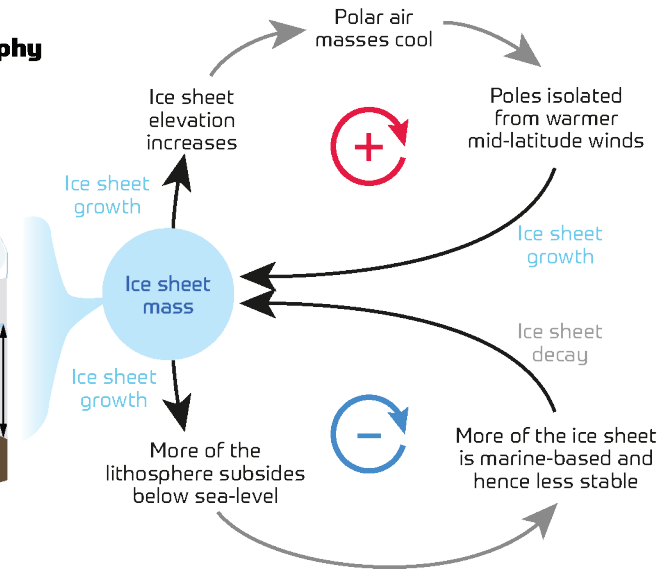
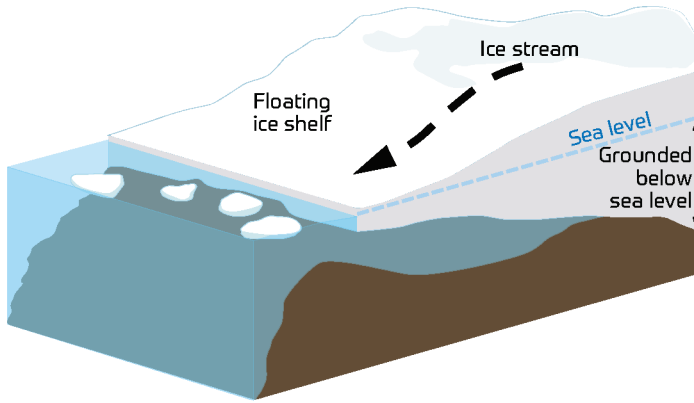
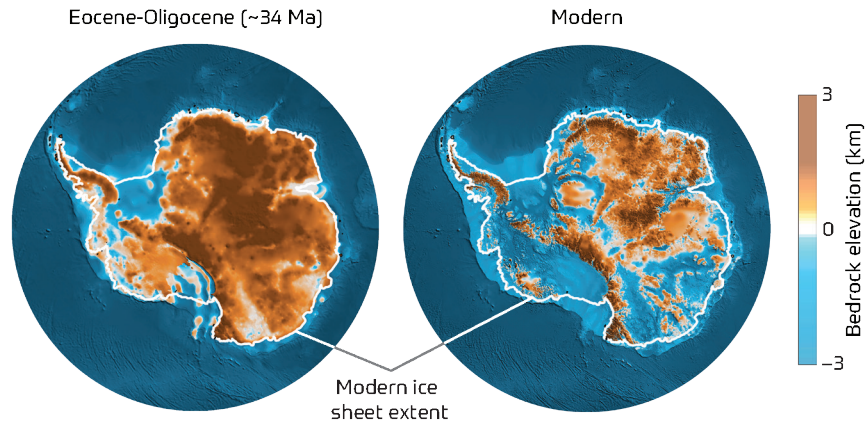


(a) Cryosphere Paleotopography Driven Feedbacks



(b) Change in Antarctic Land Area Since Ice Sheet Inception



(a) Changes in the paleotopography of both the upper and lower surfaces of ice sheets, as a result of changes in ice sheet mass, can result in both amplifying and regulatory feedbacks. (b) Comparison between modern and reconstructed (~34 million years ago) bedrock elevation beneath the Antarctic ice sheet, illustrating how lithospheric loading by the ice sheet, tectonic processes, and glacial erosion have resulted in a 25% reduction in the land area located above sea level since the Eocene-Oligocene. Scientific ocean drilling results are used to reconstruct paleotopography, or bedrock elevation, which is a critical factor in modeling the nucleation and dynamics of ice sheets. Sources: (a) Original illustration by Matt O'Regan and Rosalind Coggon. (b) Paleotopography: Paxman et al. (2019), <https://doi.org/10.1016/j.palaeo.2019.109346>; Modern bedrock elevation: Fretwell et al. (2013), <https://doi.org/10.5194/tc-7-375-2013>