Researchers united on international road map to insect recovery

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Netherlands Institute of Ecology (NIOO-KNAW)

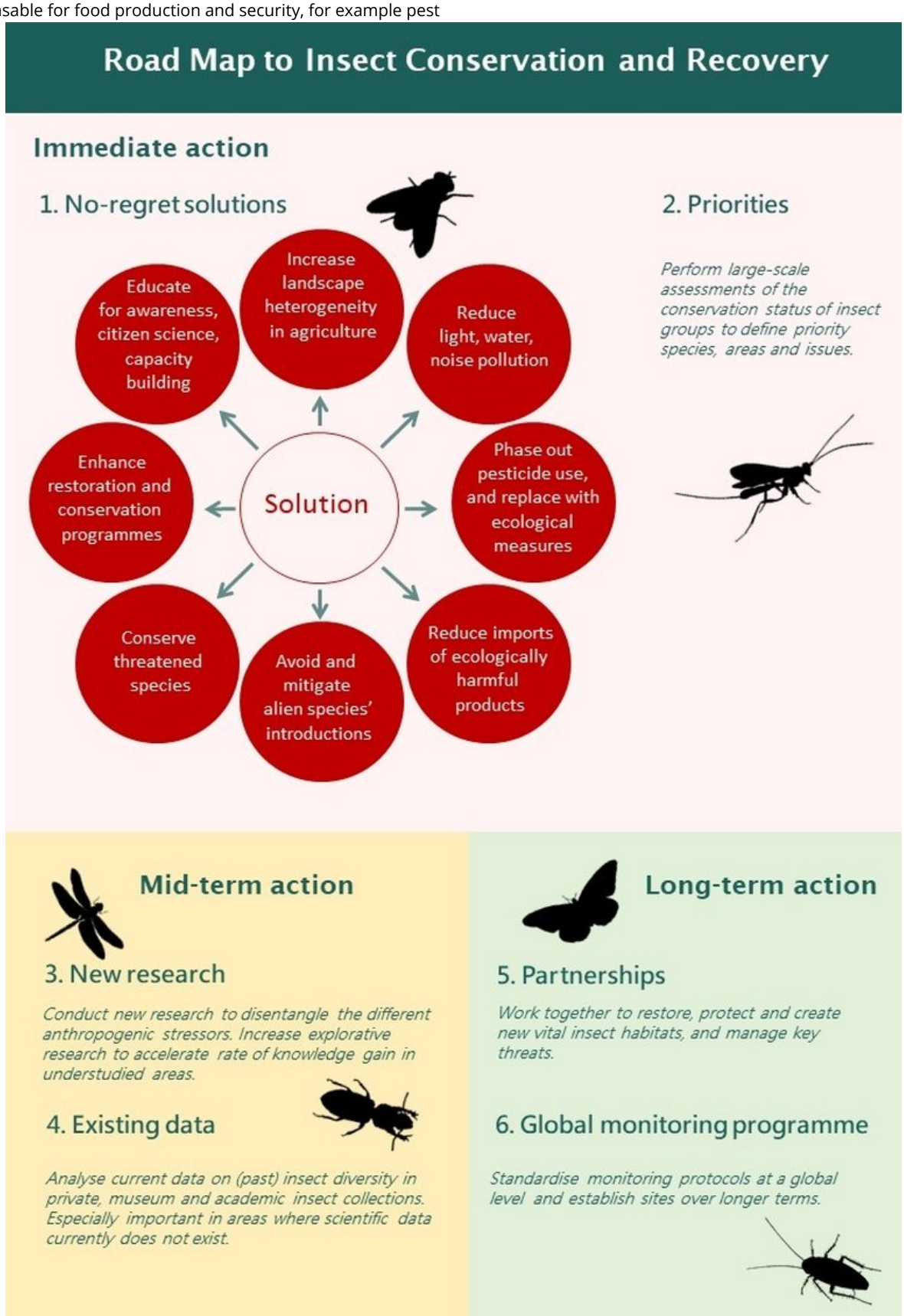
09-JAN-2020 - It's no secret that many insect species are decreasing worldwide. We could fix these insects' problems, according to more than 70 scientists from 21 countries. Their road map to insect conservation and recovery was published in Nature Ecology & Evolution this week. This road map contains both urgent 'no-regret' solutions and long-term global comparisons.

The goal is to start insect recovery soon, says initiator Prof. Jeff Harvey from the Netherlands Institute of Ecology (NIOO-KNAW) and Vrije Universiteit Amsterdam. Evidence is growing that all over the world, insect species are suffering from multiple human-induced stress factors: habitat loss and fragmentation, pollution, invasive species, climate change and overharvesting. "As scientists, we want to gather all available knowledge and put it to action together with land managers, policy makers and everyone else involved."

Predators to pollinators

The roadmap aims at achieving targets over different timescales. More than 70 experts from all continents joined the effort, including book author Dave Goulson and leading scientist Hans de Kroon whose study on insect biomass decline is well-known. "Essentially, we are thinking strategically and this is novel," explains Harvey. "Now and down the road, all to reverse insect declines."

Insect abundance, diversity and biomass are frequently under pressure. It affects all functional groups: from predators to pollinators. The scientists state that "insects are vitally important in a wide range of ecosystem services, some of which are indispensable for food production and security, for example pest



control." *Road map to insect conservation and recovery (Source: NIOO-KNAW)*

Call to action

The steps that need to be taken are divided into immediate, midterm and longterm actions. First of all, there are a number of actions coined as 'no-regret solutions' that can be taken immediately and regardless of new knowledge still to come – as they will not just benefit single insect species. Secondly, there is the urgent need to prioritise: which species, areas and issues need our attention the most.

New experiments should be planned for the midterm to clarify which stress factors cause what effects. This is important to gain knowledge in understudied areas too. A parallel action here would be to dig through existing insect collections, in museums for instance. "This can fill in gaps in our diversity data of the past, as an essential base of reference."

Finally, more long-term actions would include the formation of public-private partnerships and sustainable financing initiatives to restore and create places to live for the insects. It should be combined with a global monitoring programme where people all use the exact same methods and sites, over longer timescales. "In that way, we can definitely compare the well-being of insects worldwide, and rule out possibly disruptive inconsistencies."

True recovery

The extensive group of scientific experts involved in the road map stresses that insect declines are a serious threat, one that society cannot postpone addressing any longer. Harvey: "Most importantly, we hope that end-users and land managers now can use this road map in for instance farming, habitat management and urban development as a template for true insect recovery."

The German government is setting a good example, by already committing funds to combat and reverse declining insect numbers. Which countries will follow soon?

More information

The complete article can be found here: International scientists formulate a roadmap for insect conservation and recovery

The continents and countries from which the co-authors originate:

- Europe – The Netherlands, United Kingdom, Germany, Sweden, Austria, Turkey, Serbia, Portugal, Finland
- North America – United States, Mexico
- South/Central America – Colombia, Panama
- Asia – China, Thailand, Viet Nam, Indonesia, New Guinea
- Africa – South Africa
- Oceania – Australia, New Zealand

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