This is how people can help conserve insects

By Engela Duvenage, Faculty of AgriSciences, Stellenbosch University

For humanity's sake, people need to change their attitudes towards insects. They are essential for our well-being. They pollinate a third of our crops and help make healthy, living soil. We must protect them better and learn from ideas that have already been developed in South Africa and elsewhere to conserve them. So says Stellenbosch University insect expert Prof Michael Samways, lead author of a new review paper in the scientific journal *Biological Conservation*.

"We will never be able to conserve every insect population or even every species. That said, real, practical possibilities exist from across the world on how we can avoid further insect population loss and species extinction," says Prof Samways, one of the founding fathers of the discipline of insect conservation.

Improved regulation and prevention of environmental risks, and greater recognition of protected areas alongside agro-ecology are also key.

"Protected areas can be extended outside proclaimed borders using large-scale ecological networks of interconnected conservation corridors, which has so far been highly effective for insect conservation in South Africa," adds Prof Samways, author of a new book, *Insect Conservation: a Global Synthesis*.

Engaging civil society

Transforming global agricultural and forestry practices into more expansive, sustainable ones, in line with species co-existence, and mitigating climate change are also part of the solution.

"Above all, communicating with, and engaging civil society and policy-makers, is essential for the future and mutual well-being of both people and insects," he notes. "While small groups of people can action insect conservation locally, collective consciousness and a globally co-ordinated effort for species inventorying, monitoring and conservation is required for large-scale recovery."

He says that, with the possible exception of concerns over the loss of bees and pollination services, people do not value the role that insects play in nature and their usefulness enough. "Luckily, civil society is increasingly becoming aware of the precipitous decline in insects and its severe consequences for planetary survival," says Prof Samways.

"This is where insect icons such as butterflies, dragonflies and bees, popular media, natural history clubs, education, and citizen scientist activities can all play a major role," he adds.

Connecting the disconnected

Prof Samways believes such efforts are especially important in urban and peri-urban environments, where there is an overall major disconnect with nature, yet the greatest concentration of people. "In rural settings there is also great opportunity for better education, especially of the young and impressionable, who often actually educate their parents in matters of 'our future' and 'small lives matter'," he notes.

The new paper is titled *Solutions for humanity on how to conserve insects*. It was compiled in tandem with another recent paper in *Biological Conservation* titled *Scientists' warning to humanity on insect extinctions*.

The latter discusses the perils insects face, and how humanity is pushing many ecosystems beyond recovery. This includes habitat loss, pollution, harmful agricultural practices, invasive species, climate change, overexploitation and extinction of dependent species. These all contribute to unquantified and unquantifiable insect extinctions. This could, among others, have a severe impact on food security, waste removal from the environment, and pest control.

Both papers were compiled by 30 scientists from around the world who are involved in the study and conservation of insects. Among them are other Stellenbosch University academics Prof James Pryke, Dr René Gaigher and Dr Carlien Vorster of the Department of Conservation Ecology and Entomology, and Dr John Simaika of the Department of Soil Science.

Using insect icons such as dragonflies and bees can help fuel the public's awareness about the important role insects play in the livelihood of people. (Photograph: John Simaika)

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