



Figs and wasps

What is the project about?

Often it is difficult to distinguish between different plant species, because of their similarities. It is the morphological characteristics such as fruit, flowers and seeds that allow botanists to differentiate between them. All *Ficus* species have a unique interaction that gives botanists the rare opportunity to distinguish species using more than just their morphological plant features. Fig species are biologically distinct because of the unique way they are pollinated by wasps.

Figs are found in all states and territories of Australia except Tasmania. Currently 44 fig species are recognised for Australia. Identifying fig species has always been difficult. The 1989 Flora of Australia treatment provided keys and descriptions to 41 Australian species but the treatment was quickly outdated as new collections were made, new records were identified, and new species described. While studying Figs to revise and update the genus for Australia researchers found that the current literature explaining the interactions between wasps and figs was incorrect.

Research

This study by Biodiversity Conservation aims to update the genus for Australia and provide comprehensive descriptions to the species together with an interactive key to identification. For this each fig species was classified based on its morphological features that can then aid future botanists to differentiate between each species.

Once the plants were classified using their morphological features researchers also looked at what wasps were found in the fruit of each of the fig species. During the study researchers found that the current literature explaining these relationships was incorrect. Wasps and figs were found to have a 1:1 relationship, while previous research had indicated a different ratio relationships. They had clearly shown that a distinct wasp species pollinated each fig species helping to resolve taxonomic classification. This relationship can therefore be used as a further test the current delimitation of a species, that is, do the wasps recognise the same species as the taxonomists? Why is this important?

Figs are an important and often conspicuous elements of the vegetation in tropical areas, with many considered a keystone species providing a food source all year round. For this reason their conservation may be important in maintaining the biological diversity of an area.

This project highlights the importance of interactions between plants and animals are not only to the ecosystems, but in the study of ecology and the taxonomy.

