

Habitat heterogeneity and consequences for insect biodiversity

The focus of Adam Vanbergen's work is understanding links between biodiversity and ecosystem functioning, one of the pieces of the puzzle (interdisciplinary challenge) that is needed to measure and value the services provided by ecosystems. Through two examples of how human activities can affect both insect diversity and trophic interactions, it was shown how important are ecological studies in order to understand how biodiversity behaves and hence how important are the relationships with the environment. Several interesting questions came up regarding the nature of the project on how landscape-scale heterogeneity can influence the diversity of beetles. It was highlighted the importance of intensity of insect activity and noticed that it was not considered in the project. Adam argued that although the variable might change the insect diversity, it was not significantly important for the scope of the project. Another discussed point was the problem of clumping all the species into trophic levels. In general, the carabid species used in this project are generalists, so allocating them into trophic level was not a problem. The conclusions of this part of the talk were that there is a strong signal of landscape structure in insect diversity. Furthermore, diverse landscapes increase the availability of seed resources for granivorous species and leads to changes on bird composition. The second part of the lecture was focused on how the introduction of cattle into woodlands can produce an alteration in plant communities and modify a host-parasitic relationship. The results presented showed that parasite rates are positively affected by increasing in floral diversity arising from cattle introduction. The remarked and overall conclusion was that environmental heterogeneity has to be considered when assessing how humans activities affect diversity and species interactions. Then it is important to carefully consider ecology when evaluating ecosystem services as we need to understand redundancy in communities and assess the key environmental factors influencing the provision of services.

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