Correspondence

Existing rules cover gene-drive usage

Gene-drive technology is not unregulated, as you imply (*Nature* **552,** 6; 2017). Because it involves genetically modified (GM) organisms, it is covered in countries that have regulations on gene modification and internationally by the Cartagena Protocol on Biosafety.

It could be argued that the risks are not comparable for contained laboratory use versus deliberate release of GM organisms into the wild. This assumes that lab safety standards based on pathogenicity would be inadequate for non-pathogenic gene-drive organisms. However, European regulations, as well as, for example, German law, put protection of the environment on a par with protecting human health, even for contained usage. The potential of GM organisms to persist in the environment and spread into wild populations has always been a crucial part of risk assessment for transgenic organisms.

Existing regulations therefore cover environmental risks arising from contained handling of gene-drive organisms, as confirmed by the German Central Commission for Biological Safety (see go.nature.com/2enrjy4). Researchers in Germany and the Netherlands need permission for gene-drive experiments. Risk assessment is then made on a case-by-case basis.

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Bitcoin's alarming carbon footprint

The 'mining' process for the cryptocurrency bitcoin is power hungry, and is increasing its environmental impact as its price and popularity rise. Cryptocurrencies are generated by specialized software, used to solve complex mathematical problems that represent proof-of-work algorithms in exchange for electronic coins (see https://bitcoin.org/bitcoin.pdf).

Some estimate that the combined electricity consumption for bitcoin and ethereum mining, which together represent 88% of the total cryptocurrency market capitalization (G. Hileman and M. Rauchs http://doi.org/cj22; 2017), has already reached a staggering 47 terawatt-hours per year and is on the rise (see www.digiconomist.net). To put this into perspective, Greece's population of 11 million consumes close to 57 terawatt-hours annually.

Moreover, 58% of all cryptocurrency mining is done in China and is typically powered by coal plants. Using the life-cycle impact-assessment methodology, I estimate that the annual carbon footprint for bitcoin and ethereum mining is comparable to that of some 6.8 million average European inhabitants — or as much as 43.9 million tonnes of carbon dioxide equivalent (see ReCiPe and IPCC 2013 methods, respectively, at go.nature.com/2nn7zzj).

In my opinion, the cryptocurrency industry is urgently in need of reform to make it environmentally sustainable.

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Baleen whale species at risk of extinction

The latest Critically Endangered list from the International Union for Conservation of Nature includes the Gulf of Mexico whale, a subspecies of *Balaenoptera edeni* (see go.nature.com/2bdntor). This mammal is at risk of being the first baleen whale to go extinct since the Atlantic grey whale (*Eschrichtius robustus*) three centuries ago. Yet the animal's new status has generated little public response.

The Gulf of Mexico whale is similar to Bryde's and Eden's whales (both also named *B. edeni*), but is genetically distinct from both. It is entirely confined to US waters in the Gulf of Mexico (see go.nature.com/2bdntor). Survey data put its abundance at 33 individuals in 2009, and modelling suggests that almost half its habitat was affected by the Deepwater Horizon oil spill in 2010 (see go.nature.com/2e6joqe).

Rapid action is needed to eliminate sources of human-induced death and injury among these whales. A first step must be to raise society's and scientists' awareness of their status.

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Value and reward regional research

Incentives for publishing in international journals could be preventing ecologists in low-income countries from conducting the research needed to protect and restore their local environments. Few scientists are willing to do time-consuming taxonomic surveys, for example, because these will not generate highly cited publications. Yet effective management is impossible without such local ecological insight.

Although reward structures for research vary substantially between and within countries, they are often based on scientists' publication and citation counts in internationally recognized journals. In Mexico, for instance, this encourages research that appeals to reviewers and editors in distant countries, fosters publication in journals that are financially and linguistically inaccessible, and may not be relevant to local problems (M. W. Neff *Sci. Public Policy* http://doi.org/cjz2; 2017). Journals that are regionally relevant and in languages other than English suffer because top scientists eschew them, leaving university students, resource managers and policymakers with fewer resources.

Mexico's national research policies provide clear examples of distorting incentives, but the problem is close to universal: what is countable is not always what we should be counting. Scientists and publishers need to exert their power to change these systems.

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Don't belittle junior researchers

The most interesting part of a scientific seminar, colloquium or conference for me is the question and answer session. However, I find it upsetting to witness the unnecessarily hard time that is increasingly given to junior presenters at such meetings. As inquisitive scientists, we do not have the right to undermine or denigrate the efforts of fellow researchers — even when their reply is unconvincing.

It is our responsibility to nurture upcoming researchers. Firing at a speaker from the front row is unlikely to enhance discussions. In my experience, it is more productive to offer positive queries and suggestions, and save negative feedback for more-private settings.

With belligerence supplanting courtesy inside and outside the conference room, it might be helpful for young researchers to be taught how to frame a question in a purely scientific way. Let us create a system in which junior scientists feel excited to share their data.

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