

Geology of Southeast Alaska: Rock and Ice in Motion

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Source: Arctic, Antarctic, and Alpine Research, 39(1) : 184

Published By: Institute of Arctic and Alpine Research (INSTAAR),
University of Colorado

URL: [https://doi.org/10.1657/1523-0430\(2007\)39\[184:GOSARA\]2.0.CO;2](https://doi.org/10.1657/1523-0430(2007)39[184:GOSARA]2.0.CO;2)

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Book Reviews

GEOLOGY OF SOUTHEAST ALASKA: ROCK AND ICE IN MOTION. By Howard H. Stowell. Fairbanks, Alaska: University of Alaska Press, 2006. xii + 140 pp. \$19.95 (paperback). ISBN 188996381X.

Geology of Southeast Alaska: Rock and Ice in Motion attempts to fill a much-needed niche in interpreting for the public the complexity of the geology and glacial history that has shaped Southeast Alaska. The story of how the various terrains were assembled and subsequently sculpted by numerous glacial advances is a complex history to write, especially when relating this story to the non-geologist visitor to the region. Stowell has written a plausible history of the geology; the author has had experience conducting research and as an interpreter on various cruise lines for tourists visiting the area. However, the book falls short because it does not provide an overview of the entire geology of southeastern Alaska. Instead, it focuses only on the heavily traveled cruise routes and, as a result, large segments of Southeast Alaska geology get little discussion.

The scenery of Southeast Alaska that visitors experience is the result of several interacting geological processes, such as the addition of terrains (crustal blocks or fragments which preserve a distinctive geologic history that is different from the surrounding areas) to the North American continent. In addition, the subsequent folding, faulting, intrusion, and metamorphism of these terrains and their movement are also important subjects. The interaction of glaciers with the boundaries of these blocks and the structural weaknesses within them, which carve the landscapes of Southeast Alaska, are important topics that are not fully presented by Stowell. The shaping of these landscapes through changes in global sea levels and the interactions of the crust with the glacial ice are important factors in understanding the present-day landscapes of Southeast Alaska. Volcanic eruptions that occur as a result of the interaction of terrain fault boundaries and the retreat of glacial ice are also an important topic that deserves more coverage in a book entitled *Geology of Southeast Alaska: Rock and Ice in Motion*.

Because these important subjects are not adequately addressed, the book tells only a portion of this spectacular story. The text also lacks discussion of the glacial history and paleoecology of Southeast Alaska. Research within the caves of this area has shown the dramatic changes in environment and in the associated plant and animal communities during the past 50,000 years, yet there is no discussion of this important subject. The book gives only limited attention to how the various ice ages have sculpted the land, resulting in the landforms that shape the Southeast today.

Many of the figures and diagrams are perplexing, and the book is poorly organized, resulting in unnecessary repetition and contradictions within the text. For example, the interchangeable use of metamorphic belts and terrane boundaries is confusing. Many of the illustrations, such as the generalized geologic cross sections, are incomplete or poorly depicted. Furthermore, concepts could have been better illustrated, such as the discussion of paleomagnetism on page 25.

Although this book is a step in the right direction in interpreting the geology and glacial landscapes of Southeast Alaska, it is not a book on the geology of Southeast Alaska. It does not encompass a comprehensive regional story. As a result,

for those who visit this area, this book may be a difficult starting point for gaining understanding of the landscape and the processes by which it was formed.

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