Economic Values of Conserving Native Vegetation

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The widespread clearance and decline of native vegetation has been identified as one of the major environmental issues facing Australia. Impacts of clearing vegetation include dryland salinity, weed invasion, soil erosion, soil structural decline and loss of species. Development of effective polices to deal with remnant native vegetation (RNV) decline has been hampered by lack of detailed data on the economic benefits and costs of RNV conservation.

There is an expanding body of evidence related to the benefits of native vegetation to both on-farm production and broader catchment values.

Gillespie (2000) has summarised a range of benefits of RNV including:

- benefits for adjoining crops;
- benefits for adjoining pasture;
- benefits for livestock production;
- timber for firewood, fencing and brushwood;
- forestry;
- carbon sequestration;
- increased agriculture production owing to land degradation control – onsite;
- increased agriculture production owing to land degradation control – offsite;
- honey and beeswax production;
- seed collection;
- aesthetics for property, adjoining properties and the region;
- habitat for animals that help control pests;
- tourism and recreation;
- research, education and monitoring;
- food;
- medicinal and perfume resources;
- wildflowers and native plants; and
- other minor uses.

A number of these values are directly measurable, but others are more difficult to quantify.

Native vegetation has a number of benefits for stock production including the actual grazing benefits that stock derive from spending time in remnants as well as increased production arising from enhanced livestock health and pasture production (Gillespie 2000). Over a 5-year trial, a 31% wool production increase and 6 kg (21%) more liveweight was found in sheltered areas compared with sheep without shelter (Gillespie 2000).

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Gillespie (2000) estimates one of the many benefits of trees on crops to be a 22-46% increase in wheat and crop yields in sheltered zones. One of the benefits of trees on pasture growth include a 20-30% higher yield obtained from protected than in unprotected areas of a farm, with annual benefits of $38 to $66 per hectare (Gillespie 2000).

Examples of benefits

Based on a study area near Gunnedah in northern New South Wales a model was developed by Walpole (1999) that incorporates agricultural and environmental attributes to explain pasture productivity. The results indicate that the value of pasture output per farm may be increased by having a certain proportion of pasture area under dry sclerophyll or woodland vegetation. Gross value of pasture output was at its highest level when the proportion of tree area across the farm was at 34%, with no further increases in output being achieved beyond this point. These results suggest that the competitive influences of trees present in the pasture system may begin to outweigh the benefical effects when this proportion of tree area is exceeded. It is encouraging to observe that the 34% value estimated in this study is within the range of values quoted in previous studies, many of which are summarised in Miles *et al*. (1998).

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A recent article in 'The Land' (26/10/00) highlighted the success of Narromine landholder Bruce Maynard in combining native vegetation with his normal agricultural enterprises. Mr Maynard planted 32 hectares of Old Man Saltbush in 1990 as windbreaks between pastures and crops. In the past six years, the combination of alley farming, an advanced sowing technique and cell grazing has helped triple the farm's stocking rate.

How can this information help?

Information combined with estimates of other costs and benefits from the examples given above can be associated with the conservation of remnant vegetation to determine whether such management options are desirable to individual landholders and the broader community. Such information will allow land managers and extension agencies to justify the retention of native woody vegetation in both grazing and cropping enterprises on economic grounds.

References

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