

ECONOMICS OF PRESERVING EUCALYPT WOODLAND:  
DIEBACK CONTROL, PRESERVATION OF WOODLAND  
AND CHOICES

A Dissertation Presented in Partial Fulfilment  
of the Requirements for the Degree of  
Master of Economics

by  
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I certify that:

1. The substance of this dissertation has not already been submitted for any degree and is not being currently submitted for any other degree;
2. any help received in preparing this dissertation and all sources used have been acknowledged herein.



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Rohan Ekanayake

'Man's Brain and Thoughts are the Products of Nature  
and Are in Correspondence with it' - Engels

## ABSTRACT

Grazing properties in southern New England have approximately one third of their land as woodland. Half of this woodland is dying due to the set of diseases and conditions known as eucalypt dieback. There appear to be substantial external costs from the decline and the death of this woodland, and the control of the problem provides many public-good benefits.

The attitudes of a relevant segment of the public to eucalypt dieback have been sought, their preferences for different control measures have been elicited and analysed. The choices between alternative woodland types, and preservation benefits were also studied and analysed in the process.

The results in this study have been obtained by regression analyses of cross-sectional survey data. Relatively straight forward regression analyses helped determine the magnitudes of recreation, existence, and option values. To estimate the demand for alternative dieback control measures, a system of demand equations was estimated jointly by Zellner's method of seemingly unrelated regressions. A single equation estimated by ordinary least squares was used to choose between alternative types of eucalypt woodland to preserve.

The recreation, existence, and option values were estimated by the direct question method approved by the U.S. Water Resources Council in 1979. Respondents' willingness-to-pay determined these preservation values. The preferences for alternative control measures, and choice between alternative types of eucalypt woodland to preserve were determined through a budget-allocation game following Hardie and Strand (1978). This game appears to overcome the free-rider difficulty inherent in the demand for public goods.

This study indicates that the individuals who respond are very concerned to improve the health of the surrounding woodland. They would appear to be willing to help fund research into the dieback problem, and would benefit from the knowledge that dieback would be reduced.

The demand for dieback control indicates preferences for eucalypt alternatives like preserving mature trees, and fencing-out-stock from young eucalypt regeneration, rather than other plausible control measures. Apparently members of the sample had no consistent rational preferences for introduced tree species. Between the biological characteristics for choices between woodland types, they picked healthiness as the most important attribute of woodland.

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Finally, all residual errors or omissions in the dissertation are the sole responsibility of the author.

## TABLE OF CONCENTS

ABSTRACT	ii
PREFACE	iv
LIST OF TABLES	
LIST OF FIGURES	
Chapter	
1 THE NATURE OF THE PROBLEM	1
1.1 Introduction	1
1.2 Social Relevance of the Dieback Problem	2
1.3 Potential Solutions and Control Measures	3
1.4 The Centre of Research	6
1.5 Objectives of the Present Research	6
1.6 Plan of the Dissertation	7
2 ECONOMIC THEORY OF BENEFIT ESTIMATION	9
2.1 Introduction	9
2.2 Social Benefits and Costs	9
2.2.1 The general model	9
2.2.2 Consumer's surplus concepts	10
2.3 Application of the Benefit Concepts	10
2.3.1 Recreational value (RV)	10
2.3.2 Existence value (EV)	11
2.3.3 Option value (OV)	11
2.3.4 Overall benefits	11
2.4 Some Relevant Aspects of Benefit Valuation	12
2.4.1 Do benefit values for preservation vary with accessibility	12
2.4.2 Does benefit value vary with the species	12
2.4.3 Does benefit value vary with the rarity of species	13
2.4.4 The new demand theory as applied to the preservation problem	13
2.5 A Utility Model	14
2.5.1 Nature of the theory	14
2.6 Research Inquiry	16

## Chapter

3	METHODS OF VALUATION AND DEMAND ESTIMATION	
3.2	Choice of Valuation Method	
3.3	Valuation of Benefits for Public Goods	21
3.3.1	Smith auction method	21
3.3.2	Bohm's method of estimating demand for public goods	22
3.3.3	Johnston's willingness-to-pay surveys	23
3.3.4	Hardie and Strand's method	24
3.4	The Methodology of the Present Study	25
4	METHODS OF ANALYSIS	
4.1	introduction	27
4.2	The Setting	27
4.3	Specification of the Analytical Models	28
4.3.1	Application to choice between alternative policies	29
4.3.2	The budget allocation game and free-rider difficulty	29
4.3.3	Nature of regression analysis	31
4.3.4	Estimation of the system	35
4.3.5	Application to the choice between alternative woodland types	36
4.4	Extension of the Direct Method to Benefit Valuations	37
4.5	Socio-Economic Characteristics	38
5	ESTIMATION OF RECREATION, EXISTENCE AND OPTION VALUES	40
5.1	Introduction	40
5.2	Attitudes to Characteristics of Dieback Problem	40
5.3	The Recreation Values	43
5.3.1	The values in aggregate	43
5.3.2	Disaggregated explanatory models	45
5.3.3	Aggregated model	48
5.4	Existence Value (EV)	49
5.4.1	Disaggregated explanatory models	49
5.4.2	Aggregated model	52



