material for fencing and trees • roadside signs on animal presence • seed, and machinery for revegetation • labour assistance for conservation works
	Advice and technical support (17)	• facilitate access to advice on conservation • Elaborate on conservation requirements by council • provide full time environmental advice through specialised people • advise on localised land management • maintain contact with landholders • provide assistance more freely • assistance with fencing
Information and Awareness (26)	Information on covenants (10)	• enhance knowledge about covenants • involve the media in the exercise
	Education and awareness (16)	• educate the public on ways of identifying local assets • publicise covenants and their benefits • commence awareness programs on conservation values • educate the public on rights and responsibilities in conservation • educate estate agents on conservation values • create public awareness on availability of rates reduction • view conservation as a component of the whole farm management

Appendix 4.34 continued

Incentive group	Desired action (Number of respondents)	Purpose/desired outcome
Policy and Legal arrangements (23)	Appropriate policies (11)	• policy on weed and pest eradication particularly to neighbouring properties • balanced policy that recognises the necessity of conservation • policy on roadside vegetation • improve policies on road works in conservation zones • change policy on taxes rating on conservation areas • enact appropriate legislation requiring the setting aside of land portion for conservation and stronger by-laws on land clearance
	Enforcement (12)	• enforce restriction on clearing of vegetation, • enforce building codes • enforce penalty for lack of weed control on private land • discourage trespassers on private property under conservation • curb violations of standards and zoning by penalising non-compliance • more control of domestic animal • action on weed in public lands
Conservation leadership and management (18)	Conservation leadership (9)	• support cooperation with neighbours • organise meetings on conservation issues for landowners • support heritage listings • engage better collaboration with State departments with responsibility for nature conservation
	Proactive support for conservation (12)	• greater focus on environmental issues • provide positive support for conservation • support conservation management activities • ensure better management of neighbouring public land • improve water resource management, • create sustainable and attractive environment for eco-tourism • offer concessions for subdivision • identify and demarcating conservation sensitive areas
Recognition and encouragement (9)	Recognition (9)	• recognize conservation work and efforts • recognize conservation needs and actions
Organizational and administrative arrangements (8)	Planning and monitoring regimes (7)	• adopt integrated conservation and land-use planning and monitoring, • monitor of conservation health, • better planning schemes which include zoning of conservation areas • greater focus and increased conservation priority on environmental values in planning
	Infrastructure (1)	• maintain infrastructure like roads close to conservation
Compensatory measures (5)	Compensate or buy back (5)	• for land taken out of production or • buy back conservation areas of the land

Appendix 4.35 Reasons for resistance to uptake of permanent covenants among fixed-term agreement (Victoria) respondents

View	Views categories	Specific comments
Non participation (5)	No to permanent covenants (5)	• More beneficial to provide education on the benefits of conservation to landholders • prefer to educate heirs on conservation imperatives • preference for other mechanisms such as Deeds and Trusts and fixed-term agreements • apprehension of any government intervention • mistrust of State Governments and local authorities to genuinely support conservation • confident about future land managers' will and ability to maintain conservation values without a covenant • belief that nature conservation should be left to landholders • no perceived significance or need for a covenant • covenants would make future sale difficult • not appropriate due to nature of expanding usage of property and their limitations • uncertainty about the ability of permanent covenant's long term ability to protect conservation area • fire risks due to covenants

Appendix 4. 36 Views of Peov-Western Australia landholders on the State Government policies or actions as incentives

Incentive group (Total number of respondents	Desired action (Number of respondents)	Purpose/desired outcome
Economic and financial incentives (69)	Financial support (47)	• involve the public in helping to finance projects • tax incentives such as cut in fuel taxes • interest free financing • annual payments to landholders • tax incentives for fencing, • 100 to 200 percent tax deduction of all conservation cost including entering a covenant
	Fencing costs (22)	• cover cost of fencing and maintenance • partial to total cover of cost
Compensation measures (32)	Compensation for land taken out of production (28)	• allow change in the use of that land to help farmers cover the costs, loss of income, cost of getting alternative cleared land elsewhere, and loss of grazing rights • annual payment for land set aside in return for use of area for research and educational purposes • an annual fee- $50 for example, for landholders to manage the conservation areas • reimburse landowners a percentage of lost income from land under covenant • permit to clear useful agricultural land in exchange for a covenant
	Compensate local governments (4)	• cover rate rebates passed on to landowners
Land purchase (13)	Buy off land (13)	• Buy off areas which cannot be cleared due to the 20% ruling
Facilitative Covenant mechanism (9)	Flexible and simple covenant process and mechanism (9)	• flexibility and clarity of the covenant mechanism • make the covenant less harsh and a pleasure to have • allow areas under a covenant to be used by stock in drought seasons • remove land not used for production from title • consistency in issuing a covenant • coordination with other conservation strategies • streamlining funding delivery, transparency and clarity of the requirements for funding approval • engaging a follow-up process to help landowner to enter a covenant • monitor of grant money and conservation areas • penalise offenders of set out conservation conditions and measures • ensure a cost effective covenant process
Technical, labour support and advice (9)	Vermin control (6)	• vermin control on the wide road verges along main roads • total responsibility for vermin control in bushland all over the State • allow the use stryexine to kill foxes and cats • support older landholders in controlling vermin and weed

