



Environment Institute  
of Australia and  
New Zealand Inc.

# INSECTS IN CRISIS SYMPOSIUM

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## ABSTRACT

### The value of insects in agricultural systems and practical methods for their conservation and enhancement of ecosystem services

Insects and other arthropods provide essential ecosystem services to agriculture that underpin crop productivity and sustainability. These services include pollination, pest control, decomposition of crop residues, dung and carcasses to release nutrients, and soil health enhancement. By supporting plant reproduction, beneficial insects such as bees, butterflies, and hoverflies help ensure high crop yields. Predatory insects, such as ladybugs and parasitoid wasps, regulate pest populations, reducing the need for synthetic pesticides. The activities of decomposers like dung beetles, ants and termites release nutrients for crop growth and improve soil structure. Agroecological approaches that seek to maximise ecosystem services have been advocated and pursued for decades but mounting global evidence that many insect populations are declining adds new urgency to addressing habitat destruction and disturbance, pesticide overuse, and climate change. This talk will showcase examples of how land use practices can be revised in order to sustain the ecosystem services on which agriculture depends and also to support other insect species that are of no direct use to humanity but depend on agricultural ecosystems for habitat or key resources such as food.

**DISTINGUISHED  
PROFESSOR  
GEOFF GURR**  
Applied Ecology  
at Charles Sturt  
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## SPEAKER BIOGRAPHY

Geoff Gurr is Distinguished Professor of Applied Ecology at Charles Sturt University in Australia where he leads a team developing ecologically-based strategies to harmonise agriculture with the environment. Following doctoral training at Imperial College, Rothamsted, and the National Institute of Agricultural Botany in Cambridge, his work over the last three decades has focused on a wide range of agricultural systems in Asia, Africa and Oceania. He won Engagement Australia's excellence award for Outstanding Research Impact in 2020 for adoption across tens of thousands of farms of the agroecological approaches he pioneered. Such work has been the subject of the three books for which he is senior editor and many of his more than 300 scientific papers that have earned him a place in Stanford University's "World's Top 2% Scientists" list. His work has been supported by multiple grants from the Australian Research Council, Australian Centre for International Agricultural Research, as well as rural research and development corporations, CRCs and international donors such as the McKnight Foundation. Awarded research funding has a combined value over \$28 million and he has successfully completed 45 PhD and MPhil students. He has held faculty positions at Melbourne, New England, Sydney and Charles Sturt as well as visiting professor positions at Sydney, Lincoln University (New Zealand), Zhejiang University and Fujian Agriculture & Forestry University (China). His work in China has been supported by a prestigious 'Thousand Talents' fellowship. He is immediate past President of the International Organisation for Biological Control (Asia Pacific) and elected Fellow of the Royal Society NSW and the Royal Entomological Society.