

Planetary boundary pioneer Johan Rockström awarded 2024 Tyler Prize

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The 2024 Tyler Prize for Environmental Achievement has been awarded to Johan Rockström for his pioneering work leading the international research team who originated the groundbreaking planetary boundary framework in 2009. The theory, updated in 2015 and 2023, is founded upon decades of Earth System Science and the work of researchers worldwide. The planetary boundary framework was conceived while Rockström was director of the Stockholm Resilience Centre, which he co-founded in 2007. The theory delineates planetary boundaries for nine Earth systems, whose stability and resilience are vital to maintaining life as we know it. The framework establishes scientifically quantified thresholds — limits for environmental impacts from human activities in order to maintain a “safe operating space for humanity.” By respecting planetary boundaries, the hope is that the world can sustain an environment similar to the Holocene epoch during which civilization emerged, and avoid more of the extreme environmental harm that has arisen in the Anthropocene — a new geological epoch in which human consumption and pollution are dangerously destabilizing Earth life support systems. In 2023, scientists published a new study finding that humanity is “well outside of the safe operating space” for six of the nine planetary boundaries. Transgressing multiple planetary boundaries could, according to Rockström, risk “reaching tipping points that will undermine

the Earth's life-support systems." Researchers warn that tipping points are looming in the Arctic, Amazon, the world's oceans and elsewhere. The 2023 planetary boundaries update showing 6 boundaries transgressed. The nine boundaries are counterclockwise from top: climate... This article was originally published on Mongabay

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