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**Economic Non-Market Valuation Techniques: Theory and Application to Ecosystems  
and Ecosystem Services.**

**A Case Study of the Restoration and Preservation of Pekapeka Swamp: An Application  
of the Contingent Valuation Method in Measuring the  
Economic Value of Restoring and Preserving  
Ecosystem Services in an Impaired Wetland**

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## ABSTRACT

This thesis explores the theoretical basis of non-market valuation techniques; discusses in detail, the Contingent Valuation Method (CVM) and the Travel Cost Method (TCM); highlights the advantages and disadvantages of various non-market valuation techniques and their suitability under different conditions; and identifies the Contingent Valuation Method as the most appropriate non-market valuation technique to apply to Pekapeka Swamp, the case study site.

The overall objective of the study is to apply the most appropriate non-market valuation technique to estimate the total economic value (TEV) of the restoration and preservation of Pekapeka Swamp and to test Hawke's Bay Regional Council's (HBRC) restoration programme for the Pekapeka Swamp using economic efficiency criteria. An appropriate contingent valuation mail survey questionnaire was designed to elicit responses to the dichotomous choice (DC) and open-ended valuation questions, and to collect socio-economic data and information on households' attitude towards the environment. Responses to the survey questionnaire were analysed (using ordinary least squares regression for the open ended question, and logistic regression, for the DC question) to identify the factors that influence households' willingness to pay (WTP) for the restoration and preservation of the Pekapeka Swamp and to estimate TEV. A number of functional forms of the logit and open-ended WTP models were fitted from which WTP functions were estimated.

Households were asked a DC question followed by an open-ended question regarding the value they placed on the restoration and preservation of Pekapeka Swamp. Out of an initial mail-out of 958 questionnaires, an overall response rate of 46.13% was achieved after two follow-ups. Results from the final usable sample of 231, after removing protests and inconsistent responses, indicate that households in the Hawke's Bay region would pay, on average, between NZ\$30.00 and NZ\$76.89 per annum for five years. Unit value ranges between NZ\$17,898 and NZ\$45,866 per hectare per year; and net present values for the restoration and preservation programme for Pekapeka Swamp based on our 'best estimates' range between NZ\$5.05 million and NZ\$18.20 million depending on the model and discount rate used.

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