Appendix 4.36 continued

Incentive group (Total number of respondents	Desired action (Number of respondents)	Purpose/desired outcome
Organizational and administrative arrangements (9)	Streamline management and coordination of conservation programs (4)	• sort out the issue of property lease change in relation to native title • placement of funding in practical conservation work and less on research • address the issue of water use and release in properties neighbouring conservation areas • clarify who is responsible for conservation works • reimburse Local governments for rates foregone to landholders who enter into permanent covenants
	Professional advice and guidance (3)	• regular updates on management options for nature reserves standard • advice on benefits of nature conservation • advice on managing nature conservation areas so they don't become a breeding ground for vermin and weeds
	Removal of bureaucracy (2)	• have few departments and bureaucrats • create a more direct access to landholders • removal of the application process for covenants and replacement with an advisory process
Recognition and appreciation (5)		• show an interest from time to time • recognize primary producers' input into conservation efforts • public acknowledgement of the commitments of landholders who place land under conservation • encourage activities of ornithologists and similar groups
Information and Awareness (5)	Promotion of covenants and conservation (5)	• market the value of land under conservation • awareness of benefits targeted at the legal profession • increase publicity on availability of conservation grants • education on the 'bigger picture' and relevance of conservation despite the costs of conservation is necessary

Appendix 4. 37 Views of Ecov-Western Australia landholders on the Local Government policies or actions as incentives

Incentive group (Total number of respondents)	Desired action (Number of respondents)	Comments/desired outcome
Economic incentives (72)	Rates rebate (57)	• 26 respondents want totally exempt from rates • 21 respondents want a partial reduction in the rates
	Various kinds of financial support (8)	• fencing subsidies (material and erection), and weed and vermin control • subsidize fire protection • fund local landcare groups
	Reduction in land tax and tax incentives (7)	• cover conservation expenses ranging from 150 to 200% tax concession.
Non-participatory role for local Government (17)	No role for Local Government (17)	• state government responsibility • little finance available for this work • responsibility of LCDCs • not responsible enough with their own conservation needs • their involvement likely to impact on rate payers • federal government's responsibility to provide funds or tax incentives • already have a large job coordinating agriculture
Technical, infrastructure support, and advice (15)	Assistance with vermin and weed control (8)	• control feral animal and weed invasion on road verges adjacent to conservation area
	Technical support (4)	• employ engineers with knowledge and appreciation of the environment • use machine operators that show care for natural vegetation • correct drainage work across roads both entering and leaving the property • assist with roads access tracks if needed
	Advice (3)	• show benefits of nature conservation • show how to manage nature conservation areas for control of vermin and weeds
Administration, management, and planning (7)	Proactive role in management and planning (6)	• manage land subdivision to ensure retention of remnant bush ecosystem. • allow flexible fire management • assist landholders with planning to enhance property profitability • spend more funds on soil conservation • show more honesty and understanding when considering application for work that would affect neighbours' efforts to preserve flora and fauna • protect waterways
	Coordination (1)	• co-ordinate strategies to handle all local problems
Information and awareness (6)	Information and publicity (6)	• provide sign to properties identifying landowner as river care/wildlife habitat/ wetland • publicity of local conservation activities • support sensitisation of public on the sacrifice by landholders in conservation
Recognition and appreciation (4)	Public recognition (4)	• provide roadside signage • support botanical surveys to catalogue native species on private land

Appendix 5.1 Length of time of property ownership in family

	Victoria		Western Australia	
Period in years	Count	(%)	Count	(%)
<2	2	1.4	1	.7
2 to 5	11	7.7	5	3.4
6 to 10	17	12.0	10	6.7
11 to 20	20	14.1	22	14.8
21 to 30	19	13.4	23	15.4
31 to 40	14	9.9	30	20.1
>40	59	41.5	58	38.9
Total	142	100.0	149	100.0

Appendix 5.2 Conservation features on properties in Western Australia and Victoria

	Victoria		Western Australia	
Conservation features	Counts	% Responses	Counts	% Responses
Stream/River/ Creeks	66	48.2	43	40.2
Wetlands	41	29.9	19	17.8
Native Bush/Forest	60	43.8	94	87.9
Native Grass	26	19.0	8	7.5
Planted trees/plants	16	11.7	7	6.5
Salt bushes/Salt lakes	2	1.5	4	3.7
Others	4	2.9	5	4.7
None	2	1.5		

Appendix 5.3 Primary reasons for retaining nature conservation features

	Victoria		Western Australia	
Reasons for retaining nature conservation areas	Frequency	% Respondents	Frequency	% Respondents
Seasonal Grazing	3	2.0	8	4.5
For Recreational use	2	1.3	2	1.1
Future agricultural use	4	2.6	12	6.8
To support wildlife conservation	18	11.9	9	5.1
To support native vegetation	25	16.6	34	19.3
To act as wind breaks or buffer	20	13.2	22	12.5
To act as a wildlife corridor	4	2.6	6	3.4
For scenic reasons	5	3.3	4	2.3
For soil salinity control	15	9.9	27	15.3
Cost of clearing for cropping or pasture is not economical	7	4.6	13	7.4
As shade and shelter for stock	27	17.9	23	13.1
Provision of fresh water	14	9.27	5	2.8
Land not suitable for farming	4	2.65	6	3.4
Retained by previous owners.		0	1	0.6
Protection of waterway		0	3	1.7
Soil erosion control	3	2.0	1	0.6
Others				

Appendix 5.4 Proportions of respondents according to their anticipation of retention of ownership and management of the property in the family

Statements:	*I plan to retain ownership of my property within the family in the future.*				*I plan to retain the management of my property within the family in the future.*			
	Victoria		Western Australia		Victoria		Western Australia	
Responses	Count	(%)	Count	(%)	Count	(%)	Count	(%)
True	99	70.2	93	85.3	103	72.5	91	84.3
False	14	9.9	4	3.7	14	9.9	6	5.6
Not sure	28	19.9	12	11.0	25	17.6	11	10.2
Total	141	100.0	109	100.0	142	100.0	108	100.0

Appendix 5.5 Level of knowledge about permanent covenant among respondents without any form of a covenant

		Victoria		Western Australia	
Index of knowledge	Level of knowledge of permanent covenants	Frequency	(%)	Frequency	(%)
0	No knowledge	53	38.1	39	35.5
1	Little knowledge	44	31.7	33	30.0
2	Fair knowledge	25	18.0	22	20.0
3	Good knowledge	17	12.2	16	14.5
Total		139	100.0	110	100.0

