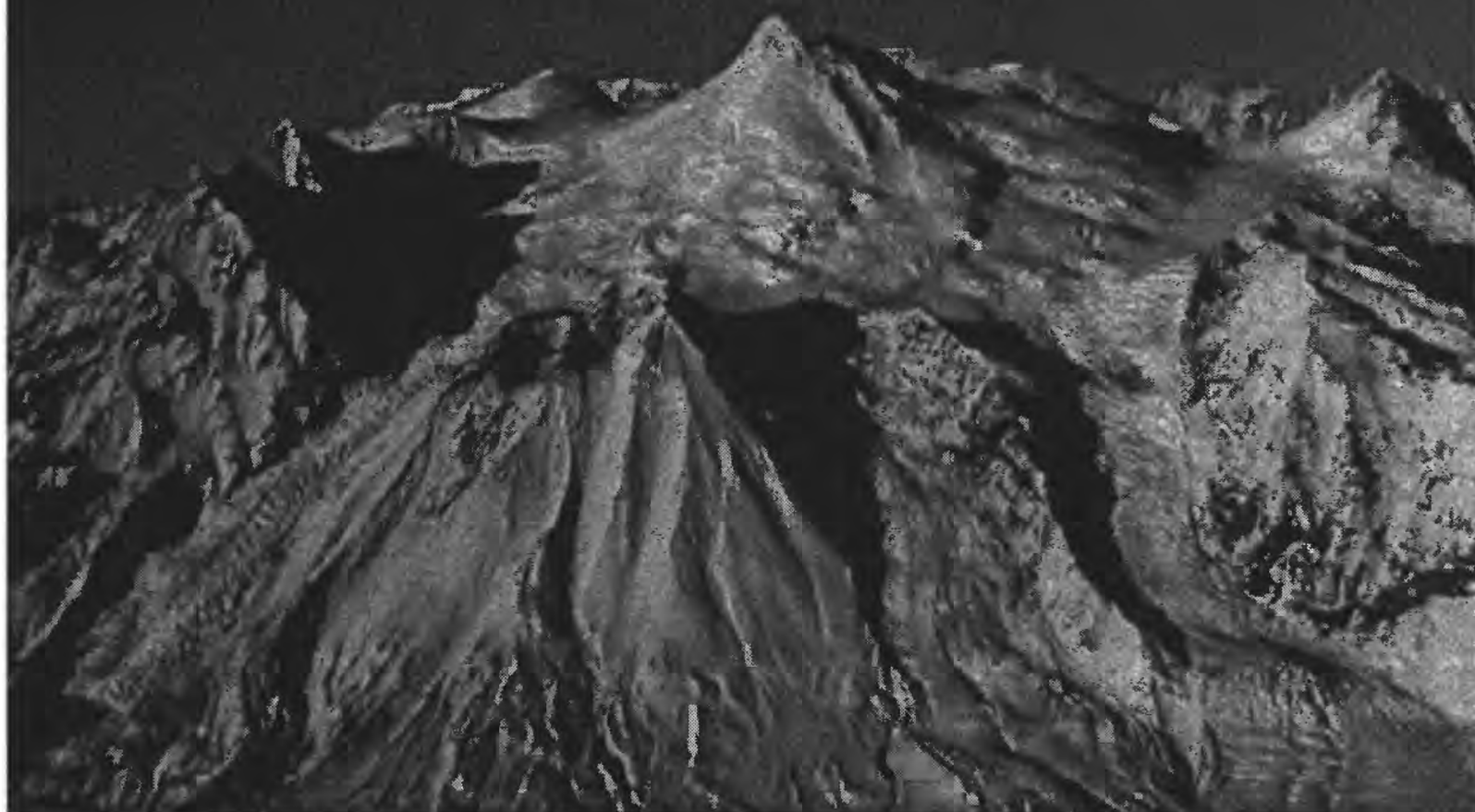


**QUICK REFERENCE TO
ALASKA'S HISTORICALLY
ACTIVE VOLCANOES**



U.S. GEOLOGICAL SURVEY OPEN-FILE REPORT 95-520

U.S. DEPARTMENT OF THE INTERIOR

U.S. GEOLOGICAL SURVEY

QUICK REFERENCE TO ALASKA'S ACTIVE VOLCANOES AND
LISTING OF HISTORICAL ERUPTIONS, 1760-1994

By

Robert G. McGimsey and Thomas P. Miller¹

Open-File Report 95-520

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards or with the North American Stratigraphic Code. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

