Get a helping hand - Ecological Support Species

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Learning from Nature

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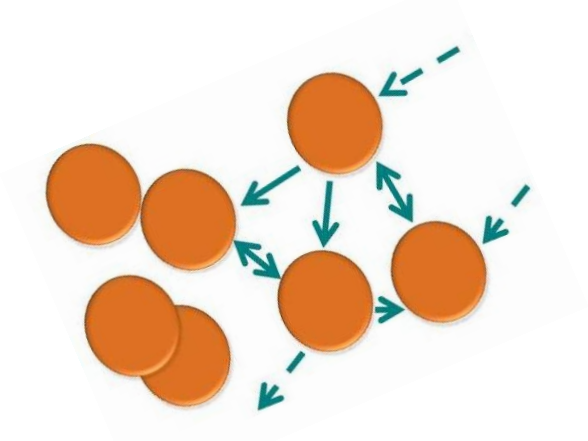
Ecological support species

Creating biodiversity is useful, but choosing species specifically because they provide beneficial connections - functional biodiversity – will give you more of a helping hand.

Ecological support species are a terrific ‘tactical’ tool for creating functional biodiversity in your farm and garden.

It's the connections that count!



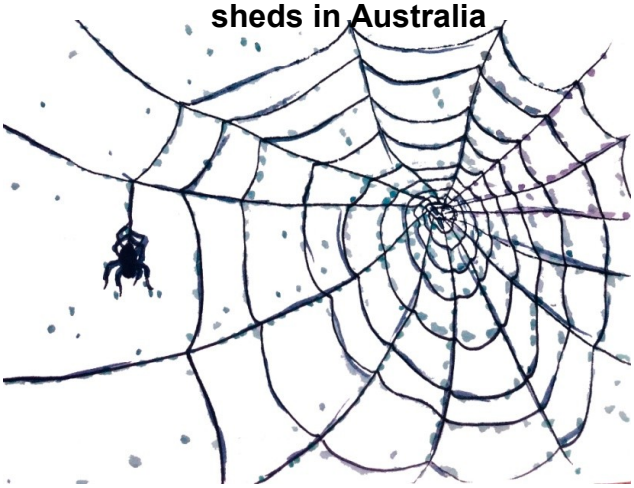
Use ecological support species to solve specific resource issues such as compacted soil, nitrogen deficiencies, inadequate pollination and pest problems.

Insectary plants are a great example

These plants provide a feast of pollen and nectar for pollinators and attract beneficial insects and birds - the natural enemies of insect pests.

Growing insectary plants *within* your vegetable garden and the production areas on your farm is essential to create pest-resistant landscapes and ensure high rates of pollination.

Insectary and ‘sacrificial’ plants growing in and around hydroponic sheds in Australia



Discover how to use other connection building tools in the Learning from Nature ‘Eco-logical Farming Handbook’

Recommended types of ecological support species

ECOLOGICAL SUPPORT SPECIES	FUNCTIONAL CONNECTIONS – SOIL BUILDERS
NITROGEN-FIXING BACTERIA	Grow legumes and other species with nitrogen-fixing bacteria to increase nitrogen levels in soil. Plant before and alongside crops with high nitrogen requirements. A good cover of nitrogen-fixing plants can add 90 – 130 kg of nitrogen/acre. Healthy soil supports more free-living nitrogen-fixing bacteria.
NUTRIENT ACCUMULATORS	Grow plants skilled at accumulating nutrients, particularly phosphate and micronutrients. Only a few plants are known to have this skill, but there will be many others. More research is needed.
BIOMASS ACCUMULATING PLANTS	Grow fast-growing big-leaved trees, shrubs and ground covers to quickly protect bare soil and produce heaps of easily digestible biomass. Woody biomass increases populations of fungi in soil, to benefit tree crops.
DEEP-ROOTED PLANTS	Deep-rooted plants help de-compact soil and return leached nutrients to the surface. They are drought-tolerant - able to tap into deep reservoirs of water in the soil. Some 'weeds' fulfil this role.
MYCORRHIZAL FUNGI	Increase mycorrhizal fungi in your soil: - Grow strongly mycorrhizal plants like oats and sunflowers. - Grow living roots for as much of the year as possible to maintain the fungi populations. When the common fungi (Arbuscular Mycorrhiza) on our farms die out, new spores don't readily spread by wind or water. Usually, they spread root to root. - Use zero till and zero applications of broad-spectrum fungicides.
GRAZING AND BROWSING ANIMALS	Use holistic planned grazing and browsing to mimic wild herbivore foraging behaviour. Your soil ecosystem will get a nutrient boost from the fertiliser packs stuffed with effective microbes and trampled vegetation.

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ECOLOGICAL SUPPORT SPECIES	FUNCTIONAL CONNECTIONS – BIODIVERSITY THAT WORKS
PROVIDE FOOD AND HABITAT FOR BENEFICIAL INSECTS AND BIRDS	Grow insectary plants to provide nectar and pollen for your pollinators and the predators and parasites of insect pests. Use a wide variety of plants to supply food for as much of the year as possible. Grow insectary plants within production areas as beneficial insects *generally* travel only 50 – 70 m away from suitable habitat.
SACRIFICIAL PLANTS	Use sacrificial plants to attract insect and vertebrate pests away from your crops, and into areas where you can monitor and control their populations.
COMPANION PLANTS	Companion plants are often used to deter pests, provide physical support for other plants to grow, improve growth, flavour, etc.. Unfortunately, research is sometimes lacking to validate claims about the benefits of some plants. So check first.
NATIVE PLANTS	In general, native plants provide food and shelter for a greater diversity of insects, birds, etc., than exotic plants.
BIRD ATTRACTORS	Regenerating native vegetation or working with succession? Use trees producing flowers, fruit and seeds to attract birds. Preferably trees with wide-spreading branches, so the birds have places to perch and leave behind fertiliser pellets filled with seeds.

ECOLOGICAL SUPPORT SPECIES	FUNCTIONAL CONNECTIONS – IMPROVING MICROCLIMATES
FAST-GROWING SHADE PRODUCING TREES AND SHRUBS	Quickly reduce temperature extremes and evaporation using fast-growing shade producing trees and shrubs. These trees can also reduce hail damage. Bonus –shade helps reduce competitive grasses, weeds, and other undesirable vegetation.
WINDBREAKS	Windbreaks reduce the impact of dry, hot and cold winds, and water loss through evaporation. Use hedges, alley cropping, trees and shrubs along the boundaries etc. Good design is crucial.
FROST PROTECTORS	Grow long grass and other dense vegetation slightly off contour to divert cold air from draining into frost pockets.

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