Appendix 5.6 Response on desire to know more about permanent covenants

Statement: I would like to know more about permanent covenants				
	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
True	43	31.2	23	22.3
False	65	47.1	60	58.3
Not Sure	30	21.7	20	19.4
Total	138	100.0	103	100.0

Appendix 5. 7 Affiliation and association with nature conservation groups among respondents without a covenant or agreement in Victoria and Western Australia

Number of groups	Victoria		Western Australia	
	Count	(%)	Count	(%)
None	11	7.9	33	29.4
One group	96	68.6	55	49.1
Two groups	24	17.1	18	16.1
Three groups	8	5.7	2	1.8
More than 3 groups	1	.7	4	3.6
Total	140	100.0	112	100.0

Appendix 5.8 Influence of neighbours and friends on permanent covenant uptake

Statement: I would be inclined to enter a permanent nature conservation covenant on my land if neighbouring landholders or friends with similar natural areas have a permanent covenant on theirs.

	Victoria		Western Australia	
Responses	Count	(%)	Count	(%)
St. Disagree	19	13.5	21	19.4
Disagree	36	25.5	30	27.8
Neutral	38	27.0	25	23.1
Agree	28	19.9	11	10.2
St. Agree	6	4.3	6	5.6
Don't know	14	9.9	15	13.9
Total	141	100.0	108	100.0

Appendix 5.9 Attitude to permanent covenant restrictions on some uses of the conservation land

Statement: I do not mind entering a conservation arrangement that would entail permanent restrictions on some uses of the conservation land.

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Disagree	33	23.2	40	36.0
Disagree	42	29.6	21	18.9
Neutral	16	11.3	15	13.5
Agree	31	21.8	20	18.0
St. Agree	12	8.5	4	3.6
D/Know	8	5.6	11	9.9

Appendix 5.10 Perceptions of the effectiveness of permanent covenants for salinity control

Statement: 'permanent covenants are an effective mechanism at salinity control measures where it occurs on private lands.

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Disagree	11	7.9	27	24.5
Disagree	15	10.7	20	18.2
Neutral	41	29.3	18	16.4
Agree	33	23.6	22	20.0
St. Agree	10	7.1	10	9.1
Don't know	30	21.4	13	11.8
Total	141	100.0	110	100.0

Appendix 5.11 Landholders' perceptions of apparent permanent covenant benefits

Statement: The benefits of a permanent covenant are not apparent to me'

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Agree	36	25.5	36	32.7
Agree	44	31.2	44	40.0
Neutral	22	15.6	10	9.1
Disagree	22	15.6	13	11.8
St. Disagree	4	2.8	4	3.6
D/Know	13	9.2	3	2.7
Total	141	100.0	110	100.0

Appendix 5.12 Landholders' attitudes to the affiliation of a Covenantee to Government

Statement: I would only place a permanent covenant on my land with an organization that is independent of the Government

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Disagree	11	7.9	25	23.6
Disagree	28	20.0	15	14.2
Neutral	56	40.0	27	25.5
Agree	13	9.3	11	10.4
St. Agree	9	6.4	8	7.5
Don't know	23	16.4	20	18.9
Total	140	100.0	106	100.0

Appendix 5.13 Total median income of respondents in 1999

	Victoria		Western Australia	
Annual median income (A$)	Count	(%)	Count	(%)
35000 or less	34	25.7%	21	23.3%
35001-75000	37	28.1%	8	8.8%
75001-150000	18	13.7%	10	11.0%
150001-255000	28	21.2%	13	14.4%
255001-400000	4	3.0%	3	3.3%
400001- 490000	11	8.4%	35	38.9%
Total	132	100%	90	100%

Appendix 5.14 Proportion of respondents by labour commitment on the property

	Victoria		Western Australia	
Labour commitment score classes	Count	Proportion (%)	Count	Proportion (%)
Zero	14	9.9	8	7.1
1 to 2	30	21.3	9	8.0
3 to 4	19	13.5	12	10.7
5 to 8	29	20.6	16	14.3
9 to 15	32	22.7	23	20.5
>15	17	12.1	44	39.3
Total	141	100.0	112	100.0
Mean score (points)		8.6		14.32
Std. Deviation		12.27		12.37
Maximum scores		113		55

Appendix 5.15 Reception of financial support for conservation work

Statement: Have you ever received financial support/ benefits to undertake nature conservation work on your land from any organization or department?

	Victoria		Western Australia	
Frequency of financial support	Count	(%)	Count	(%)
None	48	44.0	66	69.5
Once	26	23.9	16	16.8
More than once	35	32.1	13	13.7
Total	109	100.0	95	100.0

Appendix 5.16 Level of landholders' debt on the properties

	Victoria		Western Australia	
Debt amount in A$	Count	(%)	Count	(%)
None	45	32.1	32	30.2
<100,000	42	30.0	12	11.3
100,000 to 300,000	33	23.6	24	22.6
300,001 to 500,000	14	10.0	29	27.4
> 500, 000	6	4.3	9	8.5
Total	140	100.0	106	100.0

Appendix 5.17 Landholders' perceptions of permanent covenant's impact on land value

Statement: 'A permanent covenant is likely to lead to a loss in market value of my property'.

	Victoria		Western Australia	
Response	Count	Proportion (%)	Count	Proportion (%)
St. Disagree	9	6.3	10	9.1
Disagree	24	16.8	7	6.4
Neutral	27	18.9	18	16.4
Agree	41	28.7	28	25.5
St. Agree	24	16.8	32	29.1
D/Know	18	12.6	15	13.6
Total	143	100.0	110	100.0

Appendix 5.18 Response on the effectiveness of permanent covenant over other mechanisms

Statement: There are more effective mechanisms than voluntary permanent covenants for promoting the long-term nature conservation on private lands.

