

## WHAT DO FARMERS THINK ABOUT WEEDS AND THE AGRICULTURE PROTECTION BOARD IN WESTERN AUSTRALIA?

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*Summary.* The management of many agricultural weeds and pests in Western Australia is the responsibility of the Agriculture Protection Board (APB). Wheatbelt farmers were randomly selected for a survey aimed at collecting systematic, quantitative data and for another aimed at discovering farmers' attitudes and values of the APB and weeds. Weeds were perceived by farmers to be a problem in agricultural areas. Farmers did not think weeds on their properties were a problem but weeds on neighbouring properties concerned them. Respondents had some knowledge of weeds and weed control. The average willingness to pay for the APB's services was around \$1 500 per year. As the farmers had a sufficient understanding of the role and functions of the APB, it may be assumed that this valuation is close to their true estimation.

### INTRODUCTION

In Western Australia the Agriculture Protection Board (APB) is the statutory body responsible for the prevention, eradication or control of certain potentially harmful plants and animals. Due to stringent budgetary requirements in all Government departments, the APB established a small economics research group to evaluate its many control programmes associated with declared species. Results from initial analyses showed there was little economic justification for the level of expenditure on control programmes for some species, mainly because these species had little or no effect on farm production. However, despite the results some farmers expressed a strong desire to maintain the programmes. In this study farmers were consulted so that the APB could gain some understanding of their attitudes and values of the APB and weeds.

### METHODS

Farmers from five shires in each of APB zones, four, seven and eight (the wheatbelt) (Fig.1) were randomly selected for two surveys. The first survey was designed to gather a large amount of systematic quantitative data while the second sought to discover farmers' attitudes and values of the APB, weeds and weed control using the contingent valuation technique. Contingent valuation or consumer "willingness to pay" (WTP) methodologies assess economic evaluations of goods which are not commonly traded on the open market (1). Involved in the preliminary survey were 297 farmers and in the second survey, 126 of the 297 farmers were again approached to gather the extra information required.

### RESULTS AND DISCUSSION

Survey one. Questions were asked to put farmers' attitudes towards weeds into context. Just over 90% thought economic factors to be the most critical farm management problem facing them today. Compared with the economic problem, 80% also believed weeds to be a significant problem. Almost all landholders thought the farming community was concerned about weeds, but only 50% felt the non-farming community was concerned.

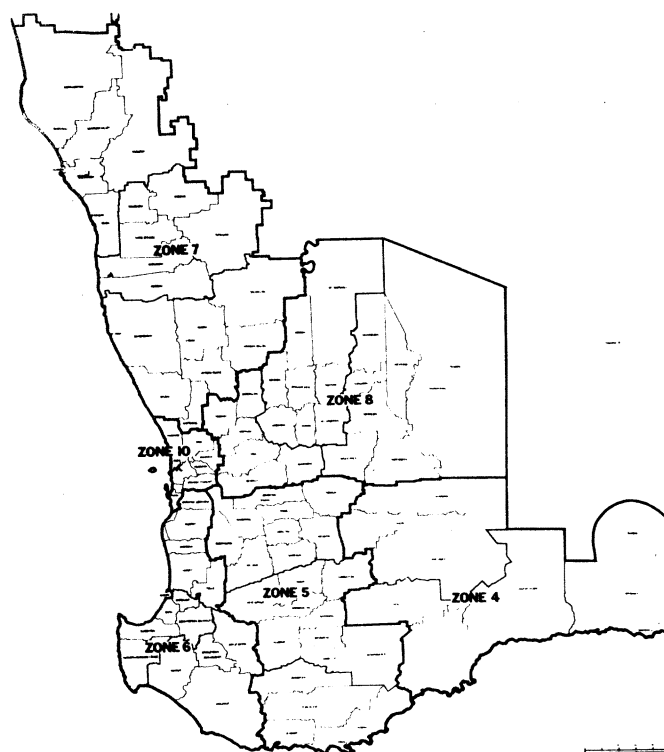


Figure 1. The agricultural zones in Western Australia

Just over half of farmers thought it was their responsibility to prevent and control all weeds on their property. Most farmers sprayed their weeds with few relying on contractors for weed control. On public land the majority thought government bodies should have the responsibility of weeds. Almost 50% of farmers thought the APB should concentrate more in the prevention of new weeds entering the district and state, than controlling weeds already present. Ryegrass and doublegee were considered to be the two most threatening weeds, with Skeleton weed being mentioned by about one quarter of the respondents. Sixty percent of farmers thought no other weeds should be added to the declared plant list. In the absence of the APB, 78% of landholders believed there would be no change in the level of weed infestation on their property. However, 72% believed weed infestation levels on other properties would increase if the APB ceased to exist. Over 95% of respondents considered the skeleton weed levy of \$42.50 per year to be worthwhile. When asked if they would mind paying a higher level, 25% said they would be willing to pay double, 36% said they would pay a little more, while 24% would be unlikely to pay more.

