

## BOOK REVIEW

**Book Review: *Dangerous Neighbors: Volcanoes and Cities*.** By Grant Heiken (2013) Cambridge University Press, \$30, 196 pages, ISBN: 9781107039230.

Grant Heiken, a world-renowned volcanologist, has written a book based on his long history investigating volcanic hazards that is absolutely riveting. Eight of the ten chapters focus on the interplay between major metropolises and destructive volcanoes. The introductory chapter sets the stage for the remainder of the book. This chapter touches on various types of volcanic events; from Nyiragongo lava flows that disrupted the city of Goma, DRC, to debris flows from Nevado del Ruiz that killed 23,000 residents in Armero, Columbia, to the Eyjafjallajokull volcano in Iceland which spewed an ash column into the jet stream and disrupted air travel to 32 European countries for 6 days. Other issues weaved into the introduction are the social and political fallout when a predicted eruption does not occur (Soufriere de Guadeloupe), how hazard evaluation processes change, and why do major populations reside near high risk volcanoes.

The next eight chapters deal with individual regions and their respective volcanic fields. The areas are: (1) Naples, Italy, (2) Mexico City, Mexico, (3) Quito, Ecuador, (4) Manila, Philippines, (5) a series of cities in Japan, including Shimabara, Kagoshima, and Tokyo, (6) Auckland New Zealand, (7) northwest United States (Seattle, Tacoma, Portland), (8) and two island cities (ancient Akrotiri, Thira, Greece and Plymouth, Monserat, Caribbean) that may share a common fate. Most of these examples have “sidebars” at the end of the chapters that discuss the significant volcanic mechanism that is central to that volcano/city history. These truly fascinating stories of the stunning volcanic eruptions and their aftermaths (debris flows, tsunamis, ash plumes) and how humans avoided these events (or not) should serve as notice to all cities large and small.

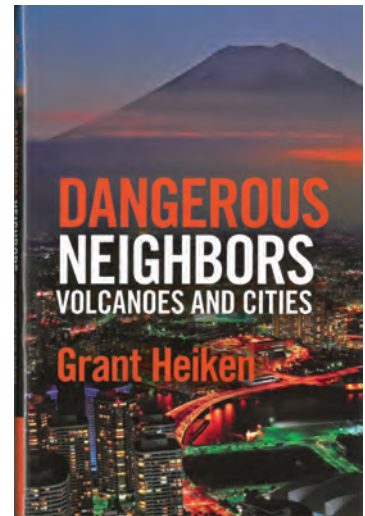
The final chapter discusses at length how a major city should respond to volcanic hazards. It deals at length with the quandary posed over how to educate the populous and government officials at all levels. Heiken also postulates how scientists can provide potential risk and hazard assessments in a manner that can be understood by the public. He illustrates this complexity by

considering the difficulty of accurate prediction of volcanic eruptions coupled with setting the criteria for evacuation notices. Declaring an eruption in 100 years is useless, while at 100 days may cause confusion and resentment if the eruption does not occur. If one waits till 10 days before a potential major eruption, it may be impossible to evacuate a large population center. Of course, if you wait until 10 hours before the

event, well it is probably a moot point. These are just a few of the numerous challenges that Grant Heiken poses and addresses in this wonderful, thought-provoking book.

The book provides many great and in places dramatic photographs along with a chart listing large city populations and the last significant eruption by a nearby volcano. These are truly eye opening images. In addition, the frontispiece of the book contains definitions and descriptions of many volcanic phenomena central to understanding the book. The only disappointment was that there was no extensive reference list, only a group of suggested further readings.

Who would be interested in such a book? I would highly recommend this to undergraduates in a variety of disciplines; geology, geography, mass communications, and risk assessment students. In addition, this should be a must read for first responders, government officials responsible for public safety at the local, state, and Federal level.



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