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Disagree	6	4.2	8	7.4
Disagree	12	8.5	8	7.4
Neutral	42	29.6	27	25.0
Agree	29	20.4	31	28.7
St. Agree	14	9.9	18	16.7
Don't know	39	27.5	16	14.8
Total	142	100.0	108	100.0

Appendix 5.19 Percentage income ratio from property to median total annual income

	Victoria		Western Australia	
Percentage ratio of income	Count	(%)	Count	(%)
Nil %	15	11.4	7	8
12-30 %	27	20.5	7	7.9
31-50%	18	13.7	6	6.8
51-70%	10	7.6	6	6.7
71-90%	23	17.4	12	13.6
Over 90%	38	28.8	49	55.6
Total	132	100	88	100

Appendix 5.20 Pre-requisites for permanent covenant uptake in Victoria and Western Australia

Statements	*Reception of frequent long-term management advice on conservation.*		*Public recognition and appreciation of the conservation values on the land.*		*Assurance of long term nature conservation*		*Reception of on-going financial for conservation*	
	Victoria	Western Australia	Victoria	Western Australia	Victoria	Western Australia	Victoria	Western Australia
Response	(Count)%	(Count) %	(Count) %	(Count) %	(Count) %	(Count) %	(Count) %	(Count) %
Definitely Important	(35) 24.8	(24) 22.9	(13) 9.2	(12) 11.3	(43) 30.5	(28) 26.4	(58) 41.1	4(0) 38.1
Probably Important	(47) 33.3	(21) 20.0	(33) 23.4	(18) 17.0	(48) 34.0	(33) 31.1	(39) 27.7	(32) 30.5
Neutral	(23) 16.3	(24) 22.9	(38) 27.0	(28) 26.4	(25) 17.7	(19) 17.9	(22) 15.6	(13) 12.4
Probably Not Important	(20) 14.2	(18) 17.1	(25) 17.7	(25) 23.6	(13) 9.2	(14) 13.2	(8) 5.7	(5) 4.8
Def. Not Important	(9) 6.4	(10) 9.5	(21) 14.9	(15) 14.2	(5) 3.5	(7) 6.6	(7) 5.0	(6) 5.7
No opinion /Don't know	(7) 5.0	(8) 7.6	(11) 7.8	(8) 7.5	(7) 5.0	(5) 4.7	(7) 5.0	(9) 8.6
Totals	(141) 100.0	(105) 100.0	(141) 100.0	(106) 100.0	(141) 100.0	(106) 100.0	(141) 100.0	(105) 100.0

Appendix 5.21 Significance of non-financial incentives by State and Local governments

Statement: Non-financial recognition by State and Local Governments of my effort to conserve nature would be a significant step in motivating me to enter a permanent covenant on my land.

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Disagree	14	10.1	14	12.7
Disagree	32	23.2	20	18.2
Neutral	43	31.2	36	32.7
Agree	28	20.3	13	11.8
St. Agree	8	5.8	12	10.9
Don't know	13	9.4	15	13.6
Total	138	100.0	110	100.0

Appendix 5.22 Views on compensation for permanent covenant uptake by landholders

Statement: permanent covenants should come with a mechanism of compensation for loss of future productive use of my land.

	Victoria		Western Australia	
Response	Count	(%)	Count	(%)
St. Disagree	4	2.8	1	.9
Disagree	16	11.3	6	5.5
Neutral	25	17.7	18	16.4
Agree	52	36.9	24	21.8
St. Agree	38	27.0	51	46.4
Don't Know	6	4.3	10	9.1
Total	141	100.0	110	100.0

Appendix 5.23 Views on bearer of costs of entering a permanent covenant

Statement: The cost of entering a permanent covenant on my land should be covered by the agency/ organisation issuing the covenant.

	Victoria		Western Australia	
Response	**Count**	**(%)**	**Count**	**(%)**
St. Disagree	5	3.6	3	2.7
Disagree	7	5.0	1	0.9
Neutral	26	18.7	18	16.4
Agree	50	36.0	34	30.9
St. Agree	41	29.5	40	36.4
Undecided	10	7.2	14	12.7
Total	139	100.0	110	100.0

Appendix 5.24 Expected public contribution to cost of conservation on private lands

Question: What percentage of the cost of nature conservation on your land do you consider should be covered by the public?

	Victoria		Western Australia	
Expected public contribution in (%)	**Count**	**(%)**	**Count**	**(%)**
Nil	30	25.4	28	31.1
1-10	8	6.8	3	3.3
11-20	4	3.4	2	2.2
21-20	10	8.5	6	6.7
31-40	2	1.7	4	4.4
41-50	33	28.0	18	20.0
51-60	10	8.5	4	4.4
61-80	8	6.8	9	10.0
>80	13	11.0	16	17.8
Total	118	100.0	90	100.0

Appendix 5.25 Variable correlation for respondents with no covenant or agreement in landholders (Victoria)

		Attitudes to a permanent covenant uptake	Econ_depend	Knowledge	Con_interest	Age	Restrictions	Value_loss	Benefits
Pearson Correlation	Attitudes to a permanent covenant uptake	1.000	-.212	.240	.320	-.296	.360	-.118	-.365
	Econ_depend	-.212	1.000	.014	-.001	-.041	.018	.076	.200
	Knowledge	.240	.014	1.000	.107	.013	.301	-.396	-.112
	Con_interest	.320	-.001	.107	1.000	-.124	.154	-.055	-.081
	Age	-.296	-.041	.013	-.124	1.000	-.025	-.074	.150
	Restrictions	.360	.018	.301	.154	-.025	1.000	-.313	-.047
	Value_loss	-.118	.076	-.396	-.055	-.074	-.313	1.000	.316
	Benefits	-.365	.200	-.112	-.081	.150	-.047	.316	1.000
Sig. (1-tailed)	Attitudes to a permanent covenant uptake	.	.009	.004	.000	.000	.000	.094	.000
	Econ_depend	.009	.	.440	.495	.324	.421	.199	.013
	Knowledge	.004	.440	.	.119	.443	.000	.000	.107
	Con_interest	.000	.495	.119	.	.084	.043	.272	.183
	Age	.000	.324	.443	.084	.	.390	.206	.048
	Restrictions	.000	.421	.000	.043	.390	.	.000	.300
	Value_loss	.094	.199	.000	.272	.206	.000	.	.000
	Benefits	.000	.013	.107	.183	.048	.300	.000	.

