Symposium Presentation No. 2

# *Insects in fragmented farming landscapes*

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With insects declining around the world, studies on the effects of habitat loss and fragmentation in agricultural landscapes provide an explanation for the decline and suggest implications for restoration.

## Summary

*Insects are in decline around the world and agricultural practices are a major factor in this decline. This talk reported the results of several case studies of beetles in particular. These studies in fragmented landscapes showed that different communities of beetles live in different elements of the landscape and that the characteristics of species determines which elements they use. Many species were abundant in paddocks and other high nutrient sites, but some species were confined to remnant native vegetation and others were dependent on remnants for part of their life cycle. In pine plantations and adjacent remnants, the beetle community was just a small subset of the original beetle community in the area. In cropping areas, the high abundance of beetles in cropland declined after cropping except where woody mulch was used to add habitat after cropping. In the older Buttongrass landscape, the interaction between dispersal ability and competitive ability or predatory interactions influenced the species composition in the different elements in that landscape. Finally, a study of insectivores in Africa showed a significant change in the dynamics of invertebrates leading to plant mortality. These studies suggest that the changes can have a cascade of effects on ecosystems that may locked them into a state that could be hard to restore and transform.*