

## **Twentieth century increase in snowfall in coastal West Antarctica and the Antarctic Peninsula**

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The Amundsen Sea sector of the West Antarctic ice sheet has been losing mass in recent decades, however long records of snow accumulation are needed to place the recent changes in context. Here we present snow accumulation records from a series of ice cores drilled in the southern Antarctic Peninsula and Ellsworth Land, West Antarctica. The records show a dramatic increase in snow accumulation during the 20th century, following relatively stable conditions during the previous two centuries. The 20th century increase in snowfall is linked to deepening surface pressure and declining sea ice in the Bellingshausen Sea. The observed increase in snow accumulation and inter-annual variability during the late 20th century is unprecedented in the context of the past 300 years.