

Looking behind the license plate and under the quarter:

Science in Crater Lake

("Hey, Ma!, Someone put a Lake in my Volcano!")



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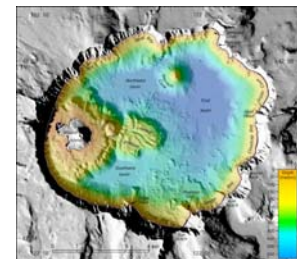


To follow web links on the back of this sheet, download this document to your computer from:
<http://chemoc.coas.oregonstate.edu/~bobcollier/NationalParksCraterLake2009.pdf>

Introduction: brief overview of the Mount Mazama *stratovolcano*

Postcaldera History ... *Stories told by a really good map!*

"Crater Lake, the deepest lake in the United States, occupies a caldera in Mount Mazama, a Cascade Range volcano that once stood about 3,700 meters (12,000 feet) above sea level. About 7,700 years ago in a catastrophic eruption that lasted only a few days, Mount Mazama ejected about 50 cubic kilometers (12 cubic miles) of magma in the form of pumice and ash. Near the end of the eruption, the mountain collapsed upon itself to form a large caldera. After this climactic event, volcanic activity resumed within the caldera, creating Wizard Island and other new landforms. All but the uppermost portion of the Wizard Island volcano is hidden from view below the surface of Crater Lake." (from Bacon et al. GSA Bul., 114:675-692, 2002)



See new Geologic Map of Mount Mazama and Crater Lake Caldera by C. Bacon.
<http://pubs.usgs.gov/sim/2832/>

How is the Mt. Mazama volcano similar to others around the Pacific "Ring of Fire".

On-going Limnology Studies: *Someone put a lake in my volcano!*

collaborators: Gary Larson, Mark Buktenica, Scott Girdner, Greg Crawford
and many others

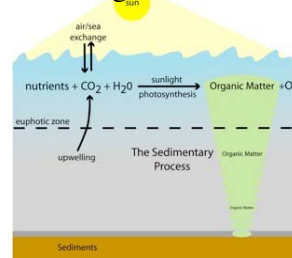
Basic research tool we use today to investigate:

Climate – Lake Level; Meteorology stations

Lake Structure – Geologic controls on physics and biology.

Processes – how does the ecosystem work in this system?

Understanding the impacts of humans and climate change.



Web Links: Crater Lake (Mount Mazama), Oregon, USA

**Studies of hydrothermal Processes in Crater Lake, Oregon
(Collier and others)**

<http://chemoc.coas.oregonstate.edu/~bobcollier/CLhydrothermalSite/>

NPS - Crater Lake National Park

<http://www.nps.gov/crla/>

<http://www.nps.gov/crla/home.htm>

USGS -- Long-term Limnological Monitoring of Crater Lake

<http://fresc.usgs.gov/products/crater/>

Lake Physics

<http://www.humboldt.edu/~gbc3/CL/> and <http://damp.oce.orst.edu/crater/>

USGS -- Current Lake Water Level

<http://or.waterdata.usgs.gov/nwis/uv?11492200>

Current Park Weather (Rim and Lake)

<http://www.crater-lake.dri.edu/index.html>

USGS - Geologic Map of Mount Mazama and Crater Lake Caldera (Charlie Bacon)

<http://pubs.usgs.gov/sim/2832/>

USGS -- Crater Lake, USGS/Cascades Volcano Observatory, Vancouver, Washington

<http://vulcan.wr.usgs.gov/Volcanoes/CraterLake/framework.html>

USGS -- Crater Lake Data Clearinghouse

<http://craterlake.wr.usgs.gov/>

USGS multibeam bathymetry project (Cruise reports, Flythrough, greatdata!)

<http://wrgis.wr.usgs.gov/dds/dds-72/site/intro.htm>

USGS application of multibeam to benthic Moss studies

<http://pubs.usgs.gov/ds/366/>

Crater Lake Lodge

<http://www.craterlakelodges.com/>

http://www.craterlakelodges.com/webcam_cl-2.php (CraterCam)

Crater Lake Trust

<http://www.craterlaketrust.org/>

Other Great Links:

The Science of Volcanic Lakes – awesome! great links

Dr. Gregory B. Pasternack , University of California, Davis

<http://lawr.ucdavis.edu/faculty/gpast/lakes.html>

Degassing Nyos

Michel Halbwachs, Centre de Recherches Volcanologiques (CNRS, France)

<http://perso.wanadoo.fr/mhalb/nyos/index.htm>

Ring of Fire 2006 Exploration

<http://oceanexplorer.noaa.gov/explorations/06fire/logs/summary/summary.html>