



# Alaska's Volcanic Landforms and Features Information Search









(A)



(B)





(A)



(B)











(A)



(B)



(A)



(B)





(A)



(B)

Mount Wrangell, a 4,317-m (14,163 ft)-high andesite shield volcano on the right skyline, is the only volcano in the Wrangell Mountains to have had documented historical activity consisting of several minor, possibly phreatic eruptions in the early 1900's. At left is Mount Zanetti, a 3,965-m (13,009 ft)-high cone. View is to the northeast. Photograph by B. Cella, National Park Service (NPS) , 1987. Image by Cella, B., National Park Service.

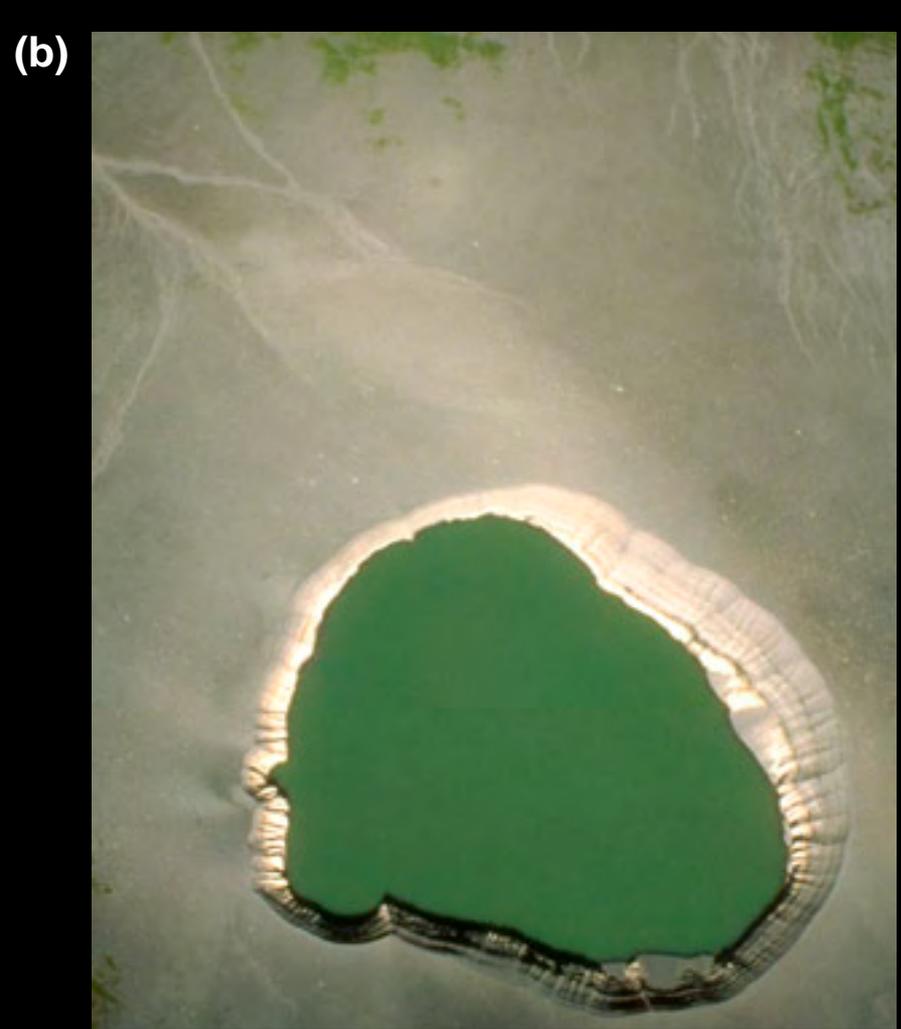




Vent Mountain in the foreground is a cinder cone inside Aniakchak Caldera. The caldera wall is in the background. Aniakchak Volcano is on the Alaska Peninsula. R.G. McGimsey, USGS, 06/28/97.



Augustine in the Cook Inlet is a composite, or strato-volcano. This image was taken looking northwest and volcanic ash covers the upper flanks of the summit. White steam is being emitted. J. Adleman, USGS, 02/24/06.



(A) Aerial view of a phreatomagmatic eruption of the East Maar of Ukinrek Maars. The Ukinrek Maars are located on the south shore of Becharof Lake on the Alaska Peninsula; the maar craters formed during a 10-day eruption in March and April of 1977. Juergen Kienle, University of Alaska Geophysical Institute (UAFGI), April 6, 1977.

(B) Near-vertical view of the east Ukinrek Maar crater, 300 m (980 ft) across. Part of smaller west Ukinrek Maar crater is visible at upper left. D. Dewhurst, U.S. Fish and Wildlife Service (USFWS), July 8, 1990.



(A)



(B)

(A) Aerial view of 80-m (260 ft)-high Novarupta, a blocky rhyolite (high silica) lava dome that marks the vent for the 1912 eruption that created the Valley of Ten Thousand Smokes in Katmai National Park and Preserve, Alaska. This eruption was the most voluminous on Earth in the 20th century, ejecting nearly  $30 \text{ km}^3$  ( $7 \text{ mi}^3$ ) of material in 60 hours. Falling Mountain, a lava dome truncated by the 1912 eruption, is visible behind the Novarupta dome; snow-capped strato-volcano Mount Mageik can be seen at top of the photograph. T. Miller, U.S. Geological Survey, June 1979.

