

# A national network examining Earth's planetary limits

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University of California San Diego Physics Professor Tom Murphy is among five authors of an essay, appearing in the November 2021 issue of the journal *Energy Research & Social Science*, that cautions current levels of worldwide economic growth, energy use and resource consumption will overshoot Earth's finite limits.

The essay, "Modernity is Incompatible with Planetary Limits:

Developing a PLAN for the Future," also announces the establishment of a network of scholars and researchers to promote the understanding of planetary limits, envision scenarios for humanity to thrive within planetary limits, better educate college students about these challenges and advise government officials and communities in developing effective responses.

"We all are a product of our times, where 'new,' 'shiny,' 'better' seem normal and 'more, more, more' seems good, but that is a reflection of the abnormal period of the last century or so," said Murphy. "If humanity keeps growing its impact on the planet, we will overshoot planetary limits, so we need to plan to power down while there's still time. Even the founders of economics recognized that Earth's resources are finite and growth is but a transient phase."

An astrophysicist who has applied the principles of physics to studying Earth's limitations, Murphy recently published a rigorous examination of these issues in "Energy and Human Ambitions on a Finite Planet" (Murphy discusses the book in this question-and-answer article and this video).

In their new essay, the authors wrote, "early flying machines invariably crashed despite an exhilarating brief airborne interval mainly because the contraptions were simply not built according to aerodynamic principles of sustainable flight. Likewise, the present economy is not built on principles for sustainable, steady-state operation."

Essay senior author Ben McCall and the authors acknowledge "the thought that growth should come to an end is counter to our culture." But keeping at this pace, society is not going to get the future it's been promised, according to McCall.

"We shouldn't expect a 'Jetsons' future with flying cars, but with

intentional planning we can hope to do better than a 'Flintstones' future," he said.

The authors also stress they are preaching prudence, rather than trying to sound alarmist.

"We hope this essay gets people to step back from the familiar, up-close view of their place in the world to see a broader perspective on the challenges modern society faces going forward," said David Murphy, associate professor and department chair of environmental studies at St. Lawrence University. "We are not making predictions of 'when.' Our point is there are fundamental limits to our resources on this finite planet, and if we continue using them at this pace, we'll exhaust our resources and that outcome won't be good. We need to find ways to power our world without destroying it."

Melody LeHew, a professor of interior design and fashion studies at Kansas State University, said more than just engineers, economists and biologists need to study these and related fields, but others need to get out of their silos to contribute to solutions.

"As someone who studies fashion, I have seen how our current systems can lead to tremendous waste of resources, but also how dedicated scholars working together can make even the fashion industry more sustainable," she said.

Anyone can join the network as a subscriber to receive updates about network activities. Active scholars can join as members to participate in forums or collaborators to receive full access to the network.

"Our hope is that we might spark debate and deep thinking about how human civilization might thrive for millennia to come, rather than simply survive the bottlenecks of the next few decades," said Tom Love,

professor emeritus of anthropology at Linfield University. "We want scholars to ask what role their current research plays in addressing these issues and contribute to the understanding how human activity might fit within planetary limits."

**More information:** T.W. Murphy et al, Modernity is incompatible with planetary limits: Developing a PLAN for the future, *Energy Research & Social Science* (2021). [DOI: 10.1016/j.erss.2021.102239](https://doi.org/10.1016/j.erss.2021.102239)

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