

Volcanic Activity in Ohio & Beyond

April 27, 2010—When it comes to volcanoes, many of us may think of famous eruptions that wrought great destruction, such as Mt. Vesuvius, which destroyed the cities of Pompeii and Herculaneum in Italy in AD 79; Krakatoa, an Indonesian volcano that erupted in 1883 and killed an estimated 35,000 people; or closer to home, Mount St. Helens in Washington, which experienced the most catastrophic eruption in our nation's history in 1980. And recently, the volcanic eruption near Eyjafjallajökull, Iceland, produced great amounts of steam and ash that brought much of the European airline industry to a halt.



Three images of Mount St. Helens taken in 1980 during the period surrounding the eruption. From left to right: Pre-eruption, March 25; eruption on May 18; and post-eruption, July 8. Photos courtesy of the Washington Department of Natural Resources, Division of Geology and Earth Sciences.

Volcanoes create numerous geologic and hydrologic hazards, including ash falls, clouds of toxic gases, acid rain, lightning, landslides, and mudflows. Until such events occur and inundate our media outlets with constant updates of their activities, we might think of volcanoes as sleeping giants that lie mostly dormant and erupt only sporadically to wreak havoc on nature and human activities. However, contrary to popular belief, volcanic activity continuously occurs around the world. For example, the Hawaiian Islands are constantly evolving because of volcanic activities such as lava flows and eruptions.

While Ohio does not feature any active volcanoes today, our state did go through ages of periodic volcanic activity during the Precambrian, Ordovician, and Devonian Periods from about 4.5 billion to about 360 million years ago.

“During the Ordovician Period, about 454 million years ago, Ohio experienced the effects of some of the largest volcanic eruptions in the history of Earth,” says staff geologist Greg Schumacher. “The sun over Ohio would have disappeared behind huge clouds of volcanic ash that likely covered most of Earth’s surface. Thick blankets of ash buried the land surface and accumulated over the sea floor, smothering untold billions of organisms. Yet no major extinction events are associated with this volcanic activity.

“Volcanic ash is like snow: It does not accumulate evenly over Earth’s surface,” Schumacher continues. “So in those areas with little or no ash, organisms were able to survive such catastrophic volcanic events.”

Today, these volcanic ash beds are buried under many layers of rocks that have accumulated over the millions of years that have passed since these massive eruptions. The ODNR Division of Geological Survey has numerous rock cores stored at the H. R. Collins Laboratory that have cored through many of the




Core of Ordovician age k-bentonite from Preble County showing thin layers of volcanic ash surrounded by light-gray to light-brown limestone at top and bottom.

volcanic ash beds deposited across Ohio. Contact Greg Schumacher at greg.schumacher@dnr.state.oh.us or (740) 548-7348, ext. 25 to examine volcanic ash beds from Ohio.

Volcanoes are awesome and complex geologic features that demand constant research so that we might predict and prepare for such massive eruptions as mentioned above. To that end, the U.S. Geological Survey established its Volcano Hazards Program in 1980 to research volcanic activity in our country and around the world.

To learn more about the geologic nature of volcanoes, volcanic activities and their associated geohazards, and volcano research, explore the links below.

-  [Volcanoes in Ohio](#)—*Ohio Geology* Summer/Fall 1991 [2.6 MB PDF]
- [USGS Volcano Hazards Program](#)
- [How Volcanoes Work](#) (NASA/SDSU)
- [NASA's Volcano Research](#)—Solid Earth Science Working Group
- [FEMA for Kids: Volcanoes](#)