

# Correspondence

## Integrate strategies to save biodiversity and groundwater

The 2022 United Nations summits on groundwater in Paris ([go.nature.com/3xxnjv7](https://go.nature.com/3xxnjv7)) and on biodiversity in Montreal, Canada ([go.nature.com/3h6k35t](https://go.nature.com/3h6k35t)), each outlined alarming environmental challenges but did not consider the important links between them.

Almost all liquid fresh water on Earth is groundwater. The global annual extraction of groundwater for households, industry and agriculture is approaching 1,000 cubic kilometres. Such demands deplete the surface waters that sustain biodiverse ecosystems.

Furthermore, oxygen-depleted groundwater inputs can compromise surface waters by reducing the amount of oxygen in water-saturated sediments, thereby damaging the early life stages of animals such as mussels, insects and fish (see D. R. Piatka *et al.* *Earth Sci. Rev.* **220**, 103729; 2021). These ubiquitous effects increase as surface-water levels drop and could be more harmful to ecosystems than pollutants.

Sustainable water strategies must offset dwindling groundwater resources and should reconcile the requirements of ecosystems and humans. Future UN summits on biodiversity and on water should set combined, rather than separate, targets.

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## Reviewers: intercept weaponization of genetics

Jedidiah Carlson and his colleagues recommend that institutional review boards check papers on population genetics for their 'weaponization' potential (*Nature* **610**, 444–447; 2022). But in the case of publicly available genomic data sets such as the 1000 Genomes Project (The 1000 Genomes Project Consortium. *Nature* **526**, 68–74; 2015), this would not be an option.

As members of our university's Racial Justice Learning and Action Group, we propose adding an extra layer of obligatory review for research papers in human genetics that might be misused for malicious purposes. Journal editors or the paper's specialist genetics reviewers would identify manuscripts that need this extra ethical review.

The reviewers would need to be independent, qualified ethical and legal scholars who could identify the social implications of the findings. They would require the research and results to be framed in such a way as to avoid misinterpretation or deliberate distortion by individuals or the media for racist or eugenic purposes.

For example, the authors might be asked to reword their conclusions to delineate their scope, emphasize the limitations of the study and data set, or even append a list of false conclusions that might be erroneously inferred from the study.

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\*On behalf of 8 signatories. See [go.nature.com/3yhqws3](https://go.nature.com/3yhqws3)

## Expanding the pathway to a net-zero future

Having worked with the Intergovernmental Panel on Climate Change (IPCC) for the past ten years, I noticed a subtle but fundamental shift in the agenda at last year's United Nations climate summit, COP27.

Big reductions in the cost of renewable energy sources, batteries and electric transport mean that the transition to clean energy need not damage economies. Therefore, nation states no longer need to be the sole drivers of the climate agenda. Non-state entities – such as businesses, financial institutions, cities and regions – are weighing in. At COP27, a report on how non-state entities can avoid 'greenwashing' their net-zero targets (*Integrity Matters*; [go.nature.com/3kzyucn](https://go.nature.com/3kzyucn)), was passed unanimously.

Guidelines for assessing net-zero targets must be consistent with the science outlined by the IPCC for every nation state. The targets must align with requirements from the International Energy Agency (no new fossil-fuel projects) and include indirect emissions associated with corporate carbon footprints. They should not depend on carbon offsets if changes in technology will suffice – for example, not using gas when electrified processes are available.

The International Organization for Standardization has launched guidelines for assessing net-zero efforts (see [go.nature.com/3xwcvvr](https://go.nature.com/3xwcvvr)). We now have a much clearer path to achieving a comprehensive net-zero future.

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## Scientists – counter lobbyists to shape environment policy

To influence national security policy, scientists must listen to users, says Dewey Murdick (*Nature* **611**, 205; 2022). But to influence environmental policy, scientists need to do a great deal more.

Government environmental policies redistribute public goods, notably tax revenue, natural resources and unpolluted air and water. Our experience – from working for many years in mining, energy, tourism and forestry ([go.nature.com/3dfb8xd](https://go.nature.com/3dfb8xd)) – is that scientists must provide detailed policy proposals, make cost-benefit calculations using treasury methods, and draft legislation with amendments to existing law. They must also enlist political champions, maintain engagement over decades, and recognize when the time is ripe for politicians to act.

These skills are not necessarily familiar to scientists, whereas lobbyists are paid to deploy them full-time. As public concern over global environmental degradation increases, lobbyists for industry are running misinformation campaigns that permeate school curricula, political campaign funding, model legislation, and mass and social media. Environmental-policy input from scientific associations is a priority.

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