¹4200 University Drive, Anchorage, Alaska 99508

QUICK REFERENCE TO ALASKA'S HISTORICALLY ACTIVE VOLCANOES

Over 40 active volcanoes occur in Alaska along the 2500-kilometer-long Aleutian volcanic arc (fig. 1). This report summarizes historical data on those volcanoes in condensed outline form and is meant to serve as an abridged reference guide. The information was drawn from a forthcoming more thorough and comprehensive U.S. Geological Survey (USGS) catalog of Alaska's active volcanoes (Miller and others, in review). General information on Alaskan volcanoes can also be found in Simkin and Siebert (1994), Wood and Kienle (1990), Coats (1950), McGimsey and others (1995), Neal and others (1995), Smithsonian Institution (1975-94), and Alaska Geographic Society (1991).

In Alaska, written historical records begin about 1760 when Russian sailors and fur traders began exploring the southern mainland coast and the Aleutian Island chain. Many of the early accounts of volcanic eruptions are brief and incomplete, and more eruptions probably occurred than were reported. Undoubtedly, in some reports the active volcano was misidentified, or, minor (e.g. steaming) and noneruptive (e.g. meteorological) activity was portrayed as "eruptions". For this report we have listed dates for which actual volcanic eruptions are attributed; reports that describe low level emission of steam and gas have been omitted.

Frontispiece is Mount Spurr (center) and Crater Peak (lower center).

Format:

0. NAME

- type of volcano
- location (also refer to Figure 1)
- latitude, longitude
- USGS 1:250,000 quadrangle map(s)
- elevation above sea level
- historical activity (records begin in 1760), "?" after the year indicates the type of eruptive activity is uncertain, or, that the date is questionable

1. WRANGELL:

- shield with summit caldera
- west end of Wrangell Mountains, 80 km east of Glennallen, in Wrangell-St. Elias National Park
- 62°00'N, 144°01'W
- Gulkana, Nabesna, Valdez, McCarthy
- 4317 m
- rare, minor steam plumes

2. SPURR:

- stratovolcano and explosion(?) caldera
- 130 km west of Anchorage, east flank of southern end of the Alaska Range
- 61°18'N, 152°15'W
- Tyonek
- 3374 m; Crater Peak satellite flank vent 2309 m and 3.5 km south of Mt. Spurr summit
- 1953, 1992 (Crater Peak)

3. REDOUBT:

- stratovolcano
- 170 km southwest of Anchorage in Aleutian Range, Lake Clark National Park
- 60°28'N, 152°45'
- Kenai
- 3108 m with a 1.5-km-wide, ice-filled summit crater
- 1902, 1966-68, 1989-90

4. ILIAMNA:

- stratovolcano
- 225 km southwest of Anchorage in Aleutian Range, Lake Clark National Park
- 60°02'N, 153°04'W
- Lake Clark
- 3053 m
- no historic activity; solfataric vents at ~2740 m on eastern flank

