

Global Change Data Encyclopedia

Aleutian Islands

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The Aleutian Islands extends latitude from 51°12'35"N to 55°22'14"N and longitude about 32 degrees from 165°45'10"E to 162°21'10"W, it is a chain volcanic islands belonging to both the United States and Russia^[1-3] (Figure 1, 2). The islands are formed in the northern part of the Pacific Ring of Fire. They form part of the Aleutian Arc in the Northern Pacific Ocean, extending about 1,900 km westward from the Alaska Peninsula toward the Kamchatka Peninsula in Russia, and mark a dividing line between the Bering Sea to the north and the Pacific Ocean to the south. The islands comprise 6 groups of islands (east to west): the Fox Islands^[4-5], islands of Four Mountains^[6-7], Andreanof Islands^[8-9], Rat Islands^[10-11], Near Islands^[12-13] and Kommandor Islands^[14-15]. The first 5 islands belong to the United States, and the extreme western end, the small, geologically related Kommandor



Figure 1 Dataset of Aleutian Islands in .kmz format

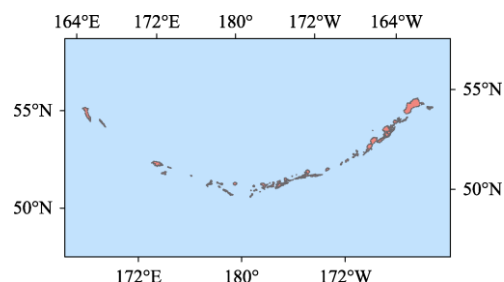


Figure 2 Dataset of Aleutian Islands in .shp format

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[2] Liu, C., Shi, R. X., Zhu, Y. Q. Aleutian Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.12.V1.

Islands belong to Russia. The Aleutian Islands occupy a total area of 17,653.73 km² and the total coastline is 8,605.12 km. There are total 2,030 islands, including 49 islands with area great than 10 km² and 24 island with area great than 100 km². The largest islands in the Aleutians are Attu (the furthest from the mainland), and Unalaska, Umnak, and Unimak in the Fox Islands. The largest of those is Unimak Island, with an area of 4,077.93 km², followed by Unalaska Island with an area of 2,724.71 km² and the longest coastline 1,063.46 km. Aleutian Islands are composed by 6 islands, i.e., Fox Islands, Islands of Four Mountains, Andreanof Islands, Rat Islands Near Islands, and Kommandor Islands. The geo-location, area, coastline of these main islands of Aleutian Islands are shown in Table 1.

Table 1 Main islands of Aleutian Islands

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Fox Islands	52°46'0"N-55°3'9"N, 162°21'10"W-169°15'7"W	9,559.52	3,138.67
Islands of Four Mountains	52°26'40"N-53°5'1"N, 169°39'40"W-171°18'56"W	548.92	349.78
Andreanof Islands	52°12'35"N-52°25'12"N, 172°17'45"W-179°8'60"W	3,991.47	3,097.89
Rat Islands	51°20'54"N-52°8'10"N, 177°11'52"E-179°46'24"E	974.14	873.69
Near Islands	52°20'5"N-53°0'42"N, 172°27'45"E-175°58'29"E	1,166.78	615.89
Kommandor Islands	54°29'45"N-55°22'14"N, 165°45'10"E-168°6'9"E	1,412.71	526.95
Total		17,653.73	8,605.12

