

APPENDIX 4. Summary of Species and Allelic Richness Journal Articles

Allelic richness – habitat

- Scribner et al. 2001
 - *Bufo bufo* allelic richness was negatively association with gardens within 100m of breeding pond (measure of human presence), negatively associated with roads within 1km, and negatively associated with sheep pastures within 1km

Allelic richness – area and/or isolation

- Struebig et al. 2011
 - Sensitive bat species (*Kerivoula papillosa*) was positively associated with area

Allelic richness – no effect of habitat, area, or isolation

- Lindsay et al. 2008
 - No difference in allelic richness of golden-cheeked warblers among sample sites - no apparent effect of percent forest, percent agriculture, percent developed lands and the connectivity of forest patches between sites
- Banks et al. 2005
 - No difference in allelic richness of the agile antechinus (a carnivorous marsupial) among fragmented versus unfragmented patches, no effect of patch size, no effect of isolation

Species richness – habitat

- Steffan-Dewenter 2003
 - Species richness of natural enemies of trap-nesting bees and wasps (26 species of natural enemies from nine different families, primarily from parasitic Hymenoptera of the families Chrysididae, Ichneumonidae, Gasteruptionidae, Eulophidae, Encyrtidae, and Sapygidae, but some Diptera and Coleoptera) was positively associated with landscape diversity
 - Species richness of eumenid wasps was negatively associated with landscape diversity
- Hamer et al. 2006
 - Grassland bird species richness was negatively associated with grassland edge density, negatively associated with non-natural habitat area, negatively associated with the density of edge associated with intensive land uses, and positively associated with prey diversity (grasshopper diversity)

Species richness – area and/or isolation

- Struebig et al. 2011
 - Tropical forest bat species richness was positively associated with forest area
- Steffan-Dewenter 2003
 - Total species richness of bees, wasps, and natural enemies (other insects) was positively associated with area and **negatively** associated with connectivity
 - Species richness of natural enemies of bees and wasps was positively associated with area
 - Species richness of bees was positively was associated with area

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- Species richness of eumenid wasps was positively associated with area and **negatively** associated with connectivity
- Krauss et al. 2004
 - Calcareous grass species richness (specialists and generalists) was positively associated with area
- Hamer et al. 2006
 - Grassland bird species richness was positively associated with grassland area and negatively associated with isolation (greater richness in patches with lower mean nearest neighbor distances among grassland patches)

Species richness – no effect of habitat, area, or isolation

- Steffan-Dewenter 2003
 - No relationship between species richness of sphecid wasps and any predictor variables (area, connectivity, or landscape diversity)

Banks, S., Finlayson, G., Lawson, S., Lindenmayer, D., Paetkau, D., Ward, S., & Taylor, A. (2005). The effects of habitat fragmentation due to forestry plantation establishment on the demography and genetic variation of a marsupial carnivore, *Antechinus agilis*. *Biological conservation*, 122(4), 581-597.

Hamer, T. L., Flather, C. H., & Noon, B. R. (2006). Factors associated with grassland bird species richness: the relative roles of grassland area, landscape structure, and prey. *Landscape Ecology*, 21(4), 569-583.

Krauss, J., Klein, A.-M., Steffan-Dewenter, I., & Tschardtke, T. (2004). Effects of habitat area, isolation, and landscape diversity on plant species richness of calcareous grasslands. *Biodiversity and Conservation*, 13(8), 1427-1439.

Lindsay, D. L., Barr, K. R., Lance, R. F., Tweddale, S. A., Hayden, T. J., & Leberg, P. L. (2008). Habitat fragmentation and genetic diversity of an endangered, migratory songbird, the golden-cheeked warbler (*Dendroica chrysoparia*). *Molecular Ecology*, 17(9), 2122-2133.

Scribner, K. T., Arntzen, J., Cruddace, N., Oldham, R., & Burke, T. (2001). Environmental correlates of toad abundance and population genetic diversity. *Biological conservation*, 98(2), 201-210.

Steffan-Dewenter, I. (2003). Importance of habitat area and landscape context for species richness of bees and wasps in fragmented orchard meadows. *Conservation Biology*, 17(4), 1036-1044.

Struebig, M. J., Kingston, T., Petit, E. J., Le Comber, S. C., Zubaid, A., Mohd-Adnan, A., & Rossiter, S. J. (2011). Parallel declines in species and genetic diversity in tropical forest fragments. *Ecology letters*, 14(6), 582-590.