5. **AUGUSTINE:**
 - central dome cluster
 - Augustine Island in lower Cook Inlet, 290 km southwest of Anchorage
 - 59°23'N, 153°26'
 - Iliamna
 - 1260 m
 - 1812, 1883, 1908, 1935, 1963-64, 1976, 1986
6. **KATMAI:**
 - stratovolcano with central caldera
 - Alaska Peninsula, 440 km southwest of Anchorage in Katmai National Park
 - 58°16'N, 154°59'W
 - Mt. Katmai
 - 2047 m
 - June 6-8, 1912
7. **NOVARUPTA:**
 - plug dome
 - Alaska Peninsula, 440 km southwest of Anchorage in Valley of Ten Thousand Smokes, Katmai National Park
 - 58°16'N, 155°09'N
 - Mt. Katmai
 - 841 m
 - June 6-8, 1912, 1929-31?
8. **TRIDENT:**
 - dome complex
 - Alaska Peninsula, 440 km southwest of Anchorage in Katmai National Park
 - 54°14'N, 155°07'W
 - Mt. Katmai
 - 1097 m (elevation of 1953 dome)
 - 1953-1968
9. **MAGEIK:**
 - stratovolcano
 - Alaska Peninsula, 440 km southwest of Anchorage in Katmai National Park
 - 58°11'N, 155°14'W
 - Mt. Katmai
 - 2165 m
 - 1927?, 1929?, 1936?, 1946?
10. **MARTIN:**
 - stratovolcano
 - Alaska Peninsula, 440 km southwest of Anchorage in Katmai National Park
 - 58°10'N, 155°21'W
 - Mt. Katmai
 - 1860 m
 - 1913-1919, May 18 1927, Jul 22 1951, Feb 1953, summers 1953 and 1954

11. **PEULIK:**
--stratovolcano with summit domes
--Alaska Peninsula, 540 km southwest of Anchorage
--57°45'N, 156°21'W
--Ugashik
--1474 m
--1814, 1852
12. **UKINREK MAARS:**
--maar
--Alaska Peninsula, 530 km southwest of Anchorage
--57°50'N, 156°30'W
--Ugashik (not shown on map)
--91 m
--Mar 30-Apr 10 1977
13. **CHIGINAGAK:**
--stratovolcano
--Alaska Peninsula, 600 km southwest of Anchorage
--57°08'N, 157°00'W
--Ugashik
--2135 m
--1852?, 1929?, 1971?
14. **ANIAKCHAK:**
--stratovolcano with summit caldera, intracaldera domes, cones, and vents
--Alaska Peninsula, 670 km southwest of Anchorage
--56°53'N, 158°10'W
--Chignik
--1341 m, caldera rim; 1021 m, Vent Mtn. stratocone
--1931
15. **VENIAMINOF:**
--stratovolcano with summit caldera and intracaldera cones
--Alaska Peninsula, 760 km southwest of Anchorage
--56°10'N, 159°23'W
--Chignik
--caldera rim 2507 m, intracaldera cone 2156 m
--1830-40?, Aug 4 1838, 1852, 1874, 1892, 1930, May 23-June 26 1939, Nov 1939, Mar 28 1944, Mar-May 1956, Jun 2 1983-Apr 1984, 1993-94
16. **PAVLOF:**
--stratovolcano
--near southwest end of Alaska Peninsula, 60 km northeast of Cold Bay
--55°25'N, 161°54'W
--Port Moller
--2518 m
--1790, 1825, 1838, 1844, 1846, 1852?, 1866, 1880, 1886, 1892, 1894, 1906, 1910-1911, 1914, 1917, 1922, 1923, 1924, 1929, 1931, 1936, 1937, 1942, 1945, 1947, 1948, 1950, 1951, 1953, 1962, 1966, 1973, 1974, 1975, 1980, 1981, 1983, Apr 1986-Aug 1988

