

RES-224-25-0068, Prof D MacDonald, University of Oxford

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Development of a Landscape Intervention Decision Support System (LIDDS) to Maximise Net Social Benefit

This project scoped the possibility of directing agri-environmental work across landscapes to maximise the net environmental benefits of agricultural costs. It considered how to model the reactions of wildlife populations, the probability of participation by landowners, the use of the area by local people, and how that might bias decisions, and how to make changes in biodiversity commensurate with monetary costs.

The changes in agriculture which are ongoing in the UK are shaped in no small part by desires to conserve and replace wildlife threatened by farming over the last 60 years. Agri-environment schemes (AES) have been evolving to meet these needs but have been directed towards assumed public desires. In the coming years, as funding for AES continues to increase, measurements of the relative efficacy of the schemes will be required. Currently indicators of uptake and general trends in bird numbers indicate little about what is being achieved in relation to the cost and don't allow a comparison of successes between schemes in time or space. The research in this project provides a grounding for the development of indicators which would allow the UK to critically assess its agri-environmental activity.

The project laid the groundwork for investigating what the public wants from agri-environment initiatives and how to measure their benefits. The research considered the activities of some of those people living in and around AES. It found that many did not regularly leave the towns and villages, nor did they express a preference as to where agri-environment schemes should be carried out. They nevertheless valued it highly, regardless of direct use. The research also considered how to value small changes in wildlife population traded against agricultural costs. Through a mixture of economics and ecology the project produced a method for achieving this. It concluded that that directed landscape scale ecological work may be more cost effective than the more passive approach which is favoured currently.

Findings of the research have been presented to a local wildlife trust, FWAG, the Environment Agency, English Nature, DEFRA, Butterfly Conservation, Oxfordshire County Council, Thames Valley Environmental Records, RSPB, Game Conservancy Trust, Ponds Conservancy Trust, Tubney Charitable Trust, Peoples Trust for Endangered Species and Mammals Trust UK.