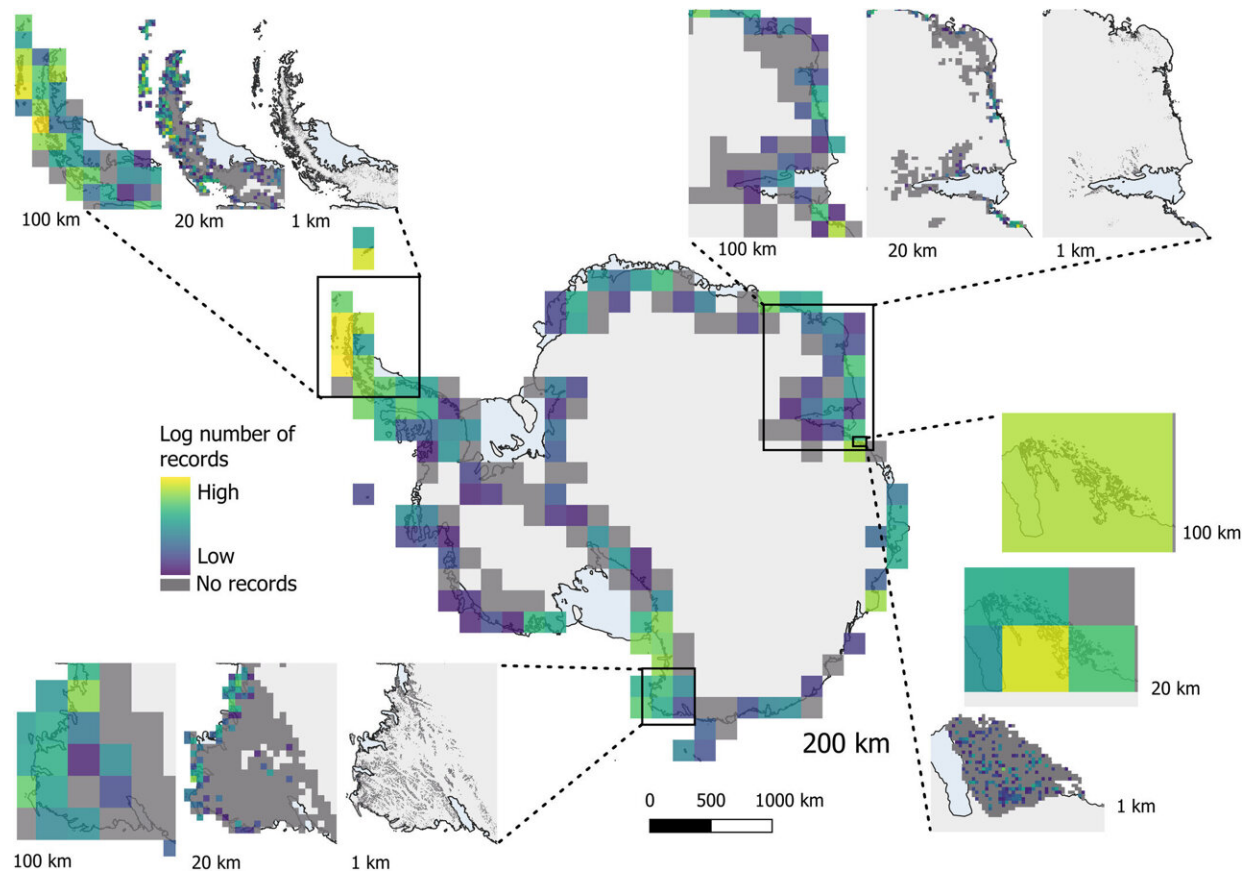


# Antarctic biodiversity database has ice-free areas covered

January 29 2025



Geographic coverage: the log total number of biological records from the Biodiversity of Ice-free Antarctica Database within raster cells of ice-free Antarctica. Credit: *Diversity and Distributions* (2024). DOI: 10.1111/ddi.13909

Australian Antarctic Program scientists have released the most

comprehensive database of species living in the ice-free areas of Antarctica, after 16 years of research.

More than 35,600 records, some more than 200 years old, have been consolidated into one central location. The records comprise the location and identity of 1,890 species, including mosses, lichens, fungi, invertebrates, microbes, birds and seals.

Australian Antarctic Division Program Leader, Dr. Aleks Terauds, said "The Biodiversity of Ice-free Antarctica Database' will underpin future regional and global studies of ecology, diversity and change. For example, the [Antarctic ecosystem classification](#), recently published in *Scientific Data*, relied heavily on the records in this [database](#).

"The species represented in this database occur across all 16 'Antarctic Conservation Biogeographic Regions,' which are distinct areas characterized by different climates, landscapes and species," Dr. Terauds said.

"By better understanding the location and diversity of species across these bioregions, and Antarctica generally, we can design better studies to understand ecological structure and function, and mitigate the impacts of environmental change on biodiversity.

"This new Antarctic database can also be integrated into global biodiversity-related studies, and it supports conservation actions required under the Protocol on the Environmental Protection to the Antarctic Treaty."

Dr. Terauds said the database began with an initial foundational dataset taken from the Scientific Committee on Antarctic Research (SCAR) Antarctic Biodiversity Database in 2008.

Since then the research team has scoured other databases, herbaria, field research notes and [scientific literature](#), quality checking and validating the spatial location and identity of additional records.

The records were collected between the early 1800s and 2019, with most records collected after 1950.

More than 15% of the records were of penguins and flying seabirds, and most (more than 15,000) were collected from the north-west Antarctic Peninsula, followed by almost 5,000 from East Antarctica.

Nearly 78% of records were collected within one kilometer of the continent's coast.

Dr. Terauds said ice-free areas make up about 0.4% of Antarctica and include coastal oases, cliffs, nunataks (mountain summits or ridges poking through ice) and scree (loose stones).

"The characteristics that make these small 'islands in the ice' attractive to the animals, plants and other organisms that live and breed in Antarctica, also makes them attractive to humans and potentially [invasive species](#)," he said.

"So it's really important that we understand what's there and use that information to advance [scientific understanding](#), conservation and biosecurity."

The research was [published](#) Jan. 27 in *Ecology*. A companion paper assessing the potential use of the database was recently [published](#) in *Diversity and Distributions*.

**More information:** Aleks Terauds et al, The biodiversity of ice-free Antarctica database, *Ecology* (2025). [DOI: 10.1002/ecy.70000](https://doi.org/10.1002/ecy.70000)

Charlotte R. Patterson et al, A multidimensional assessment of Antarctic terrestrial biological data, *Diversity and Distributions* (2024). [DOI: 10.1111/ddi.13909](https://doi.org/10.1111/ddi.13909)

Provided by Australian Antarctic Division

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