Appendix 5. 26 Coefficient table of final path model for respondents with no covenant or agreement in landholders (Victoria)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	3.375	.665		5.078	.000	2.058	4.691
Econ_depend	-6.097E-03	.002	-.181	-2.487	.014	-.011	-.001
Knowledge	.175	.091	.153	1.923	.057	-.005	.355
Con_interest	.221	.076	.213	2.921	.004	.071	.371
Age	-2.447E-02	.008	-.218	-2.968	.004	-.041	-.008
Restrictions	.241	.060	.309	3.995	.000	.122	.361
Value_loss	-.114	.068	-.140	-1.666	.098	-.250	.022
Benefits	.271	.073	.291	3.735	.000	.128	.415

a. dependent variable: attitudes to a permanent covenant uptake

Appendix 5.27 Variable Correlation for respondents with no covenant or agreement in landholders (Western Australia)

		Attitudes to permanent covenant uptake	Con_interest	Length	Fin_support	Membership	ConRatio	Salinity	Value_loss	Benefits	Restrictions
Pearson Correlation	Attitudes to permanent covenant uptake	1.000	.177	-.195	-.111	.203	.080	.356	-.228	.426	.395
	Con_interest	.177	1.000	.205	.301	.203	.055	-.034	-.132	-.055	.123
	Length	-.195	.205	1.000	.139	.182	-.135	-.214	.107	.040	.088
	Fin_support	-.111	.301	.139	1.000	.323	-.088	-.141	-.171	-.051	.107
	Membership	.203	.203	.182	.323	1.000	-.106	-.106	-.207	.047	.115
	ConRatio	.080	.055	-.135	-.088	-.106	1.000	.225	-.094	.095	.191
	Salinity	.356	-.034	-.214	-.141	-.106	.225	1.000	.005	-.127	.260
	Value_loss	-.228	-.132	.107	-.171	-.207	-.094	.005	1.000	-.297	-.070
	Benefits	.426	.055	-.040	.051	-.047	-.095	.127	-.297	1.000	.207
	Restrictions	.395	.123	.088	.107	.115	.191	.260	-.070	.207	1.000
Sig. (1-tailed)	Attitudes to permanent covenant uptake	.	.032	.020	.125	.017	.203	.000	.008	.000	.000
	Con_interest	.032	.	.016	.001	.017	.284	.362	.084	.285	.101
	Length	.020	.016	.	.074	.029	.080	.013	.132	.338	.181
	Fin_support	.125	.001	.074	.	.000	.182	.070	.037	.299	.133
	Membership	.017	.017	.029	.000	.	.136	.135	.015	.312	.115
	ConRatio	.203	.284	.080	.182	.136	.	.009	.163	.161	.023
	Salinity	.000	.362	.013	.070	.135	.009	.	.477	.093	.003
	Value_loss	.008	.084	.132	.037	.015	.163	.477	.	.001	.234
	Benefits	.000	.285	.338	.299	.312	.161	.093	.001	.	.015
	Restrictions	.000	.101	.181	.133	.115	.023	.003	.234	.015	.

Appendix 5.28 Final path model coefficients table for respondents with no covenant or agreement in landholders (Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.741	.611		4.487	.000	1.529	3.953
Con_interest	.181	.073	.192	2.488	.015	.037	.326
Length	-.164	.059	-.213	-2.760	.007	-.282	-.046
Fin_support	-.453	.140	-.256	-3.230	.002	-.732	-.175
Membership	.410	.117	.279	3.515	.001	.179	.642
ConRatio	1.461E-03	.005	.021	.273	.785	-.009	.012
Salinity	.140	.054	.204	2.600	.011	.033	.248
Value_loss	-4.419E-02	.069	-.051	-.640	.523	-.181	.093
Benefits	.351	.083	.336	4.249	.000	.187	.515
Restrictions	.190	.057	.264	3.345	.001	.077	.303

a. dependent variable: attitudes to a permanent covenant uptake.

Appendix 5.29 Variable correlation for combined respondents with no covenant or agreement in landholders (Victoria and Western Australia)

		Attitudes to permanent covenant Uptake	Knowledge	Benefits	Salinity	Value_loss	Restrictions	Membership	Length	Con_interest	State	Fin_support
Pearson Correlation	Attitudes to permanent covenant Uptake	1.000	.147	.401	.280	-.213	.377	.266	-.162	.311	-.220	.119
	Knowledge	.147	1.000	.065	-.131	-.247	.075	.201	.054	.142	.014	.056
	Benefits	.401	.065	1.000	.108	-.293	.129	.001	-.114	.091	-.047	.232
	Salinity	.280	-.131	.108	1.000	.042	.158	-.093	-.122	.091	-.176	.040
	Value_loss	-.213	-.247	-.293	.042	1.000	-.183	-.209	.157	-.129	.151	-.150
	Restrictions	.377	.075	.129	.158	-.183	1.000	.133	.002	.177	-.054	.037
	Membership	.266	.201	.001	-.093	-.209	.133	1.000	.024	.156	-.195	.209
	Length	-.162	.054	-.114	-.122	.157	.002	.024	1.000	.109	.145	-.161
	Con_interest	.311	.142	.091	.091	-.129	.177	.156	.109	1.000	-.077	.141
	State	-.220	.014	-.047	-.176	.151	-.054	-.195	.145	-.077	1.000	-.469
	Fin_support	.119	.056	.232	.040	-.150	.037	.209	-.161	.141	-.469	1.000
Sig. (1-tailed)	Attitudes to permanent covenant Uptake	.	.017	.000	.000	.001	.000	.000	.009	.000	.001	.043
	Knowledge	.017	.	.172	.029	.000	.138	.002	.218	.020	.422	.208
	Benefits	.000	.172	.	.060	.000	.031	.496	.050	.095	.251	.000
	Salinity	.000	.029	.060	.	.274	.011	.090	.039	.093	.005	.283
	Value_loss	.001	.000	.000	.274	.	.004	.001	.012	.031	.014	.015
	Restrictions	.000	.138	.031	.011	.004	.	.027	.488	.005	.219	.297
	Membership	.000	.002	.496	.090	.001	.027	.	.364	.012	.002	.001
	Length	.009	.218	.050	.039	.012	.488	.364	.	.057	.018	.010
	Con_interest	.000	.020	.095	.093	.031	.005	.012	.057	.	.133	.021
	State	.001	.422	.251	.005	.014	.219	.002	.018	.133	.	.000
	Fin_support	.043	.208	.000	.283	.015	.297	.001	.010	.021	.000	.