The recommendation for a weed to be declared comes from a shire, a farmers' organization or a Regional Advisory Committee (RAC), through the Zone Control Authority (ZCA). This recommendation then goes to the Board, which may declare the weed. When asked who farmers thought was responsible for having weeds declared, most thought it was the APB or a combination of it and others. Very few mentioned the

ZCA or farmers' organizations. The majority of farmers felt the way weeds were declared at present was satisfactory.

Questions were asked to determine if farmers' comments and attitudes were based on their own experiences. Just over 60% could correctly name their district officer and most farmers had received between one and three visits during the last two years. Around 92% reported some degree of satisfaction with the visit. The APB was well regarded and considered to be effective by almost 80% of the landholders.

The APB supplies a weed information service however, only 13% of respondents approached the APB for advice. The other sought this information from the Department of Agriculture or chemical companies. When asked how the APB could improve its services, 26% of respondents mentioned better public relations while almost the same number thought no further improvements were necessary. Twelve percent suggested the APB required more staff.

Survey two. Part A of the survey aimed to find how respondents felt about various Government services in their district. The results indicated that respondents thought the level of service the APB provides is on par with most of the other major services provided in their region.

Part B of the questionnaire focused on each service offered by the APB. Farmers were asked to indicate its importance and whether they felt the APB was best able to provide that service. Respondents thought the Government could provide the services the most efficiently, except for manufacturing baits and selling herbicides.

In part C respondents were asked how much they would be willing to pay each year to ensure APB services continued at their current level. The question was designed to find a true valuation of the APB and not the level of extra tax a farmer would pay to have the APB's services. Generally farmers treated the question as such, so answers collected should reflect the true value of the APB. Of the 126 farmers, only five did not provide an answer. The values ranged from \$0 to \$5 900 with only 7% suggesting \$0 as an answer. The average willingness to pay was around \$1 500 per year. However, farmers' comments must be considered because they may value the existence of the APB but not approve of some operations conducted by the organization.

Part D involved asking farmers what they would do regarding weed control in the absence of the APB. Most said they would improve their knowledge regarding weed control and just over a quarter said they would intensify weed searches on their property. Two thirds thought they would organize neighbours for searches and just under half thought they would lobby other Government departments to take up the current APB services. Farmers perceived a greater need to organize community activity, in particular their neighbours, to control weeds rather than increase activity on their own property.

Part E was made up of 40 attitudinal statements and nine statements pertaining to the respondents knowledge of weeds and weed control. The 40 attitudinal statements were divided into; attitudes towards the applicability of the user pays principle to APB services; attitudes regarding the credibility of the APB; attitudes relating to the importance of the weeds "problem"; the confidence of the respondents in the willingness to pay estimate they gave; the degree of difficulty the respondent found in giving a valuation answer. Forty percent of respondents showed a positive attitude towards user pays. Only 6% of respondents thought the APB was not credible. Nine percent of respondents did not view weeds as a significant farming problem. Respondents found the valuation exercise to be relatively difficult but had reasonable confidence in their ability to judge their willingness to pay for the APB's services. The landholders in general, appeared to have an average knowledge of weed problems.

To check consistency and to provide an additional dimension to the valuation analysis, respondents were asked to answer yes or no to "whether they thought the services of the APB were worth a certain specified value". This value was varied by increments of \$500 from \$500 to \$2 500, with one figure being randomly assigned to each questionnaire. Of the respondents, 89% gave a consistent answer with the willingness to pay answer they had given previously.

The willingness to pay generated from this research is encouraging as it is supported by the other valuation techniques presented in this paper. Also as the farmers have a reasonable understanding of the role and functions of the APB, it could be assumed that their valuation is close to the true estimation. The significant valuations obtained indicate that farmers could be substantially affected by changes in the level and type of services offered by the APB. As a consequence any evaluation of such policy changes should take these social costs into account.

#### ACKNOWLEDGEMENTS

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#### AUTHORS' NOTE

Subjective Social Indicators (SSI) assess consumers' levels of satisfaction either in attitudinal terms (3) or in the context of assigning hypothetical monetary allocations to services (2). Both this method and the contingent valuation method were used to determine the value of the APB's services and are discussed in "Valuing Agricultural Protection Services: Combining Willingness to Pay and Social Indicator Methodologies" which has been submitted to the Journal of Economic Psychology by the same authors.

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