17. **DUTTON**
--stratovolcano
--southwest tip of Alaska Peninsula 30 km east of Cold Bay
--55°11'N, 162°16'W
--Cold Bay
--1473 m
--no historic eruptions; intense seismic swarms in 1984 and 1988
18. **ISANOTSKI:**
--stratovolcano
--Unimak Island, eastern Aleutian Islands, about 80 km west of Cold Bay
--54°45'N, 163°44'W
--False Pass
--2446 m
--1795, 1825, 1830, 1845
19. **SHISHALDIN:**
--stratovolcano
--Unimak Island, eastern Aleutian Islands, about 90 km southwest of Cold Bay
--54°45'N, 163°58'W
--False Pass
--2857 m
--1775-78, 1790, 1824-25, 1827-1830, 1838, 1845 (1842?), 1865, 1880-81, 1883, 1897-1899, 1901, 1912, 1922, 1925, 1927-28, May-Jun 1929, Feb-May 1932, Aug 1946-Jan 1947, 1948, Jul 1955, Dec 28 1963, Jan 28 1967, Sept 13 (-Oct?) 1975, Apr-May 1976, Feb 8 1978, Feb 1979, Mar 1986-Feb 1987
20. **FISHER:**
--caldera with intracaldera domes
--Unimak Island in the eastern Aleutian Islands about 70 km southwest of the tip of the Alaska Peninsula
--54°39'N, 164°26'W
--Unimak
--1095 m (caldera rim)
--1795?, 1826?, 1830?
21. **WESTDAHL:**
--uncertain; possibly a pyroclastic cone on a truncated ancestral stratovolcano
--Unimak Island in the eastern Aleutian Islands about 85 km southwest of the tip of the Alaska Peninsula
--54°31'N, 164°39'W
--Unimak
--1560 m
--1795, 1796, 1820, 1827-30, 1964, Feb 3-9 1978, Feb 8-9 1979, Nov 29 1991-mid Jan 1992

22. AKUTAN:

- stratovolcano with caldera
- west-central Akutan Island, eastern Aleutian Islands about 185 km southwest of tip of Alaska Peninsula
- 54°08'N, 165°58'W
- Unimak
- 1303 m
- 1790, 1828, 1845, Mar 1848, 1852, 1865, 1867, 1883, 1887, 1892, 1896, 1907, 1908, 1911, 1912, 1928, Dec (May?) 1929, May-Aug 1931, Dec 1946-Jan 1947, Apr 29-Aug? 1948, Oct 1951, 1953, Mar-May 1973, Feb 11 1974, Oct 15 1976-May 1977, Sept-Oct 1978, Jul 8 1980, Jan-Mar 1987, Jun 1987, Mar-Apr 1988, Mar 8-mid Dec 1992

23. MAKUSHIN:

- stratovolcano with caldera and parasitic cone
- Unalaska Island, eastern Aleutian Islands about 250 km south-southwest of tip of the Alaska Peninsula
- 53°53'N, 166°56'W
- Unalaska
- 2036 m
- 1768-1779, 1790 (1792?), 1802, 1818, Jun 1826, 1827-38, 1845, 1865, 1867, 1883, 1907, 1912, Dec 1926, Oct 1938, Dec 20 1951, 1952, 1980

24. BOGOSLOF:

- stratovolcano
- Bogoslof Island, 43 km north of Umnak Island and about 312 km west-southwest of the tip of Alaska Peninsula
- 53°56'N, 168°02'W
- Umnak
- 101 m high
- May 1796-1804, 1806-1823, Sept 27 1883 (1882?)-1895, Mar 1 1906-Jan 1907?, Jan 1907-Sept 1907, Sept 1909-1910, Jul 1926-1931?, Sept 1951, Jul 6-24 1992

25. OKMOK:

- central volcanic complex with nested caldera
- Umnak Island, in the eastern Aleutian Islands about 340 km west-southwest of the tip of Alaska Peninsula
- 53°24'N, 168°10'W
- Umnak
- 1073 m
- 1805, Mar 1 1817, 1824-30, 1878, 1899, Mar 21-May 13 1931, 1936, 1938, Jun 1943, Jun-Dec 1945, Aug 1958, Oct 1960, Mar 24 1981, Jul 8 1983, Nov 1986-Feb 1988

26. VSEVIDOF:

- stratovolcano
- Umnak Island, westernmost of the Fox Island group in the eastern Aleutian Islands, about 388 km west-southwest of the tip of the Alaska Peninsula
- 53°08'N, 168°41'W
- Umnak
- 2149 m
- 1784, May 30 1790, 1817, 1830, 1878, 1880, Mar 11-12 1957?

