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Global analysis of mountain forest distribution and change during 2000 to 2018

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Mountain forests cover a small fraction of the Earth's surface, but may exert important influence on the hydrological cycles of river basins (e.g., evapotranspiration, river flow). Many montane ecosystems are currently experiencing forest loss or gain, due to direct land-use change and due to changes in climate. Previous studies revealed most deforestation and afforestation occur in the lowlands, while how forest cover changes at different altitudes in the mountains has not been fully understood. Here we present a study that aims to better understand the distribution of mountain forest change. We use a high-resolution global map of forest change during 2000-2018 combined with elevation data to complete a global analysis of the relationship of elevation with tree cover and tree cover loss and gain. We also assess which climate variables (temperature, rainfall, wind speed) might explain observed variations in tree cover. Our analysis provides new information on how and why mountain forests are changing.