

LETTERS

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## Mining threatens Colombian ecosystems

The American tropics are home to about 10% of Earth's species and several biodiversity hotspots of global importance for conservation (1, 2), including high-elevation tropical alpine ecosystems (páramos) and Andean forests. These ecosystems deliver numerous services, such as providing water to millions of people (3). They are also extremely sensitive to perturbations and difficult to restore (4). Despite their importance and fragility, a goldmining company has proposed a project that will put Colombia's montane and páramos environments at risk.

Minesa goldmining company plans to build one of the world's largest underground mines in Santurbán, Santander, Colombia (5, 6). The goal of the megamining project is to extract 255 million grams of gold over 20 years, and the extractive company claims that the sale of this gold will bring about U.S.\$2 billion in taxes to Colombia (7). However, an environmental impact assessment (8) shows that those benefits come with a cost: The study forecasts involuntary displacement of human settlements and large-scale habitat fragmentation and loss (8), thus threatening endemic flora and fauna with extinction. Similar large-scale extractive projects in Latin America have produced a severe negative impact on farming communities, affected water and air quality, and led to violent social conflicts (9).

Recent environmental policies in Colombia have fostered unparalleled conservation of remote and species-rich areas (10). However, the biodiverse sites threatened by deforestation and mining, including most of the Andean cloud forests and páramos, are disproportionately excluded from the country's protected areas (10). We urge environmental authorities to take the necessary action to stop the Santurbán goldmining project and instead promote the active preservation and restoration of the páramos and Andean forests, particularly in this biologically important area of the country.

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## Ocean deoxygenation: Time for action

In their Review "Declining oxygen in the global ocean and coastal waters" (5 January, p. 46), D. Breitburg *et al.* summarize evidence showing that oxygen has declined in the open ocean and in coastal waters over the past 50 years as a result of increased greenhouse gas emissions and nutrient discharges to coastal waters. We also urgently need more data on the role and speed of microbial engagement, including how deoxygenation is altering microbial pathways and rates of processes within the water column and the deep ocean (1). Given that more than half of