27. **KAGAMIL:**
--stratovolcano
--Kagamil Island, northeasternmost of the Islands of the Four Mountains group; 467 km west-southwest of the tip of the Alaska Peninsula
--52°58'N, 169°43'W
--Samalga Island
--893 m high
--Dec 1929
28. **CARLISLE:**
--stratovolcano
--Carlisle Island, in the Islands of the Four Mountains group; about 491 km west-southwest of the tip of the Alaska Peninsula
--52°54'N, 170°03'W
--Amukta
--1620 m
--1774, 1828, 1838, Nov 1987
29. **CLEVELAND:**
--stratovolcano
--Chuginadak Island, east-central Aleutians in the Islands of the Four Mountains, 490 km west of the tip of the Alaskan Peninsula
--52°49'N, 169°57'W
--Samalga Island
--1730 m
--1893, 1897, 1929?, Jan 1932, 1938, Jun 10-12 1944, Nov-Dec 1951?, 1975?, Apr 28-Jul 1986, Jun-Aug 1987, Apr-May 1994
30. **YUNASKA:**
--shield volcano with caldera and associated stratocones
--Yunaska Island, in the Islands of the Four Mountains group; about 540 km west-southwest of the tip of the Alaska Peninsula
--52°38'N, 170°38'W
--Amukta
--550 m
--1817, 1824, 1830, 1929?, Nov 3-4 1937
31. **AMUKTA:**
--stratovolcano
--Amukta Island, westernmost of the Islands of the Four Mountains group; about 585 km west-southwest of the tip of the Alaska Peninsula
--52°30'N, 171°15'W
--Amukta
--1066 m
--1770?, 1786-1791, 1876, Feb 1963, Jul 12 1984, Aug-Sept 1987

