

Let's work together

As *Nature Reviews Earth & Environment* publishes its inaugural issue, we encourage Earth scientists to break down disciplinary barriers and collaborate with broader communities in pursuit of alleviating the environmental challenges of the modern world.

Human activities have drastically changed the structure and function of the planet. This is no longer a matter of contention, but a scientific fact. Anthropogenic climate change is pushing social, ecological and climatic systems to their limits. Rivers no longer flow in their natural state. Air pollution is causing thousands of premature deaths each year. Rapid urbanization is exposing increasing populations to natural hazards. The examples are numerous, but the root cause is not: it is us.

The alarm has long been sounded by scientists. Indeed, as [Will Steffen and colleagues](#) discuss, the recognition that Earth has been pushed beyond its natural limits spurred a new scientific movement in the 1980s: Earth System Science (ESS). In an effort to understand and address global change, ESS encouraged boundaries between once disparate communities to blur. Earth scientists and Earth science evolved. Interdisciplinary and transdisciplinary research blossomed, and so too did our scientific knowledge.

However, we cannot and must not stop there. Science continually advances, and to fully appreciate the Earth and all its complexity, so must Earth scientists. In particular, the acknowledgement of humans as an interactive and dominant force necessitates the full inclusion of the anthroposphere in Earth System analyses. Long gone are the days that Earth science encompasses only natural scientists. The full spectrum of social sciences and humanities are critical to our understanding, and progression demands their active participation. We must therefore break down

silos, move beyond traditional disciplinary boundaries, and engage with those working on complementary aspects of our research, even if unfamiliar.

This message is not new. Transdisciplinary collaborations have long been advocated, and similar sentiments are echoed in almost every article in this Issue. [Lucy Jones](#), for example, emphasises the importance of communications and psychology when informing the general public about natural hazard risk. In her [Comment](#), [Giulia Rispoli](#) further

states “to facilitate a more integrated and co-evolutionary study of the Earth System ... more solid collaboration between disciplines is required to realise the level of transdisciplinarity needed ... and rethink science in the Anthropocene”.

Indeed, recognising the dramatic changes in the Anthropocene highlights why now is not the time for complacency. In this era of school children striking for their future, cities leading efforts to become more sustainable and nations declaring climate emergencies, it is time to take stock of what we do know and then fight to progress further. It is for this reason that *Nature Reviews Earth & Environment* is launching at this critical time in Earth's history. Our forward-looking Review and Perspective articles offer a means to not only synthesise the abundant literature across all topics within Earth and environmental science, but also guide future research directions and priorities. Technical Reviews further provide resources on methods and technologies that enable deeper insight into the Earth, its systems and interactions.

In this inaugural issue of *Nature Reviews Earth & Environment*, we offer a selection of articles that showcase our broad remit. From [sea-level rise and migration](#), to [seismic wave field imaging](#), [solar geoengineering](#), [global greening](#), and [the emergence and evolution of ESS](#), our scope is purposefully all-encompassing and interdisciplinary. However, for ease of classification, we incorporate three fluid and overlapping themes: weather & climate, surface processes and solid Earth. Our hope is that *Nature Reviews Earth & Environment* will have something for everyone, and in subsequent issues readers will experience the full breadth of topics that fall under our banner: polymetallic seafloor nodules, halogenated compound pollution, carbon storage by mineral carbonation, atmospheric rivers, and dam impacts on river biogeochemistry, to name but a few. Within these examples, we demonstrate our commitment to foster new collaborations and engage new communities in an effort to pursue a fully holistic understanding of Earth. We urge our authors and readers alike to do the same. After all, science is a collaborative endeavour.

While humans may be the problem, with better understanding we can also be the solution. *Nature Reviews Earth & Environment* is on a journey in pursuit of that knowledge, and we welcome you to join us.