Appendix 5.30 Variable coefficients of the final path model for combined respondents with no covenant or agreement in landholders (Victoria and Western Australia)

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	2.934	.583		5.029	.000	1.784	4.085
Knowledge	.100	.066	.086	1.528	.128	-.029	.230
Benefit	.340	.056	.349	6.057	.000	.451	.229
Salinity	.128	.041	.176	3.124	.002	.047	.209
Value_loss	3.476E-02	.050	.042	.697	.487	-.064	.133
Restrictions	.181	.042	.237	4.270	.000	.098	.265
Membership	.336	.090	.213	3.723	.000	.158	.514
Length	-9.941E-02	.039	-.141	-2.538	.012	-.177	-.022
Con_interest	.202	.055	.205	3.674	.000	.093	.310
State	-.381	.150	-.158	-2.539	.012	-.678	-.085
Fin_support	-.212	.091	-.147	-2.327	.021	-.392	-.032

a. dependent variable: attitudes to a permanent covenant uptake.

Appendix 5. 31 Views of respondents with no covenant or agreement in Victoria on the State government policies or actions as incentives

Incentive group (Number of cases)	Incentive subgroup (No of respondents)	Desired actions/comments
Financial Incentives (28)	Tax exemption and subsidies *(9)*	• removal of all land tax and capital land tax • allow tax deduction on more direct financial benefits on activities such as fencing, tree planting and erosion control • 100 percent tax deductions from federal government and 100 percent grants from state government • avail farming subsidies on a pro rata basis to farmers for conservation
	Financial assistance/ incentives *(19)*	• provide funds for specific eg. fencing materials/ and labour, pest, plant and animal control • pay for title searches and legal costs for the permanent covenants • establish and maintain nature conservation programs on farm • grants and tax incentives • reimburse costs of native vegetation planting.
Technical support and services (25)	Provision of support and advice on management and planning *(17)*	• assistance with long-term planning and advice on nature conservation • expert support for establishment and maintenance of nature reserve on farm • support to be done through locally based landcare co-ordinators
	Assistance with weed and vermin control *(4)*	• assistance with weed vermin control. • direct assistance without involving landcare groups • provide financial incentives to landcare groups to carry out pest or vermin and weed control.
	Assistance with labour *(1)*	• use of supervised prison labourers, and youth on work for dole scheme.
	Support to landcare groups *(3)*	• form more landcare groups, and landcare areas in order to bring conservation closer to the landholders • increase funding to landcare groups but make landholders bear some of the conservation cost.
Equity response (20)	Compensation *(20)*	• annual management fee payment to landholders to cover costs of works done in conservation areas including labour • in recognition of conservation work, and 'donation' made by landholder • compensation for incurred loss of use of land, loss in value of land, loss of income for locked up areas, losses of production on cultivated land resulting from vermin harboured in the conservation areas, and cost of maintaining the conservation areas. • compensate by: removal of stamp duty on property with covenants in order to offset value loss, trade off between unused road rent and permanent covenant areas, and annual payment per hectare of land under conservation

Appendix 5.31 continued

Incentive group (Number of cases)	Incentive subgroup (No of respondents)	Desired actions/comments
Management and administration (13)	Flexibility of permanent covenant agreement *(2)*	flexible permanent covenant arrangements such as making allowance for integration of the conservation area in stock rotations.
	Restructure/ Streamline funding process *(1)*	guaranteed direct funding to farmers for conservation work
	Lead by example *(3)*	leading by example by: halting the harvesting old growth forests particularly in catchment areas, demonstrated commitments through improve policies and practice, and through improved management of bordering roadside reserves
	Coordination and management *(3)*	coordinate conservation works and administration of landcare groups for collective approach for desired conservation outcome appoint qualified conservation management team
	Remove bureaucracy and increase conservation interest *(2)*	simplify covenanting processes by reducing the bureaucracy, red tape and paperwork institute more activities and demonstrate greater interest in conservation on private lands.
	Stop coercion *(2)*	keep covenants voluntary.
Education, information and awareness (8)	8	continue education, awareness of conservation values, give encouragement education targeting farmers because many are ignorant about conservation values increase awareness of the personal, financial, social, environmental advantages of conservation information and knowledge about covenants better knowledge of the values in implementing a permanent covenant awareness program by: advertising the intentions of a permanent covenant, disseminating information through landcare groups.
Policy issues (5)	Policy and land valuation criteria *(2)*	review land valuation to rewards conservation efforts by taking into account conservation activities and resultant improvements with an increase in value government support should treat conservation on equal terms with farming in respect to policies, planning, and taxation. ensure change in government do not lead to change in policies that affect the status of permanent covenants.
	Buy back land *(3)*	buy back land that cannot be cleared or used for farming purposes use voluntary acquisition.
Non involvement in covenants (10)	Not in favour of covenants *(5)*	concern about attaching a permanent covenant to the land title. covenant acceptable if it is designed to "...avoid affecting or attaching to the title".
	Keep government out of it *(5)*	landholders are the owners of the land and therefore no need for government interference.

