Smart Farming For Healthy Bees

BEE FRIENDLY LAND MANAGEMENT

REGION - GISBORNE AND HAWKES BAY October 2009

Photo: Richard Toft © Landcare Research

Honey bee on Five Finger *(Pseudopanax arboreus)*

STRONG AND HEALTHY BEES ARE A CRITICAL PART OF PROFITABLE AGRICULTURE

To ensure the future of farming, all farmers need to play their part in protecting the honey bee. The bee is one of the hardest workers in horticulture and agriculture; about $3 billion of our GDP is directly attributable to the intensive pollination of horticultural and specialty agricultural crops by bees. In addition there is a huge indirect contribution through the pollination of clover, sown as a nitrogen regeneration source for the land we farm. This benefit flows on to our meat export industry through livestock production and sales.

The beekeeping industry is facing some of its biggest challenges with increasing bee pests and diseases. This is of great concern because, in terms of the food we eat, about a third of the calories and three-quarters of the diversity rely on bees for pollination.

The most important issue leading to a bee crisis in NZ is declining floral resources and the subsequent scarcity of quality pollen, which leads to bee malnutrition. The key to good bee health is a continual supply of diverse pollen and nectar from natural sources.

Bees consume pollen as a protein and vitamin source and nectar for energy. While gathering these resources, they move pollen from one plant to another thus benefiting the farm by pollinating crops. Availability of quality pollen resources is critical during spring when beekeepers are building up bee populations for pollination services. Any shortfall leads to protein stress that weakens bees making them more susceptible to diseases and pests (e.g., varroa mite); it also dramatically slows the queens breeding output and this results in low field strength and under-performing pollination services.

Today, farmers can reverse this trend by choosing bee friendly trees and shrubs for planting in waterway margins, windbreaks, field edges, under pivots and along roadsides. Fortunately a number of shelter and erosion control plants have abundant flowers to feed bees so selecting multi-purpose plants is smart farming for healthy bees.

This fact sheet will help you provide pollen that these vital creatures need. To find out where to source the plants on this list please go to www.plantfinder.co.nz or ask at your local nursery.

FEDERATED FARMERS OF NEW ZEALAND

Federated Farmers of New Zealand
T: 04 473 7269 or 0800 327 646
F: 04 473 1081
E: mail@fedfarm.org.nz
www.fedfarm.org.nz

www.fedfarm.org.nz/ourcampaigns

LEGEND: Common Name (*Scientific name*) --- Life form, Maximum height in metres, Months of flowering

Native Trees and Shrubs for Bees

Native plants are the best choice to increase "on-farm" native biodiversity and benefit both the honey bee and the environment.

Cabbage tree (*Cordyline australis*) --- Tree, 15m, Oct-Dec
Five-finger (*Pseudopanax arboreus*) --- Tree, 8m, Jun-Aug
Hinau (*Elaeocarpus dentatus*) --- Tree, 20m, Oct-Feb
Kāmahi (*Weinmannia racemosa*) --- Tree, 20m, Dec-Jan
Kānuka (*Kunzea ericoides*) --- Tree/Shrub, 15m, Sep-Feb
Karo (*Pittosporum ralphii*) --- Shrub, 4m, Sep-Dec-(Jun)
Karo (*Pittosporum crassifolium*) --- Tree/Shrub, 9m, Sep-Dec
Kohuhu (*Pittosporum tenuifolium*) --- Tree, 6m, Oct-Nov
Koromiko (*Hebe stricta*) --- Shrub, 4m
Lacebark (*Hoheria populnea*) --- Tree, 10m, Mar-Apr-(Jun)
Lemonwood (*Pittosporum eugenioides*) --- Tree, 10m, Oct-Dec
Manuka (*Leptospermum scoparium*) --- Tree/Shrub, 5m, Sep-Mar
Mingimingi (*Leucopogon fasciculatus*) --- Shrub, 5m, Sep-Nov
Mountain wineberry (*Aristotelia fruticosa*) - Tree, 2.5m, Oct-Dec
Narrow-lv lacebark (*Hoheria angustifolia*) --- Tree, 10m, Dec-Mar
Ngaio (*Myoporum laetum*) --- Tree/Shrub, 10m, Jul-Apr
Nikau palm (*Rhopalostylis sapida*) --- Tree, 15m, Nov-Apr
North Island broom (*Carmichaelia australis*) --- Shrub, 2m, Oct-Feb
North Island kowhai (*Sophora tetraptera*) --- Tree, 12m
Northern rata (*Metrosideros robusta*) --- Tree, 25m, Nov-Jan
NZ flax (*Phormium tenax*) --- Tufted, up to 5m flw stalk, Nov-Dec
Pohutukawa (*Metrosideros excelsa*) --- Tree, 20m, Dec-Jan
Prickly mingimingi (*Leptecophylla juniperina*) --- Shrub, 2m
Rewarewa (*Knightia excelsa*) --- Tree, 30m, Oct-Dec
Sth Rata (*Metrosideros umbellata*) --- Tree, 15m, Nov-Jan-(Mar)
Tāwari (*Ixerba brexioides*) --- Tree, 10m, Nov-Jan
Three-finger (*Pseudopanax colensoi*) --- Tree/Shrub, 5m, Oct-Mar
Titoki (*Alectryon excelsus*) --- Tree, 10m, Oct-Dec
Tree fuchsia (*Fuchsia excorticata*) --- Tree/Shrub, 12m, Jun-Jan
Weeping kowhai (*Sophora microphylla*) --- Tree, 10m

