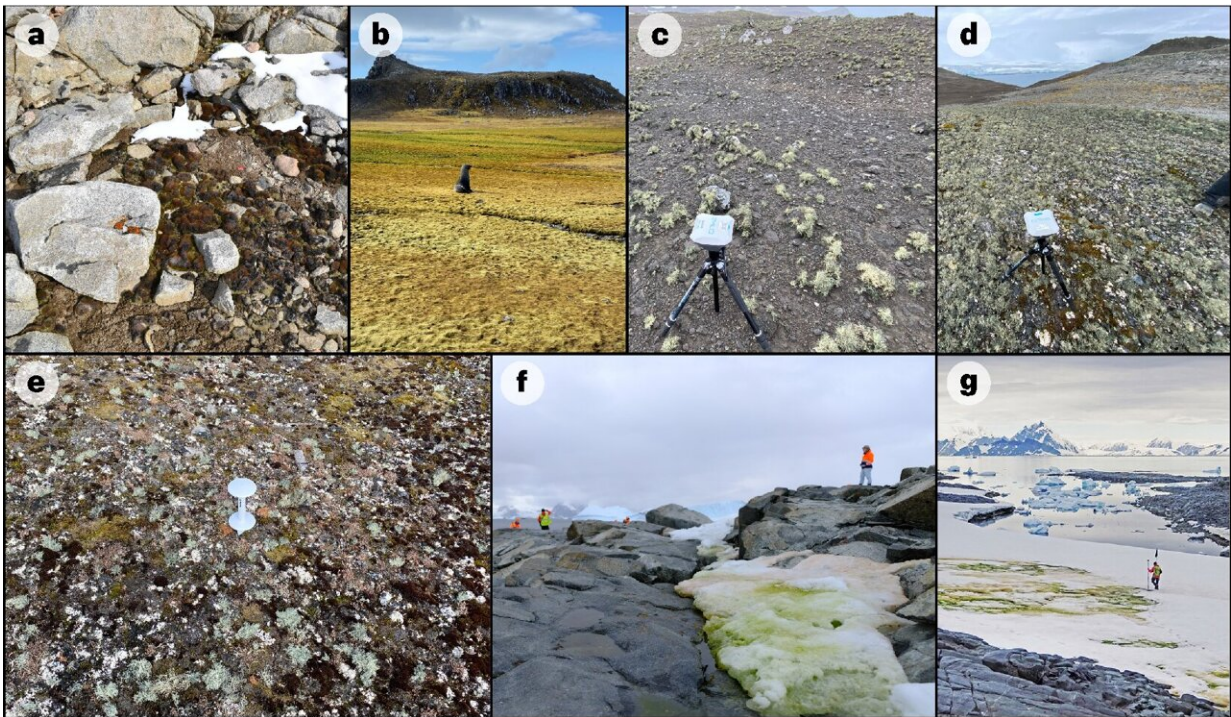


# Antarctic survey of plant life to aid conservation efforts

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Examples of Antarctic vegetation. Credit: *Nature Geoscience* (2024). DOI: 10.1038/s41561-024-01492-4

The first continent-wide mapping study of plant life across Antarctica reveals growth in previously uncharted areas and is set to inform conservation measures across the region. The research is [published](#) in the journal *Nature Geoscience*.

## Conservation baseline

The satellite survey of mosses, lichens and algae across the continent will form a baseline for monitoring how Antarctica's vegetation responds to climate change.

Scientists used a European Space Agency satellite to sweep the continent, combined with field measurements taken over several summer seasons, and detected almost 45 square kilometers of vegetation—roughly three times the size of Lake Windermere in the Lake District, U.K.

## Monitoring growth

The international team, led by the University of Edinburgh with the Norwegian Institute for Nature Research, British Antarctic Survey and Scottish Association for Marine Science, found that more than 80% of the [vegetation growth](#) was contained within the Antarctic Peninsula and neighboring islands.

The team estimates this growth makes up only 0.12% of Antarctica's total ice-free area, highlighting the importance of monitoring key areas of vegetation abundance, which is inadequately protected under the existing Antarctic Specially Protected Area (ASPA) system, experts say.

## Harsh conditions

Antarctic vegetation, dominated by mosses and lichens, has adapted to survive the harsh polar conditions and each type plays an important role in carbon and nutrient recycling on a local level, experts say. Until now, their spatial coverage and abundance across the continent remained unknown.

## Strong barometers

Previous research has shown that the environmental sensitivity of Antarctica's vegetative species makes them excellent barometers of regional [climate change](#). Monitoring their presence in Antarctica, a minimally disturbed landscape, could provide clues as to how similar vegetation types may respond to climate in other fragile ecosystems across the globe, such as parts of the Arctic.

"Our continent-scale map provides key information on vegetation presence in areas that are rarely visited by people. This will have profound implications for our understanding of where vegetation is located across the continent, and what factors influence this distribution," says Charlotte Walshaw.

"Lichens and mosses in Antarctica encounter the harshest living conditions on the planet on a daily basis. Only the most resilient organisms can thrive there. Now that we know where to look for them, we can provide more targeted [conservation measures](#) to safeguard their future," says Dr. Claudia Colesie.

"Remote sensing approaches such as this are low impact methods to study Antarctica's fragile ecosystem as well as monitor change to its vegetation in the future," says Dr. Andrew Gray.

**More information:** Charlotte V. Walshaw et al, A satellite-derived baseline of photosynthetic life across Antarctica, *Nature Geoscience* (2024). [DOI: 10.1038/s41561-024-01492-4](https://doi.org/10.1038/s41561-024-01492-4)

Provided by University of Edinburgh

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