

## Macro Roundup Article

**Headline:** [Accelerating Glacier Volume Loss On Juneau Icefield Driven By Hypsometry and Melt-Accelerating Feedbacks](#)

**Article Link:** <https://www.nature.com/articles/s41467-024-49269-y>

Author(s)	Bethan Davies, Robert McNabb, Jacob Bendle, Jonathan Carrivick, Jeremy Ely, Tom Holt, Bra
Publication	Nature Communications
Publication Date	July 03, 2024

**Tweet:** The rate of ice loss in the Juneau Icefield in Alaska has doubled after 2010 relative to 1979-1990. The ice field has lost 25% of its volume since the late 18th century when the glaciers expanded during the Little Ice Age.

**Summary:** Ice loss from Juneau Icefield, a plateau icefield in Alaska, accelerated after 2005 AD. Rates of area shrinkage were 5 times faster from 2015–2019 than from 1979–1990. Glacier volume loss remained fairly consistent ( $0.65\text{--}1.01\text{ km}^3\text{ a}^{-1}$ ) from 1770–1979 AD, rising to  $3.08\text{--}3.72\text{ km}^3\text{ a}^{-1}$  from 1979–2010, and then doubling after 2010 AD, reaching  $5.91 \pm 0.80\text{ km}^3\text{ a}^{-1}$  (2010–2020). Thinning has become pervasive across the icefield plateau since 2005, accompanied by glacier recession and fragmentation. Rising equilibrium line altitudes and increasing ablation across the plateau has driven a series of hypsometrically controlled melt-accelerating feedbacks and resulted in the observed acceleration in mass loss. As glacier thinning on the plateau continues, a mass balance-elevation feedback is likely to inhibit future glacier regrowth, potentially pushing glaciers beyond a dynamic tipping point.

**Related Articles:** The Rapid Loss Of Antarctic Sea Ice Brings Grim Scenarios Into View and What Happens in Antarctica, Doesn't Stay in Antarctica and Antarctic Sea Ice Has Shrunk By An Area Nine Times The Size Of Britain

**Primary Topic:** Global Warming

**Topics:** Academic paper, Global Warming, Science

**Permalink:** <https://www.edwardconard.com/macro-roundup/the-rate-of-ice-loss-in-the-juneau-ice-field-in-alaska-has-doubled-after-2010-relative-to-1979-1990-the-ice-field-has-lost-25-of-its-volume-since-the-late-18th-century-when-the-glaciers-expanded-durin?view=detail>

**Featured Image Link:** <https://www.edwardconard.com/wp-content/uploads/2024/07/21644-accelerating-glacier-volume-loss-on-juneau-icefield-driven-by-hypsometry-and-melt-accelerating-feedbacks-featured-thumbnail-image.png>