PHOTO: ISTOCKPHOTO.COM/HEKAKOSKINEN

Neonicotinoids threaten aquatic insects, such as this mayfly, as well as species that rely on them for food.

*Edited by* **Jennifer Sills**

# Call to restrict neonicotinoids

Neonicotinoids are the most widely used insecticides in the world (*1*). They are applied to a broad range of food, energy, and ornamental crops, and used in domestic pest control (*2*). Because they are neurotoxins, they are highly toxic to insects (*2*), a group of organisms that contains the majority of the described life on Earth, and which includes numerous species of vital importance to humans such as pollinators and predators of pests (*3*). Neonicotinoids have proved to be highly persistent in the environment, such that substantial residues are commonly found in soils, wildflowers, streams, and lakes (*4*). One recent study found neonicotinoids in 75% of honey samples collected from around the world (*5*). Hundreds of independent scientific studies have been performed to assess their impacts on beneficial organisms such as bees, aquatic insects, butterflies, and predatory beetles (*4*, *6*).

It is the view of the undersigned scientists that the balance of evidence strongly suggests that these chemicals are harming beneficial insects and contributing to the current massive loss of global biodiversity. As such, there is an immediate need for national and international agreements to greatly restrict their use, and to prevent registration of similarly harmful agrochemicals in the future. On 28 April, the European Parliament voted for a complete and permanent ban on all outdoor uses of the three most commonly used neonicotinoid pesticides (*7*). With the partial exception of the province of Ontario, Canada (*8*), governments elsewhere have failed to take action.

Failure to respond urgently to this issue risks not only the continued decline in abundance and diversity of many beneficial insects, but also the loss of the services they provide and a substantial fraction of the biodiversity heritage of future generations.

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## SUPPLEMENTARY MATERIAL

Full list of signatories
www.sciencemag.org/content/360/6392/973.1/suppl/DC1

10.1126/science.aau0432

# U.S. budget targets fish and wildlife work

In 1935, embracing the principle that science should serve as the basis of federal wildlife policy, the U.S. Geological Survey (USGS) established the Cooperative Fish and Wildlife Research Unit Program (*1*). The Cooperative Research Units (CRUs) facilitate research among natural resource agencies and universities to inform decisions on how to manage millions of acres of land nationwide. The work of CRU scientists has helped guide hundreds of natural resource management decisions. Most recently, it has informed energy exploration on the Colorado Plateau and offshore areas of Alaska, a decision not to list the Sonoran desert tortoise as endangered, strategies to manage the Klamath River Basin to sustain its Chinook salmon, and surveillance of deer to prevent the spread of chronic wasting disease (*2*). Despite the CRUs' measurable successes, the Trump Administration's proposed FY 2019 federal budget—the starting point for the budget that will take effect on 1 October—calls for the program's elimination, closing 40 units in 38 states and terminating more than 700 projects (*3*). If implemented, the proposed budget cut would have a dire effect on research and academic jobs, the U.S. economy, and the preservation of the country's flora and fauna.

University and state agency support, facilitated by CRUs, multiply the return on the USGS's modest investment in this wildlife science. Federal withdrawal of CRU funding would dissolve partnerships that provide office space, courtesy faculty appointments for unit leaders, access to graduate students, and state funding for CRU research that informs management of public lands. Because the faculty who lead the CRU research are USGS employees, withdrawal of federal funding support would result in the termination of faculty members scattered across 38 states and essentially shut down all the research projects they lead or oversee.