Science, Technology, Research & Innovation for the Environment
STRIVE

SUMMARY OF FINDINGS

STRIVE Report No. 21

AG-BIOTA – Monitoring, Functional Significance and Management for the Maintenance and Economic Utilisation of Biodiversity in the Intensively Farmed Landscape

Authors: G. Purvis et al University College Dublin

Lead organisation: University College Dublin

This integrated study, informally known as the 'Ag-Biota' Project, was funded as a 5-year 'capability development' project, to develop capacity and expertise in biodiversity research within the context of agriculture.

Key Points

- The project identified four key bio-indicator groups for assessment of the impacts of agriculture on wider biodiversity.
- Parasitoid wasps, which are important in natural pest regulation, were identified by the research as strong indicators of wider biodiversity and ecological change in agricultural grasslands.
- Bumblebees, which have importance as pollinators are shown to have undergone significant decline over recent decades.
- The richness and diversity of bird species during the breeding season is strongly linked to the ecological quality of Irish hedgerows.
- Breeding bird populations within field boundaries area significantly greater on dairy farms compared with non-dairy farms.
- Project's work also suggests that the increased grassland management intensity associated with dairy farming is not necessarily always "bad" for all aspects of biodiversity.
- Aspects of farm management and condition can be used as surrogate indicators for the likely change in the status of biological populations within farmland. This insight has informed wider EU-funded research for agri-environmental policy evaluation.

- Increased inorganic fertiliser use causes decreased efficiency of soil nitrogen utilisation and decreased efficacy of atmospheric nitrogen fixation by white clover in pastures.
- The pasture ecosystem is critically dependant on earthworm populations to ameliorate the impact of high stocking rates on soil structure.
- An investigative tool was developed that will continue to be of use in further studies of the ecology of the barley yellow dwarf virus (BYDV) and its vectors in the field.
- The project has made a significant contribution towards Ireland's obligations under the Convention of Biological Diversity (CBD), and subsequent agreement by EU member states to halt the loss of biodiversity by 2010.
- The results will help guide the development of agri-environmental policy that will promote the very significant role of farmers as custodians and managers of our wider countryside.

For Further Information

Contact Gordon Purvis (School of Biology and Environmental Science, Agriculture and Food Science Centre, University College Dublin - gordon.purvis@ucd.ie)

The AgBiota Synthesis Report (STRIVE Report 21) is available from: http://www.epa.ie/downloads/pubs/research/biodiversity/name,25805,en.html and the

End of Project Report from: http://erc.epa.ie/safer/iso19115/display?isoID=108#files.