

Appendix 1

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Presentation abstract:

Arresting woodland bird decline in Australian agricultural landscapes: potential application of the European agri-environment model

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Introduction

Temperate Australia's wheat/sheep zone and much of Western Europe have both experienced dramatic declines in native bird populations associated with agricultural landscapes, with many species exhibiting range contractions and greatly reduced abundance (Ford *et al.* 2001; Donald *et al.* 2002). We present a comparison of European farmland and Australian woodland bird declines and a critique of the recent strategies for addressing declines. Finally we offer an evaluation of the European agri-environment model, as represented by England's Environmental Stewardship scheme, as a potential policy mechanism for delivering targeted on-farm management for declining Australian woodland birds and their habitat through providing financial incentives and support to participating landholders.

Context

In both Australia and Europe, recent bird diversity declines in agricultural landscapes have been attributed to a loss of habitat heterogeneity, resulting from moves towards broadscale agriculture and homogenous management. However, there are at least two key differences in the nature and cause of declines in the two regions. The declining species at threat in Australian agricultural regions are largely woodland specialists, whereas in Europe they are species dependent upon centuries-old traditional management of semi-natural habitats. The former depend upon natural systems of mid to late successional stages; the latter upon intermediate levels of intervention indicative of early to mid successional stages (Sutherland 2004).

The distinction is largely due to differing land use histories of these regions. In Western Europe, large areas of indigenous vegetation were converted to farmland over a long time-period, dating from prehistoric times (Donald *et al.* 2002); many species have either adapted to the changes or followed the gradual spread of agriculture from open habitats. In Australia, the conversion to farmland is recent, ongoing and rapid, leaving scant opportunity for woodland species to adapt to the new, more open environments.

Current conservation models

Biodiversity decline is engendering widespread scientific and government concern in both regions. Increasing recognition of the problem is evidenced by recent changes in land use policy, including a shift from production subsidies to agri-environmental payments in Europe (Donald *et al.* 2002) and the introduction of legislation to police land-clearing in Australia.

While Australia's conservation efforts have historically focused on the establishment of conservation reserves, there is increasing pressure to address biodiversity conservation priorities on private lands. Approaches have to date centred on one-off, short-term schemes, administered through a wide variety of government and non-government organisations and often relying on voluntary landholder involvement. Payments are generally one-off leveraged contributions towards the direct financial cost of the capital works (landholders are often expected to make an in-kind contribution to the work). Whilst this demonstrates landholder willingness to undertake environmentally beneficial activities on their land, there are ample indications that many are unable to do so for lack of financial resources (Cocklin *et al.* 2006).

These issues have been addressed to a considerable extent by the European model of agri-environmental payments. In England, the Environmental Stewardship (ES) scheme is national government managed and regionally delivered by one dedicated agency, Natural England. One of the explicit, underpinning objectives of the scheme is biodiversity conservation, with the stated target of "reversing the long-term decline in the number of farmland birds by 2020" (Gregory *et al.* 2004). Payments consist of both one-off reimbursement for capital works and ongoing 'income-foregone' payments for the loss of intensive production land to more extensive practices.

Economically the stewardship model offers ten-year management agreements and allows for much greater ongoing financial support for landholders. Organisationally it has a dedicated agency and trained staff to administer, advise and police. Ecologically it has targeted management options developed by ecological authorities, ongoing consultation with external experts and organisations and specifically designed monitoring protocols.

Stewardship in Australia?

Vickery *et al.* (2004) state that agri-environment schemes may represent the only currently available mechanism to reduce declines in farmland biodiversity over large areas. As such, the ES model may appear an appropriate model for achieving Australia's environmental goals.

However, agri-environment schemes operate at enormous cost and, in the European case, are potentially vulnerable to changes in EU funding and WTO regulation. There is also considerable discussion as to whether such schemes actually deliver the biodiversity benefits that they purport to (Kleijn and Sutherland 2003).

The applicability of the model to the unique environments of Australia is a matter for debate. It is nevertheless clear that many of the mechanisms of bird decline in agricultural landscapes could be addressed by the development of a highly targeted, well-designed, economically robust and nationally consistent scheme that addressed matrix management and large-scale habitat restoration as well as remnant protection and provided significant and ongoing support to facilitate land holder adoption.

References

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