



## Ecosystem services — bats, birds and minibeasts

Biodiversity provides a number of ecosystem services free of charge that can save on costs of production and development of on-farm activities by maintaining the broader environment in which agricultural enterprises operate. We have long understood the importance of the services which nature provides, but only recently has research been undertaken to fully quantify their contribution to agricultural enterprises.

### What roles do bats, birds and minibeasts play in a production system?

| BATS                                |  |
|-------------------------------------|--|
| Microbats - Primarily insect eaters | Most microbats eat 50% or more of their own body weight in insects every night<br>1000 x 10g bats can eat 5kg or more of insects per night |
| Megabats - Nectar & pollen eaters   | Grey-headed and little red flying foxes are primary pollinators of hardwood eucalypt forests   |

| BIRDS                    |   |
|--------------------------|---|
| Insect eaters            | Forage for grubs, beetles and flies in crops ( <i>e.g. Magpies, crows, blue wrens</i> )                                       |
|                          | Eat sap-sucking and leaf-eating bugs that are a major cause of dieback in rural trees ( <i>e.g. pardalotes, honeyeaters</i> ) |
|                          | Control insect pest in native pasture ( <i>e.g. ibis, robins, song larks</i> )  |
| Nectar and pollen eaters | Pollinate native trees and shrubs ( <i>e.g. honey eaters</i> )  |
| Seed eaters              | Spread seeds of pasture grasses ( <i>e.g. finches, quails</i> )   |
|                          | Disperse seeds of native trees and shrubs ( <i>e.g. figbirds, silvereyes</i> )  |
| Raptors (birds of prey)  | Control insect pests of pasture and crops, such as locusts ( <i>e.g. black-shouldered kite, kestrel</i> )                     |
|                          | Control vertebrate pests, such as mice ( <i>e.g. spotted harrier, barn owl</i> )  |

| MINIBEASTS                      |   |
|---------------------------------|---|
| Insects and other invertebrates | Pollinate crop and pasture plants ( <i>e.g. native bees and butterflies</i> )               |
|                                 | Control insect pests of crops ( <i>e.g. beetles, spiders, ants</i> )                        |
|                                 | Recycle nutrients in the soil ( <i>e.g. dung beetles, termites</i> )                        |
|                                 | Improve water infiltration and soil retention ( <i>e.g. earthworms, burrowing beetles</i> ) |



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