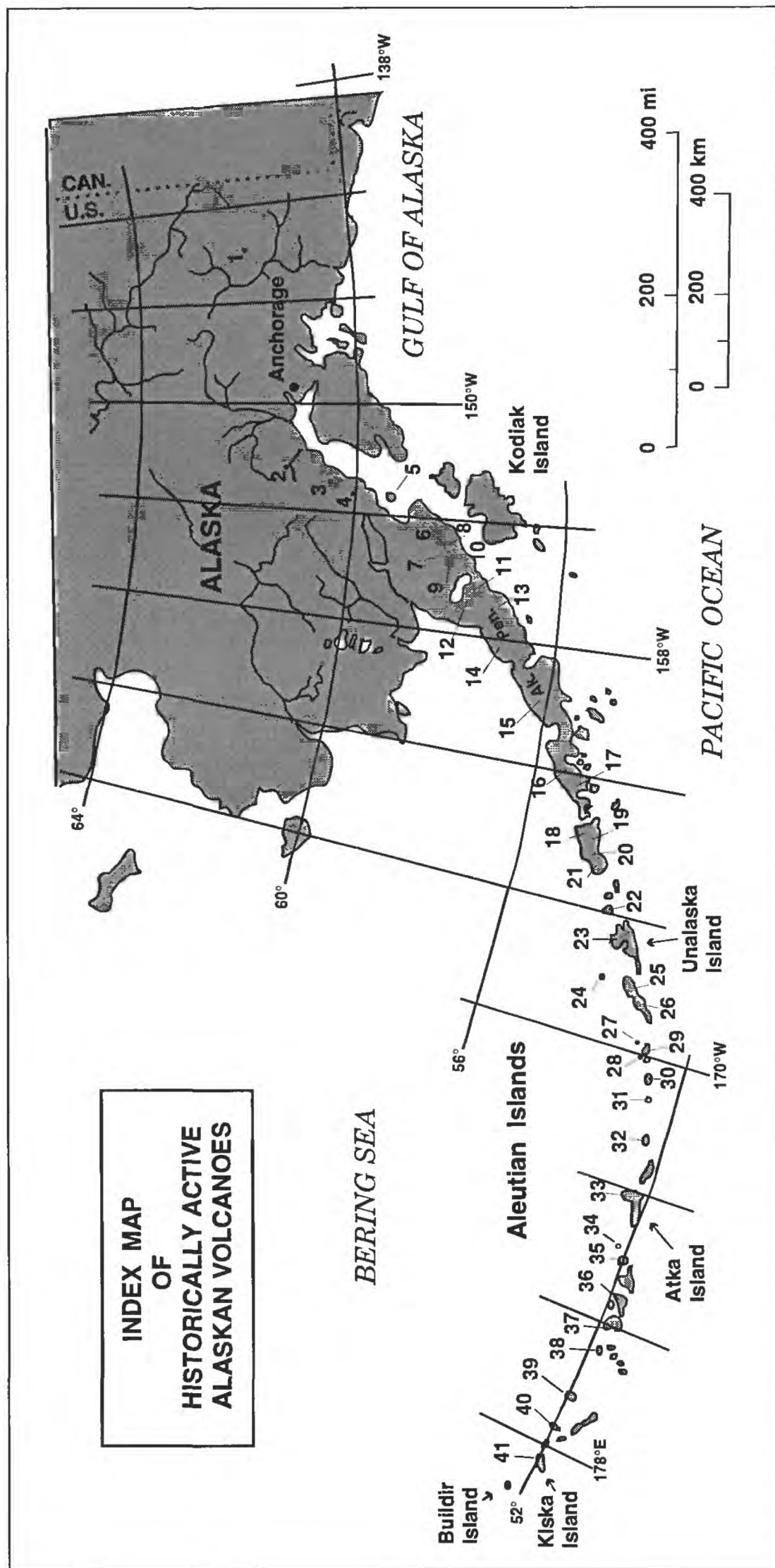
32. **SEGUAM (Pyre Peak):**
--stratovolcano
--Seguam Island is in the central Aleutian arc, 645 km west-southwest of the tip of the Alaskan Peninsula
--52°19'N, 172°31'W
--Seguam
--1054 m
--1786-1790, 1827, Dec 1891, spring 1892, 1901?, 1927, Mar 6 1977, Dec 27 1992
33. **KOROVIN:**
--stratovolcano
--Atka Island, in the central Aleutian arc about 762 km west-southwest of the tip of the Alaska Peninsula
--52°23'N, 174°09'W
--Atka
--1533 m
--1812 (Kliuchef)?, 1829-30, 1844, 1907?, 1951?, 1953-54?, 1973, 1976?, May 23 1986, Mar 18 1987
34. **KASATOCHI:**
--stratovolcano
--Kasatochi Island, 20 km north-northwest of Atka Island in the central Aleutian arc, about 838 km west-southwest of the tip of the Alaska Peninsula
--52°11'N, 175°30'W
--Atka
--314 m
--1760, 1827, 1828
35. **GREAT SITKIN:**
--stratovolcano with caldera and dome
--Great Sitkin Island, central Aleutians, about 965 km west-southwest of the tip of the Alaska Peninsula
--52°05'N, 176°08'W
--Adak
--1740 m
--1792, 1828-29, 1904, Nov 1933, Mar 1945, Aug 14 1946, 1949-50?, Feb 19-Sept 1974?
36. **KANAGA:**
--stratovolcano within caldera
--Kanaga Island, one of the Andreanof group near the center of the Aleutian arc; 965 km west-southwest of the tip of the Alaska Peninsula
--51°55'N, 177°10'W
--Adak
--1307 m
--1763?, 1768?, 1786?, 1790?, 1791, 1827, 1829, 1904?-May 1906, 1933?, 1993-94