Table 2 Main islands of Fox Islands

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Unimak Island	54°23'20"N-55°3'9"N, 164°56'48"W-163°2'35"W	4,077.93	517.36
Unalaska Island	53°13'58"N-54°1'9"N, 167°51'14"W-166°12'21"W	2,724.71	1,063.46
Umnak Island	52°49'11"N-53°34'1"N, 169°7'1"W-167°47'6"W	1,786.40	452.48
Akutan Island	54°1'59"N-54°13'37"N, 166°6'59"W-165°39'28"W	332.35	132.43
Akun Island	54°6'20"N-54°17'54"N, 165°41'15"W-165°23'6"W	162.60	121.81
Sanak Island	54°22'10"N-54°29'29"N, 162°50'11"W-162°31'57"W	121.84	96.81
Sedanka Island	53°42'22"N-53°51'23"N, 166°18'38"W-166°5'9"W	101.85	92.45
Tigalda Island	54°3'49"N-54°8'15"N, 165°13'13"W-164°55'9"W	95.09	97.55
Avatanak Island	54°2'17"N-54°5'56"N, 165°28'59"W-165°14'1"W	36.74	49.10
Unalga Island	51°34'6"N-51°35'23"N, 179°3'49"W-179°1'57"W	26.89	28.84
Caton Island	54°22'2"N-54°25'8"N, 162°28'56"W-162°21'11"W	18.57	28.19
Rootok Island	54°1'25"N-54°4'1"N, 165°34'26"W-165°28'57"W	13.16	19.22
Ugamak Island	54°11'26"N-54°13'48"N, 164°53'5"W-164°45'45"W	11.22	31.18
Amaknak Island	53°51'58"N-53°55'35"N, 166°34'00"W-166°30'9"W	8.77	29.70
Long Island	54°23'8"N-54°26'7"N, 162°51'43"W-162°47'24"W	6.65	23.22
Samalga Island	52°46'2"N-52°48'13"N, 169°14'51"W-169°9'32"W	3.90	15.39
Ogangen Island	53°25'39"N-53°27'44"N, 166°53'11"W-166°51'52"W	3.17	10.28
Elma Island	54°21'41"N-54°22'33"N, 162°31'7"W-162°27'2"W	2.95	10.90
Vsevidof Island	52°58'32"N-52°59'31"N, 168°29'12"W-168°26'52"W	2.19	12.44
Clifford Island	54°22'20"N-54°23'35"N, 162°47'24"W-162°45'43"W	1.73	8.80
Aiktak Island	54°10'42"N-54°11'23"N, 164°50'53"W-164°48'55"W	1.51	10.28
Anangula Island	52°59'39"N-53°0'47"N, 168°55'23"W-168°53'45"W	1.43	7.49
Egg Island	53°51'21"N-53°52'9"N, 166°3'41"W-166°2'18"W	1.30	6.52

The Fox Islands are the eastern islands in the Aleutian Islands chain in Alaska, east of the Samalga Pass and islands of Four Mountains. The larger islands of the Fox Islands from west to east are Umnak, Unaraska, Amaknak, Akutan, Akun, Unimak and Sanak (Table 2). The largest area of Unimak is 4,077.93 km², and the longest coastline is 1,063.46 km of Unaraska. Fox Islands have a total of 23 islands more than 1 km², 7 more than 100 km². The Fox Islands have a total area of 9,559.52 km² and a total coastline of 3,138.67 km.

The islands of Four Mountains are an archipelago in southwest Alaska and part of the Aleutian Islands. The islands of Four Mountains are bounded by the Fox Islands to the east and the Andreea Islands to the west, between the Pacific Ocean and the Bering Sea. There are mainly 8 islands in the Four mountain Islands, from west to east are Amukta Island, Chagulak Island, Yunaska Island, Chuginadak Island, Uliaga Island, Gagamil Island (Table 3). The largest area of the Island is Yunaska, 172.18 km² and the smallest area is Chagulak Island, 8.6 km². The longest coastline of Island is Chuginadak, 98.95 km.

The total area of the islands of Four Mountains is 548.92 km², and the total length of the coastline is 349.78 km.

Table 3 Main islands of islands of Four Mountains

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Yunaska Island	52°32'35"N-52°42'5"N, 170°50'45"W-170°33'23"W	172.18	74.80
Chuginadak Island	52°46'20"N-52°53'40"N, 170°0'49"W-169°40'2"W	170.06	98.93
Herbert Island	52°43'1"N-52°47'29"N, 170°11'13"W-170°3'5"W	54.19	36.57
Amukta Island	52°26'54"N-52°31'51"N, 171°18'56"W-171°11'44"W	50.05	41.84
Carlisle Island	52°51'26"N-52°55'29"N, 170°7'29"W-169°59'36"W	42.22	30.57
Gagamil Island	52°56'46"N-53°2'8"N, 169°45'52"W-169°39'40"W	42.13	32.46
Uliaga Island	53°2'46"N-53°5'1"N, 169°47'59"W-169°44'24"W	9.38	15.32
Chagulak Island	52°33'27"N-52°35'11"N, 171°10'38"W-171°6'55"W	8.61	14.03

The Andreanof islands are islands in southwest Alaska and is part of the Aleutian Islands. The Andreanof Islands are bounded by the islands of Four Mountains to the east and the Rat Islands to the west. They are generally located in the middle of the Aleutian Islands between the Pacific Ocean and the Bering Sea. There are 577 islands larger than 100 m² in the Andreea. Among them, one island with an area greater than 1,000 km² and 37 islands with an area larger than 1 km² (Table 4). The total area of the island is 3,991.47 km² and the total coastline is 3,098.02 km² long. The largest island is Atka Island, with an area of 1,055.43 km².

