
Preface

Soils have been studied in Antarctica for nearly 100 years. The first soils study in Antarctica was by Jensen (1916) who analyzed soil samples collected during the 1907–1909 Shackleton expedition. It is of interest that no soils investigations were undertaken in Antarctica during the International Geophysical Year in 1957. However, in 1959 a New Zealand field party that included J.D. McCraw and G.G.C. Claridge went to Antarctica with the intention of preparing a soil map of the Ross Dependency, an area claimed by New Zealand that includes much of the Transantarctic Mountains. In the 1960s, F.C. Ugolini examined the role of biota in soil-forming in the McMurdo Dry Valleys. Edited by J.C.F. Tedrow, *Antarctic Soils and Soil Forming Processes* was published by the American Geophysical Union in 1966 as part of the Antarctic Research Series.

During 1964 to 1999, G.G.C. Claridge and I.B. Campbell spent 15 field seasons together in Antarctica describing and sampling over 900 pedons. In 1987 they published *Antarctica: Soils, Weathering Processes and Environment*, which provided detailed information on soil-forming factors, weathering, soil distribution, glacial history, classification, and environmental considerations. This book has remained the key reference to Antarctic soils over the past 27 years.

Satellite imagery has shown that only 0.35 % (45,000 km²) of Antarctica is ice-free. The present book was initiated as a result of the large proportion (93 %) of literature on Antarctic soils that has been generated since the mid-1980s, particularly in ice-free regions for which soils data were unavailable. The book was prepared at the request of A.E. Hartemink, who is coordinating Springer's World Soils Book Series. This book divides Antarctica into 12 ice-free regions and subregions. Although the chapters vary in structure, they generally include an introduction reviewing the literature and a description of the ice-free region. The results section presents soil maps, where they are available, a description of soil-map units and analytical soil properties. The discussion includes the soil-forming factors and soil-forming processes. We have used *Soil Taxonomy* as the basic scheme for soil classification. The final three chapters deal with management and climate change impacts on Antarctic soils and a summary of the distribution of soil taxa in Antarctica.

This book is intended to complement Campbell and Claridge's *Antarctica: Soils, Weathering Processes and Environment* and to contribute to our understanding of the global distribution of soils.

The Soils of Antarctica

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