- 37. TANAGA:**
--stratovolcano with two flanking stratovolcanoes
--Tanaga Island, westernmost of the Andreanof Islands, about 1024 km west-southwest of the tip of Alaska Peninsula
--51°53'N, 178°08'W
--Gareloi Island
--1806 m
--1763-1770?, Jun 7 1791, 1829, 1914
- 38. GARELOI:**
--stratovolcano
--Gareloi Island, northernmost of the Delarof group, Andreanof Islands, about 1062 km west-southwest of the tip of the Alaska Peninsula
--51°47'N, 178°48'W
--Gareloi Island
--1573 m
--1760, 1790-92, 1828-29, 1873, 1922, 1927, Apr 1929-30, Aug-Sept 1980, Jan 15 1982, Sept 4 1987
- 39. CERBERUS (Semisopchnoi):**
--intracaldera stratocones
--Semisopchnoi Island, easternmost of the Rat Island Group, Andreanof Islands, about 1168 km west-southwest of the tip of the Alaska Peninsula
--51°56'N, 179°35'E
--Rat Islands
--800 m
--1772, 1790, 1792, 1830, 1873?, Sugarloaf? 1987
- 40. LITTLE SITKIN:**
--stratovolcano within nested calderas
--Little Sitkin Island, in the Rat Island group of the western Aleutian Islands, about 1200 km west-southwest of the tip of the Alaska Peninsula, and 76 km northwest of Constantine Harbor on Amchitka Island
--51°57'N, 178°32'E
--Rat Islands
--1188 m
--1776, 1828-30, ca. 1900?
- 41. KISKA:**
--stratovolcano
--Kiska Island, westernmost of the Rat Island group, in the western Aleutian Islands, 1270 km west-southwest of the tip of the Alaska Peninsula, and about 400 km west of Adak
--52°06'N, 177°36'E
--Kiska
--1220 m
--1907, 1927, Jan 24 1962, Mar 18 1964, Sept 11-16 1969, Apr 15 1987?, Jun 1 1990

References Cited:

- Alaska Geographic Society, 1991, Alaska's volcanoes, v. 18, no. 2, 80 p.
- Coats, R.R., 1950, Volcanic activity in the Aleutian arc: U.S. Geological Survey Bulletin 974-B, p. 35-47.
- McGimsey, R.G., Neal, C.A., and Doukas, M.P., 1995, 1992 volcanic activity in Alaska: Summary of events and response of Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 95-83, 26 p.
- Neal, C.A., Doukas, M.P., and McGimsey, R.G., 1995, 1994 volcanic activity in Alaska: Summary of events and response of the Alaska Volcano Observatory: U.S. Geological Survey Open-File Report 95-271, 18 p.
- Miller, T.P., McGimsey, R.G., Riehle, J.R., Richter, D.H., Yount, M.E., and Dumoulin, J.A, Catalog of the active volcanoes of Alaska: U.S. Geological Survey Bulletin (in review).
- Simkin, T., and Siebert, L., 1994, Volcanoes of the World, Geoscience Press, Inc., Tucson, Arizona, 349 p.
- Smithsonian Institution, (1975-1989), Scientific Event Alert Network Bulletin, v. 1-14.
- Smithsonian Institution, (1989-1994), Global Volcanism Network Bulletin, v 14-19.
- Wood, C.A., and Kienle, J., 1990, Volcanoes of North America, Cambridge University Press, New York, 354 p.

Figure 1. Index map of active Alaskan volcanoes.



- | | | | | | |
|--------------|----------------|----------------|--------------|------------------|-------------------|
| 1. Wrangell | 8. Trident | 15. Veniaminof | 22. Akutan | 29. Cleveland | 36. Kanaga |
| 2. Spurr | 9. Mageik | 16. Pavlof | 23. Makushin | 30. Yunaska | 37. Tanaga |
| 3. Redoubt | 10. Martin | 17. Dutton | 24. Bogoslof | 31. Amukta | 38. Gareloi |
| 4. Iliamna | 11. Peulik | 18. Isanotski | 25. Okmok | 32. Seguam | 39. Cerberus |
| 5. Augustine | 12. Ukinrek | 19. Shishaldin | 26. Vsevidof | 33. Korovin | 40. Little Sitkin |
| 6. Katmai | 13. Chiginagak | 20. Fisher | 27. Kagamil | 34. Kasatochi | 41. Kiska |
| 7. Novarupta | 14. Aniakchak | 21. Westdahl | 28. Carlisle | 35. Great Sitkin | |