

# Experimenting and learning from robotics and autonomous systems in the environment

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A research article exploring the use and interaction of automation technologies and robotics in the environment including in engineering nature has been published in *Geoforum*.

Climate/ecological breakdown and automation are two defining challenges of the current era, yet there is little research on their

conjunctural intersection. Across experimental landscapes from agriculture to conservation to mining to weather modification, automation technologies are increasingly being presented as the key to fixing, managing and even transcending the turbulent ecologies of the Anthropocene which threaten social and economic reproduction.

This emerging set of visions, experiments and uses rest on the systemic capabilities of bundled robotic and autonomous system technologies (e.g. advanced sensors machine vision, [artificial intelligence](#), robotics) to see, know and intervene in the biophysical world in new ways. This, we argue, potentially represents a shift beyond logics of mitigation and adaptation towards engineering nature in the face of converging environmental threats.

Synthesizing insights from existing literature, we develop a [conceptual framework](#) for understanding the "new ecologies of automation" and diverse, site-specific applications across what we call "operational ecologies." We then explore a range of diverse exemplars, creating a typology of operational ecologies before discussing key logics, themes and directions for critical research.

Overall, the paper makes a significant and original contribution to knowledge in critical geography, and the under-researched intersection between political ecology and [automation](#) studies.

**More information:** Andrew Lockhart et al, Towards new ecologies of automation: Robotics and the re-engineering of nature, *Geoforum* (2023). [DOI: 10.1016/j.geoforum.2023.103825](https://doi.org/10.1016/j.geoforum.2023.103825)

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