

Annotated bibliography: Secondary seed dispersal

Mike Faden

Agosti D., J. Majer, E. Alonso, and T.R. Schultz (Eds.). 2000. *Ants: Standard methods for measuring and monitoring biodiversity*. 2000. Smithsonian Institution Press, Washington. 280pp. Mainly a manual for ant researchers, but also includes tables listing basic information about ant genera worldwide.

Andresen, E. 2001. Effects of dung presence, dung amount and secondary dispersal by dung beetles on the fate of *Micropholis guyanensis* (Sapotaceae) seeds in Central Amazonia. *Journal of Tropical Ecology* 16:61-78. Interesting study. Author concluded that accidental burial by dung beetles increased chances of seed survival, but beetles often buried seeds too deeply.

Bohning-Gaese K., B.H. Gaese, S.B. Rabemanantsoa. 1999. Importance of primary and secondary seed dispersal in the Malagasy tree *Commiphora guillaumini*. *Ecology* 80(3): 821-832. Dispersal by birds and ants respectively. Worthwhile.

Clifford H.T. and G.B. Monteith. 1989. A Three Phase Seed Dispersal Mechanism in Australian Quinine Bush. The three phases are dispersal by Emus, explosive fruits and ants respectively. Natural history information only, no quantitative analysis.

Feer, F. 1999. Effects of dung beetles (Scarabaeidae) on seeds dispersed by howler monkeys (*Alouatta seniculus*) in the French Guianan rain forest. *Journal of Tropical Ecology* 15:129-142. I preferred the Andresen paper (see above).

Harms, K.E., S.J. Wright, O. Calderon, A. Hernandez and E.A. Herre. 2000. Pervasive density-dependent recruitment enhances seedling diversity in a tropical forest. *Nature* 404: 493-495. The statistical analysis used to reach this conclusion is flawed, according to Ed Connor.

Huxley, C.R., and Cutler, D.F (Eds.) 1991. *Ant-Plant Interactions*. Oxford University Press, New York. 601pp. Based on presentations from 1989 symposium held by Linnean Society and Oxford University. Includes sections emphasizing major role of seed dispersal by ants in dry areas of Australia and South Africa.

Levey D.J. and M.M. Byrne. 1993. Complex ant-plant interactions: Rain forest ants as secondary dispersers and post-dispersal seed predators. *Ecology* 74(6): 1802-1812. Interesting study that provides more information than most about the complexities of seed dispersal by ants.

Longland, W.S., S.H. Jenkins, S.B. Vander Wall, J.A. Veech, S. Pyare. 2001. Seedling recruitment in *Oryzopsis hymenoides*: Are desert granivores mutualists or predators? *Ecology* 82(11) 3131-3148. Describes large manipulative experiment examining effect of

scatterhoarding rodents and harvester ants on reproduction of a grass that is widespread in Western deserts. Few other studies compare effects of different secondary dispersers. Authors are best known for working on rodents. Concludes that rodents determine seedling recruitment patterns, while seeds harvested by ants seldom become seedlings.

MacMahon J.A., J.F. Mull, T.O. Crist. Harvester Ants (*Pogonomyrmex* spp.): Their community and ecosystem influences. 2000. Annual Review of Ecology and Systematics 31:265-291. Includes small section on seed dispersal.

Murray, D.R. (Ed.). Seed dispersal. 1986. Academic Press, Sydney; Orlando. 322pp. Chapters by various authors covering topics including dispersal by different agents, and evolution of dispersal syndromes. Includes seed fate diagrams.

Nogales M., V. Quilis, F.M. Medina, J.L. Mora and L.S. Trigo. 2002. Are predatory birds effective secondary seed dispersers? Biological Journal of the Linnaean Society 75: 345-352. A entertaining look at an unusual form of secondary dispersal: carnivorous birds regurgitating pellets containing viable seeds eaten by their prey. Authors suggest cautiously that long gut retention times could result in long-distance dispersal.

Passos L. and P.S. Oliveira. 2002. Ants affect the distribution and performance of seedlings of *Clusia criuva*, a primarily bird-dispersed rain forest tree. Journal of Ecology 90: 517-528. An example of how simple experiments can be used to build up a seed fate diagram.

Vander Wall, S.B. 1990. Food Hoarding in Animals. University of Chicago Press, Chicago, Ill. 445pp. Very broad, detailed and useful introduction to food-hoarding behavior, including its effects on seed dispersal. Includes discussion of scatterhoarding theory current at the time of writing.

Wang, B.C. and T.B. Smith. 2002. Closing the seed dispersal loop. Trends in Ecology and Evolution 17: 379-385. A review (not exhaustive) highlighting recent work and techniques that link seed dispersal to plant recruitment and vegetation structure.

Wenny D.G. 1999. Two-stage dispersal of *Guarea glabra* and *G-kunthiana* (Meliaceae) in Monteverde, Costa Rica. Journal of Tropical Ecology 15:481-496. Useful for its attempt to examine several steps and possible fates of seeds of these rain-forest trees.