B-spatial™: Future-proofing bee hive site selection

B-spatial™ is a spatial decision support tool to help beekeepers select suitable apiary sites in a changing environment.

Honey bee health and honey production depend on colony access to quality and abundant floral food - the pollen and nectar produced by flowers when attracting pollinators.

Australia's mild weather, large tracts of wild forest, woodlands and spring wildflower bloom are key to our successful beekeeping industry. However, Australian flowering events are often short lived (often only two to three weeks long) and are not a regular annual event, especially for flowering trees.
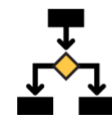
Understanding when and where flowering is likely to occur is vital for Australian beekeepers when selecting hive locations. Finding suitable sites is becoming more difficult as the landscape and flowering events adjust to shifts in the climate, land-use change loss and the impact of altered fire regimes.

Geographic Information Systems (GIS) can facilitate the use of landscape information, in space and time, to better understand the resources available to beekeepers across Australia. Combined with information on flowering season, pollen and nectar quality, rainfall data, and burn scar information to track flora recovery, GIS information can help beekeepers select their hive site destinations across the terrain.

The CRC for Honey Bee Products has developed the B-Spatial™ decision support tool platform to collate multiple sources of GIS data to help commercial beekeepers decide which of their many apiary sites to inspect for suitable pollen and nectar production to meet the food needs of their hives.

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decision support

hive site

digitalisation

Melliferous Floral Database · Environmental information base layers · User apiary site information → B-Spatial Dashboard

Planning before they go into the field, B-Spatial™ provides a GIS format for beekeepers to inspect the site, query the information and record their apiary site selections. B-Spatial™ presents data in visual easy-to-use maps and interactive tables and supporting information.

Location-based information helps beekeepers decide where and when to place their hives. B-Spatial™ can map, store, validate and access this information, providing a digital diary of bee food resources.

E-diary functions within the platform, combined with the ability to link to B-QUAL, allow beekeepers to digitally track the history of their hive locations and harvest outputs – information that has not previously been collated. Bespoke to each beekeeper, this information supports planning to meet the demands of their hives and, when the times are tough, find new hive locations.

B-Spatial™ provides a melliferous floral database which can be linked with site information such as apiary permits, fire history, climate and habitat characteristics.

B-Spatial™ was built by the CRC for Honey Bee Products as a beekeeper decision-making tool. It guides apiary site selection decisions for the sustainability of healthy and productive honey bee colonies in times of change.

The B-Spatial™ dashboard includes a map and an interactive table with species information

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