

PREFACE

This issue of the *Annals of Glaciology* compiles papers on the broad theme *Earth's Disappearing Ice*. The globally averaged temperature of our planet is increasing and it is virtually certain that anthropogenic influences are in large measure responsible. The impact of climate change is projected to be widespread and regionally variable. Thus every sphere of the earth system is expected to experience some degree of disruption. Throughout the earth system many changes are already noticeable and one readily evident example is the widespread and in some cases rapid response of earth's ice cover. Over the second half of the 20th century alpine glaciers have exhibited a near global-scale pattern of retreat and thinning which will affect local communities that depend on snow and ice cover for fresh-water resources. Satellite observations since the 1980s have revealed rapid changes in outlet glaciers and ice streams that drain large sections of the Greenland and Antarctic ice sheets, forcing the glaciological community to acknowledge that these large ice masses can exhibit large changes in discharge on time scales much shorter than hitherto assumed. Peripheral ice shelves in the Antarctic Peninsula are disintegrating at an increasing rate in concert with warming in the region, with consequent increases in the discharge of land-based ice to the oceans. The extent of summer sea ice in the Arctic is declining and raising the spectre of ice-free summer conditions well before the end of this century.

Thus, it is of paramount importance to document these ongoing changes in the cryosphere, and identify the drivers causing the changes. The contributions to this issue cover a range of relevant topics from monitoring glacier changes in specific regions, the extraction of climate records preserved in ice cores, local to regional impact assessments, and monitoring and modelling ice dynamical processes. The Scientific Editors – Guðfinna Aðalgeirsdóttir, Jason Box, Adrian Jenkins, Nina Kirchner, Douglas MacAyeal, Ellen Mosley-Thompson, W. Tad Pfeffer, Stephen Price, Leigh Stearns, Lonnie Thompson and Dirk van As – have made every effort to maintain rigorous scientific standards throughout the review process. The IGS Secretary General and IGS production staff have worked diligently to prepare this issue for publication. Finally, we thank the authors who contributed papers to this issue of the *Annals of Glaciology*.

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