(B) Summit dome on Augustine Volcano, Cook Inlet, AK. J. Adleman, U.S. Geological Survey, May 12, 2006.



Aerial view, looking east, of Aniakchak caldera. Formed during a catastrophic ash-flow producing eruption about 3,400 years ago, Aniakchak caldera is about 10 km (6 mi) across and averages 500 m (1,640 ft) in depth. Voluminous post-caldera eruptive activity has produced a wide variety of volcanic landforms and deposits within the caldera. The volcano is located in Aniakchak National Park and Preserve on the Alaska Peninsula. M. Williams, National Park Service, 1977.



**Large-pool thermal hot springs area southwest of Korovin Volcano and west-northwest of Kluichef Volcano on Atka Island in the Aleutians. Photograph taken by R.G. McGimsey, U.S. Geological Survey, July 14, 2004.**



Fumarolic activity at the summit of Fourpeaked Volcano in Kamtai National Park and Preserve on the Alaska Peninsula. Photograph taken by J. Adleman, U.S. Geological Survey November 4, 2006



**View of 1997 basaltic andesite lava flow inside Okmok caldera, a 9.3 km (5.8 mi) diameter circular crater that truncates the top of a large shield volcano on the northeastern part of Umnak Island in the eastern Aleutian Islands. The most recent caldera-forming eruption at Okmok occurred about 2,400 years ago. Since then, numerous intracaldera eruptions have occurred, including the eruption that extruded these blocky lava flows onto the caldera floor. Photograph taken by C. Nye, Alaska Division of Geological and Geophysical Surveys September 1999**



(A) Pyroclastic flow (deposits of volcanic ash, gas and pumice flows) deposits on the southwestern flank of Augustine Volcano, Cook Inlet, Alaska. Photograph taken by M. Coombs, U.S. Geological Survey, August 14, 2006.



(B) View southeast up the Valley of Ten Thousand Smoke from the Overlook Cabin in Katmai National Park and Preserve, Alaska. The valley has been filled with up to 200 m (660 ft) of pyroclastic flow deposits (ignimbrite) from the 1912 eruption of Novarupta volcano. The rim of Katmai Caldera is on the skyline at left. Photograph taken by R.G. McGimsey, U.S. Geological Survey, June 8, 1991.



(A) These small hills in the foreground of Alaska's Augustine volcano show morphology common to debris-avalanche deposits. This debris avalanche traveled roughly 11 km from the summit about 450 years ago. Courtesy of Smithsonian Institution, dated 1987.

(B) Debris avalanche deposits from the 1883 eruption of Augustine Volcano entered the Cook Inlet along the north shoreline of the island forming hummocky topography. Photograph by U.S. Geological Survey, April 27, 1986.





**Togiak Tuya, Ahklun Mountains. The Ahklun Mountains form the highest range in Alaska west of the Alaska Range and north of the Alaska Peninsula. A tuya is a table mountain that forms when volcano erupts underneath a glacier. Photograph taken by Darrell S. Kaufman, Professor of Geology and Environmental Science at the Department of Geology of Northern Arizona University in Flagstaff, Arizona, dated 2004.**



(B) Geyser Bight geothermal resource area. Dave Szumigala, 1985.

(A) 'Old Faithful' (spring G8) of Geyser Bight geothermal area, Umnak Island, Alaska (shown here at maximum activity), has had an eruption cycle of 12 minutes, (Shirley Liss, 1988). This area contains one of the hottest and most extensive areas of geothermal activity in Alaska. This is the only area in Alaska where sustained geyser activity has been documented; geothermal activity was observed at five springs during 1988 (Motkya and others, 1993).





# Alaska's Volcanic Types Food for Thought!

# Types of Volcanoes in Alaska

## Shield Volcano: Wrangell



B. Cella, National Park Service, 1987



*Shield Volcano*

*Parks and Plates ©2005 Robert J. Lillie*

# Types of Volcanoes in Alaska

## Strato-cone or composite volcano: Augustine



J. Adleman, U.S. Geological Survey, February 24, 2006

**Composite Volcano**



*Parks and Plates ©2005 Robert J. Lillie*

# Types of Volcanoes in Alaska

Volcanic dome: Novarupta



**Lava  
Dome**



*Parks and Plates ©2005 Robert J. Lillie*

T. Miller, U.S. Geological Survey, June 1979.

# Types of Volcanoes in Alaska

Caldera: Akutan



**Ice Cream  
Cone**



*Parks and Plates ©2005  
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# Types of Volcanoes in Alaska

Cinder cone: Vent Mountain in Aniakchak  
Caldera



*Parks and Plates ©2005  
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# Types of Volcanoes in Alaska

Strato-cone or composite volcano, caldera & dome



**Ice Cream Cone**



*Parks and Plates ©2005  
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**Lava  
Dome**



The lake-filled caldera of Kaguyak volcano reshaped a former strato-cone. Then lava domes formed a peninsula and a small island.  
C. Nye, Alaska Division of Geologic and Geophysical Surveys. August 1982.