UTILISING A DECISION SUPPORT SYSTEM TO PRIORITISE VICTORIA’S NOXIOUS WEEDS

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Abstract Resource Conditions can be assessed using a combination of scientific data and expert knowledge. The problem is how to integrate human judgements with quantitative assessment techniques. The Analytical Hierarchy Process (AHP) is a Multiple Criteria Analysis technique which addresses this problem. Complex issues can be broken down into a set of related criteria. This systematic process is a “divide and conquer” approach to problem solving. It is used across many problem domains. By mapping out issues as a set of nested criteria, a decision hierarchy can be developed. The process also allows for relative importance or weight applied to each criteria and group. The DSS is a multi-layered system which rests on a database layer which contains spatial data and tabular data from the departmental corporate database.

Victoria’s Pest Plant Assessment project established a procedure to assess and prioritise any plant on its intrinsic abilities to invade suitable ecosystems and its present and potential impacts on social, environmental or agriculture land use. This procedure utilised the AHP of a Decision Support System.

The assessment procedure is split into three main parts. A scoring system which analyses a plant’s intrinsic invasiveness characteristics, the present distribution and potential distribution (utilising climate modelling programs) which is linked to an geospatial information databases enabling impacts to be estimated on social, environmental or agricultural resource base. A separate economic model will be incorporated into the system which estimates the potential benefit in controlling agricultural weeds. Examples of established, new and emerging weeds and non weeds are displayed in the poster.

Example of the present and predicted potential distribution of Wild Garlic in Victoria.