Appendix 5. 32 Views of respondents with no covenant or agreement in Victoria on the Local government policies or actions as incentives

Incentive group (Number of cases)	Incentive subgroup (Number of respondents)	Desired actions/comments
Financial incentives (31)	Rate rebates (27)	• reduction or total exemption from rates for areas under a permanent covenant • rate reduction should be provided for all land parcels under conservation irrespective of whether they have a permanent covenant or not. • rate advantages should be in excess of the rate value of the land lost to conservation. • rate rebates should be conditional to good management of the conservation area including the control of weed • rebates are already in place in a few shires.
	Financial support (4)	• support fencing and implementation of land management agreements.
Technical support services (20)	Advice on conservation (5)	• advice and assistance in assessing specific local conservation needs and choosing the best conservation strategies for the area • appoint co-ordinators for nature conservation in local governments
	Support control of weed and vermin (6)	• support in weed and vermin management, particularly weed, foxes, and cats
	Provision of equipment and labour (7)	• provision of equipment and labour to support in the implementation of covenants, in the form of cheap or free labour and hire of appropriate equipment such as bulldozers or rifflers to plant trees. • labour obtained from work for the dole schemes administered through local government with appropriate supervision. • labour for control of weed in conservation area, along roadsides, and for any other conservation work required under a covenant.
	Infrastructural support (2)	• pay for and construct access to covenant sites.
Non participation of landholders or government (12)	No to permanent covenants (12)	• this is not the responsibility of local government but of state and federal governments • local government have sufficient work to do such as handling roadside conservation, • landholders are capable of managing their own affairs in relation to conservation.

Appendix 5.32 continued

Incentive group (Number of cases)	Incentive subgroup (Number of respondents)	Desired actions/comments
Policy, Legislation and enforcement (10)	Conservation policy support (4)	• greater support for nature conservation policy at local government level, by creation of a balance between conservation and development, • ensure that benefits provided by local government for maintaining nature conservation areas are maintained when properties changed hands. • formulate policy that ensures nature conservation is primary to the pursuit of economic gains.
	Control and Enforcement of conservation legislation (6)	• control and enforce existing conservation regulations by application of penalties for failure to comply with reasonable conservation measures • enforce legal requirement of adjoining land holders to control weeds and vermin which threaten to infest areas of conservation value • adopt of tougher penalties on illegal clearing of native vegetation for development
Education, information and awareness (10)	Publicity and information (5)	• production of information material relating to conservation issues, targeted at the public. • encourage public and tourists to visit conservation schemes • provide on-ground support with information required to maintain the conservation values of the land • provide the state government with information on local areas that are not suitable for farming.
	Education and awareness (5)	• awareness targeted at schools and highlighting local areas of conservation significance, the importance of retaining native vegetation, and fragility of the environment.
Moral encouragement (6)	Encouragement (6)	• recognition by including the properties with a covenant on shire maps • provision of roadside signs • acknowledgement of the benefits of having community activities relating to conservation would help to encourage other landholders to become conservation conscious. • set a good example in management of council land and reserves

Appendix 5. 33 Other comments by respondents with no covenant or agreement in Victoria on nature conservation on private lands and /or permanent convents

Issues about covenants uptake (Number of respondents)	Comments by respondents
Necessity of financial support (17)	• financial constraint and disadvantage are the main disincentive to conservation • give consideration to farm production requirements
Apprehension about covenant necessity and effectiveness (10)	• covenants might not be the right conservation strategies in the future, just like past land clearing policies • nature conservation is being overly extended in covenants • public awareness and landholder participation are sufficient conservation strategies • covenants may not be necessary as more people start to appreciate the need for conservation on their property • Apprehensive about rigidity of a covenant and prefer mutual trust agreements that account for possible changes in the future when conservation may prove possible to co-exist with some other form of commercial enterprise
Apprehension about loss of control (5)	• apprehensive about the possible loss of control over property • covenants are an infringement of property rights
Keep off landholders (5)	• prefer State and Local Governments to keep off private landholders • feel conservation on private land is a personal matter and landholders do not need to be told what to do • view restriction on clearing of land as unjust • conservation should be encouraged without imposing covenants • enough land already locked up for conservation by Government

Appendix 5. 34 Views of respondents with no covenant or agreement in Western Australia on the State Government policies or actions as incentives

Incentive group (Number of cases)	Incentive subgroup (Number of respondents)	Desired actions/comments
Education, information and public awareness (16)		• provide funding for information on the importance of conservation, and publicity of covenants in order to ensure greater awareness among the public • educate shire councillors on how to promote LCDC work • set up trial areas for nature conservation as an example to the community to serve as an educational project for schools as well as all landholders.
Equity (12)	Equity (12)	• compensation in form of; financial payment in lieu of restrictions placed on a covenant • allocate alternative non-conservation land • Base compensation on equity noting that "we took up land it is on 'Condition of Purchase' lease in which we are made to fence it and to have a large portion of it cleared for agriculture. Now, if some of it is to be reserved the government should pay for it"
Financial incentives (11)	Financial support (7)	• cover the expenses incurred in taking up a conservation covenant • provide finances for erection and maintenance of fences, on-going costs of vermin, weed and fire control
	Support /compensate shires (4)	• compensate Local Governments for rates concessions offered to landholders • support local conservation related infrastructure development
Management and administration (10)	Management accountability (3)	• more accountable management and policy on covenants that is beyond political tenure • lead by example on crown land
	Reduce/ Remove bureaucracy and involve landowners (7)	• reduce bureaucracy • greater involvement of landowners in decision making • lesser paper work in financial assistance for conservation and permanent covenant uptake • remove legal restrictions and 'red tapes that combine to reduce the way one can use and manage the land • use negotiation instead of using "heavy handed tactics of clearing bans and telling landholders what they can or cannot do'
Policy action (9)	Better government policy (4)	• effect policies that make conservation profitable so that "farmers might then have a fairer minded approach to permanent covenants on their land' • more proactive policies rather than reactive such as the "blanket ban on all the clearing of land", and to "curtail clearing of fragile lands, policies that promote new and innovative conservation and scientific research
	Land purchase (5)	• Either State Government or syndicates or conservationists should buy the whole farms for reserves and let them go back to bush, or to buy off areas of the land that have conservation values, such as corridors with adjoining landowners, at the prevailing market price
Technical support services (6)	Provision or labour and material (6)	• provide labour and/or material for conservation work, particularly for fire control, fencing, tree planting and removal of noxious weed • labour availed from Work for the dole parties • provide conservation materials including free or subsidized tree seedlings and plants for rehabilitation or enrichment planting of conservation areas