Non-native Trees and Shrubs for Bees

Exotic plants are good choices because many are multi-purpose for farming and have excellent pollen and nectar.

Apple (*Malus ×domestica*) --- Tree, Sep-Nov
Blue gum (*Eucalyptus globulus*) --- Tree, 40m, Aug-Nov
Peach (*Prunus persica*) --- Tree, Aug-Oct
Pear (*Pyrus communis*) --- Tree, Sep-Oct
Red-flowering gum (Corymbia *ficifolia*) --- Tree, 10m, Dec-Feb
Rosemary (*Rosmarinus officinalis*) --- Shrub, 1.5m, Sep-Nov
Silver dollar gum (*Eucalyptus cinerea*) --- Tree, 15m, Dec-Feb
Tree lucerne (*Chamaecytisus palmensis*) --- Tree, 5m, May-Oct
Weeping willow (*Salix babylonica*) --- Tree, 25m, Aug-Sep
White ironbark (*Eucalyptus leucoxylon*) --- Tree, 30m, Mar-Nov

To match plants to your site, consult a plant adviser, e.g. Te Totara Nursery *Phone: 06 838 6614; Email: tetotara@slingshot.co.nz*

The plants listed above are examples of good Bee Plants that are not on any list of pest plants (weeds) for Gisborne and Hawke'sBay. See our website for further examples and guidelines. Although some plants are good for bees they are on pest plant lists because they are invasive. Planting them would be detrimental to farmers or to the environment and in some cases even illegal (e.g., Unwanted Organisms list). Lists of pest plants change regularly so it is best to consult your regional authorities.

1 **Gisborne and Hawke's Bay Regional Pest Management Strategies are** at http://www.biosecurityperformance.maf.govt.nz/
Plants listed in the strategy must not be planted for various reasons. For advice in your area, contact Gisborne District Council Ph: 06 867 2049 www.gdc.govt.nz, service@gdc.govt.nz or Hawke's Bay Regional Council Ph: 06 835 9300, www.hbrc.govt.nz; info@hbrc.govt.nz.
For example do not plant:
Barberry (*Berberis glaucocarpa*) ---Shrub
Blackberry (*Rubus fruticosus*) --- Shrub
Buddleja (*Buddleja davidii*) --- Shrub
Gorse (*Ulex europaeus*) --- Shrub
Hawthorn (*Crataegus monogyna*) --- Tree/Shrub
Privet (*Ligustrum sinense*) -- Shrub
Scotch broom (*Cytisus scoparius*) --- Shrub

2 **The National Pest Plant Accord** (NPPA) is listed at www.biosecurity.govt.nz/nppa.
Plants listed on the NPPA are unwanted organisms under the Biosecurity Act 1993 and cannot be sold, propagated or distributed even though some are high value bee plants
For example do not plant:
Crack willow (*Salix fragilis*) --- Tree
Grey willow (*Salix cinerea*) --- Tree/Shrub
Lantana (*Lantana camara*) --- Shrub
Scottish heather (*Calluna vulgaris*) --- Shrub

3 **The Department of Conservation (DOC) Weed List** contains around 20 high value bee plants that are aggressive environmental weeds. To protect the environment, please consult a DOC weed expert for your situation www.doc.govt.nz/conservation/threats-and-mpacts/weeds/docs-weed-work/

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