



SPATIAL INFORMATION DAY 2010

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Spatial Information Day 2010 Abstract

Title: Using GIS to identify potential ecological issues for Windfarms in the Mid-North of South Australia.

Session: 3 – Environmental Management

Presenter: Dr Travis How and Chris Harrison – EBS Ecology

Abstract:

EBS Ecology is an environmental consultancy which has recently undertaken several ecological studies associated with windfarms in the Mid-North of South Australia. The aim of the presentation is to outline the process of undertaking an ecological study associated with windfarm developments and how GIS technologies play a significant role in reviewing, capturing and analysing data to help minimise potential ecological and conservation impacts.

To undertake an ecological assessment of a windfarm site, there are two main stages of research, a desktop review and on-ground field work. The desktop review involves collating existing information to identify potential environmental issues and threatened flora and fauna species. GIS technologies aid this process by enabling existing data (from sources such as the Biological Database of SA) to be overlaid on the proposed study area. Areas and species of interest for targeted field investigations and any potential conflicts with proposed infrastructure locations can be easily identified.

Following a desktop evaluation, field investigations involving the use of GPS, and more recently mobile GIS technology, are undertaken to record and collect site specific data. Mobile GIS has improved the accuracy and efficiency of data capture and reduced the amount of digitising necessary post-survey. The presentation will show how these two technologies are used and the advantages / disadvantages associated with them with respect to ecological surveying.

Ecological attributes captured in the field are then overlaid with the proposed windfarm infrastructure design in the GIS desktop environment for further data / visual analysis and production of digital maps for reporting purposes and planning. Analysis of the data includes buffering proposed infrastructure such as turbine locations, roads and transmission cables, querying data that intersects buffers and calculating the total area to be affected. The ecological significance of areas that intersect or are within a close proximity of a buffer(s) is defined and these areas highlighted either to be avoided or targeted for further investigation. GIS technology can also assist with the design of alternative infrastructure layouts which avoid or minimise the potential impacts to key ecological assets.

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