Appendix 5. 35 Views of respondents with no covenant or agreement in Western Australia on the Local government policies or actions as incentives

Incentive group (Number of cases)	Incentive subgroup (Number of respondents)	Desired actions/comments
Financial incentives (25)	Rate rebates	• rate reduction or total exemption on areas under a covenant.
	Financial support	• financial support in form of funds to cover cost of entering a covenant, and fencing, and 50-70% of management costs.
Non participation of government or landholders (17)	Leave landowners alone (2)	• leave landholders to take care of conservation without interference • most farmers are the best guardians of the land.
	Don't involve local government (9)	• involvement would be a cost to the tax payers in which the covenant holder would still have to contribute • lack sufficient funds for make any effective contribution • perception that this is not local government concern.
	No to permanent covenants (6)	• not comfortable with removal of control from the land • loss of management rights • view that "all landholders, or most, try very hard to do the right thing for conservation" • equates entering a permanent covenant to "giving the land to the state or to government bureaucrat"
Management and administration (14)	Better planning, policies and management (7)	• introduce better planning modules, management systems and policies in conservation • demonstrate ability to manage an effective covenant programme • make shire planning policies clear and rigid enough • set example with responsible land management practices by reviewing applications for subdivisions more carefully in order to avoid the decimation of conservation areas and to preserve bush corridors and native vegetation on road verges • set local management goals that provide a "bigger picture" of conservation patterns by registering those that are willing to enter conservation agreements • make conservation policy Australia-wide, not locally • remove planning schemes for conservation blocks from bigger locations in order to ensure a holistic approach to planning
	Consult farmers (3)	• involve farmers in conservation decisions through consultation and openness to their opinions.
	Facilitation and coordination role (4)	• coordinate and facilitate community to work together instead of dictating to them • organise volunteer groups • act as a conduit between the landholders and state government
Technical support services (12)	Advice and demonstration (4)	• advice on covenant entry process and how to maintain quality remnant bushland areas by providing a mentor. • set aside own shire reserves as demonstration what can be expected in conservation areas • lead by example by participating in conservation networks • hold seminars and field days to work at specific conservation activities.
	Support infrastructure (3)	• assist with road drainage- such as installation of adequate culverts • maintenance of local road verges • removal of trees carrying misel-tole vines • construction of fire breaks
	Support with manual work (2)	• labour to control rabbits, foxes and weeds on roadside verges.

Other comments by non-covenant or agreement respondents in Western Australia.

Appendix 5. 36 Reasons advanced for lack of interest in permanent covenants by respondents without any covenant or agreement in Western Australia.

1.	"I fear I will loose control of my own land and be lumbered with a whole lot more red tape from government departments."
2.	"The landowner appears to be losing their rights to make decisions of their land for sustainable land use."
3.	"It has taken a lot of hard work and money to obtain ownership of my land. I am not about to relinquish control over it for little or no compensation."
4.	"The problem with permanent covenants is it stops responsible landholders using it as emergency only protection for sheep. Such as times of storm or cold rainy weather straight after shearing."
5.	"The small amounts of native areas on my property only need fencing. Therefore, I see no need for any further government involvement. ...I do not care much about the above issues on covenants. All I know is if fencing was granted the area would be safe without having to place a covenant on it."
6.	"I do not believe in permanent covenants unless a farmer refuses to do any form of conservation."
7.	"I am concerned that a covenant would become an excuse for the government to gain increased control or interference on my land."
8.	"...Let the genuine farmers' farm the land the way they think is the best."
9.	"...Most farmers are the best guardians of the land."
10.	"I am not comfortable with any arrangement that removes my control of 'my' land."
11.	"No to government interference. This is not government concern..."
12.	"...Not in favour of covenants."
13.	"We are the most over governed, over regulated country in the world. We do not want more."
14.	"I do not believe in permanent covenants. Farmers who farm for the future will conserve their land."
15.	"No deal. No permanent covenants. The land is not going to the State or government bureaucrat!!"
16.	"There is enough government control. No more is need"
17.	"The legal restrictions and red tape that combine to reduce the way you can use and manage your own land are not welcome."
18.	"We control and want to continue to control all the land ourselves. We hope to sell it this year or early next year."
19.	"I do not believe we need permanent covenants because all landholders, or most, try very hard to do the right thing for conservation. Landholders need to be encouraged not told what to do. Two things that are lacking are advice and dollars."
20.	"I cannot see why we cannot clear remnant bush and plant shelter belts that can be harvested as we have remnant bush that is degraded and hard to maintain "
21.	"Permanency of any agreement for a set of time worries me, i.e. Today best practices may not be best practices for tomorrow. We need to e flexible to change."
22.	"I don't know but I prefer government not to interfere."
23.	"Drainage is the only way to go. Not covenants
24.	"I always do and prefer to do my own thing."
25.	"If farming were a viable long term enterprise, farmers would do the necessary work to preserve and conserve their own."
26.	"If a government department can't look after their bit, how can they expect us to?"