5.5	Total Value	53
5.6	Option Value	56
	5.6.1 Disaggregated model	56
	5.6.2 Aggregated model	62
5.7	Extensions to Existence Values	63
5.8	Conclusions and Policy Implications	67
5.9	Possible Directions for Further Studies	69
6	DEMAND FOR ALTERNATIVE MEASURES TO CONTROL DIEBACK	71
6.1	Introduction	71
6.2	Method of Disaggregation	71
	6.2.1 Results	73
	6.2.2 Explanatory power of systems of equations	73
	6.2.3 Explanatory power of the individual equations in the systems	76
	6.2.4 Signs of the coefficients, complementarity and substitutability	76
	6.2.5 Significance levels of the explanatory variables	81
6.3	Method of Aggregation	82
	6.3.1 Results	86
	6.3.2 Explanatory power of the systems and individual equations	86
6.4	Conclusions and Policy Implications	86
6.5	Possible Directions for Further Studies	89
7	CHOICE BETWEEN ALTERNATIVE TYPES OF EUCALYPT WOODLAND TO PRESERVE	91
7.1	Introduction	91
7.2	Method and Analysis	91
7.3	Results	
	7.3.1 Disaggregated models, signs and sizes of the coefficients	93
	7.3.2 Aggregated models, signs and sizes of the coefficients	94
7.4	Policy Implications	98
7.5	Conclusions	101

8	DIEBACK CONTROL, PRESERVATION OF WOODLAND AND CHOICES	103
	8.1 Introduction	103
	8.2 Overview	104
	8.2.1 Nature of the results	104
	8.2.2 Relative importance of recreation value	105
	8.3 The Findings	107
	8.4 The theoretical Setting	108
	8.4.1 Recognising characteristics	109
	8.5 Overall Implications of the Results	110
	8.6 Suggestions for Further Research	110
Appendix		
1	ESTIMATION OF SAMPLE SIZE	113
2	CORRELATION COEFFICIENTS AMONG ALL PRICE VARIABLES	117
3	CORRELATION COEFFICIENTS AMONG FIVE SOCIO-ECONOMIC VARIABLES AND PRICE VARIABLES	118
4	CORRELATION COEFFICIENTS AMONG THE SELECTED SOCIO-ECONOMIC VARIABLES AND PRICES	119
5	THE SYSTEM OF EQUATIONS: RESTRICTED WITHOUT SOCIO-ECONOMIC VARIABLES	120
6	SUMMARY OF AGGREGATE PURCHASES	123
7	MEAN VALUE ALLOCATIONS AMONG CONTROL MEASURES	124
8	SUMMARY OF QUANTITIES PURCHASED	125
9	MEAN VALUE ALLOCATIONS AMONG EUCALYPT WOODLAND TYPES	126
10	LAND USE SURVEY	127
	REFERENCES	137

## LIST OF TABLES

Table		
5.1	Attitudes to Characteristics of Dieback of Eucalypt Woodland	41
5.2	Recreation and Existence Values (\$ mean per household)	44
5.3	Recreation Value of Individuals	47
5.4	Existence Value of Individuals	51
5.5	Correlation Coefficients Among Measurement Variables and Socio-Economic Variables	54
5.6	The Option Values	57
5.7	Estimated Option Values	59
5.8	Option Values of Different Groups	61
5.9	Aggregated Option Values	64
5.10	Valuation of Extra Benefits	66
6.1	The System of Equations: Restricted with Socio- economic Variables	75
6.2	The More Important Equations Within Each System	77
6.3	The Significant Explanatory Variables in the Four Systems: with t-values	79
6.4	Budget Shares of All Purchased Control Measures	83
6.5	Aggregated Demand for Control Measures	85
6.6	Results of Aggregated Models	87
7.1	Disaggregated Models	95
7.2	Aggregated Bids for Environmental Goods	96
7.3	Aggregated Models	99
8.1	The Relative Importance of Rcreation Values	106

## LIST OF FIGURES

## Figure

- 3.1 The Selection of a Valuation Method: The Relationship of Some Groups of Methods to Net Social Benefit. 20