The other main islands of the Andreanof Islands are Adak Island, Anaga Island, Amulia Island, Kanaga Island, Seguam Island, Great Sitkin Island, Kagalaska Island, Little Tanaga Island, Gareloi Island, Umak Island, Amatignak Island, Ulak Island, Igitkin Island, Chugul Island, Kavalga Island, Tagalak Island, Ogliuga Island, Bobrof Island, Kasatochi Island, Skagul Island, Tanaklak Island, Kanu Island, Elf Island, Unalga Island, Tagadak Island, Ilak Island, Ringgold Island, Asuksak Island, Sadatanak Island, Solt Island, Dora Island, Asiak Island, Koniuji Island.

The Lat Islands are volcanic islands belonging to the Aleutian Islands, southwest of Alaska, the Near Islands to its west, and the Andreanof Islands to the east. The larger islands from west to east are Kiska Island, Little Kiska Island, Segula Island, Khvostof Island, Davidof Island, Little Sitkin Island, Amchitka Islan, Semisopochuoi Island (Table 5). The largest island is Amchitka (319.87 km²) and the island has a longest coastline of 304.12 km. The island has a total area of 974.18 km² and a total coastline of 873.7 km.

Table 4 Main islands of Andreanof Islands

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Atka Island	51°59'59"N–52°25'12"N, 175°20'31"W–173°59'16"W	1055.39	651.62
Adak Island	51°35'22"N–52°0'7"N, 176°59'43"W–176°25'6"W	720.48	454.25
Tanaga Island	51°35'42"N–51°55'13"N, 178°13'46"W–177°36'58"W	517.21	240.31
Amulia Island	52°1'15"N–52°9'35"N, 174°3'17"W–172°57'13"W	458.90	309.57
Kanaga Island	51°39'9"N–51°56'37"N, 177°42'33"W–177°2'52"W	368.70	259.42
Seguam Island	52°14'49"N–52°23'33"N, 172°38'00"W–172°17'45"W	207.35	88.40
Great Sitkin Island	51°58'1"N–52°7'3"N, 176°12'46"W–175°58'19"W	154.21	78.24
Kagalaska Island	51°43'36"N–51°52'21"N, 176°25'34"W–176°15'54"W	118.60	106.95
Little Tanaga Island	51°46'9"N–51°53'2"N, 176°14'10"W–175°59'45"W	71.39	97.18
Gareloi Island	51°44'44"N–51°50'18"N, 178°52'26"W–178°44'1"W	67.63	34.04
Umak Island	51°50'46"N–51°54'48"N, 176°7'7"W–175°57'2"W	37.91	52.55
Amatignak Island	51°12'51"N–51°18'10"N, 179°9'00"W–179°3'27"W	35.59	39.27
Ulak Island	51°18'20"N–51°24'11"N, 179°0'16"W–178°54'21"W	31.53	45.70
Igitkin Island	51°57'50"N–51°51'59"N, 175°57'48"W–175°48'25"W	19.26	35.10
Chugul Island	51°54'52"N–51°57'39"N, 175°52'40"W–175°45'34"W	17.88	33.12
Kavalga Island	51°32'21"N–51°34'43"N, 178°51'49"W–178°44'1"W	15.53	40.23
Tagalak Island	51°55'55"N–51°58'33"N, 175°44'50"W–175°38'53"W	14.70	26.80
Ogliuga Island	51°35'6"N–51°36'56"N, 178°41'16"W–178°36'37"W	10.49	27.09
Bobrof Island	51°53'16"N–51°55'38"N, 177°28'11"W–177°25'3"W	7.76	14.79
Kasatochi Island	52°9'18"N–52°11'10"N, 175°31'51"W–175°29'24"W	7.03	11.08
Skagul Island	51°34'50"N–51°36'29"N, 178°36'36"W–178°33'43"W	5.20	21.84
Tanaklak Island	51°56'51"N–51°57'50"N, 176°8'17"W–176°5'19"W	3.82	10.77
Kanu Island	51°55'44"N–51°57'20"N, 176°3'25"W–176°1'34"W	3.73	11.50
Elf Island	51°41'57"N–51°43'56"N, 176°32'39"W–176°30'58"W	3.10	17.28
Unalga Island	53°57'8"N–53°59'57"N, 165°12'00"W–166°4'29"W	2.65	14.43
Sagchudak Island	52°0'32"N–52°2'1"N, 174°30'1"W–174°28'35"W	2.37	10.70
Tagadak Island	51°56'41"N–51°57'50"N, 176°1'12"W–175°59'31"W	2.29	7.05
Oglodak Island	51°58'37"N–51°59'26"N, 175°28'13"W–175°25'53"W	1.82	10.36
Ilak Island	51°28'20"N–51°29'1"N, 178°18'14"W–178°16'25"W	1.54	6.20
Ringgold Island	51°47'48"N–51°48'30"N, 176°50'31"W–176°48'20"W	1.49	7.39
Asuksak Island	51°55'44"N–51°56'30"N, 176°6'53"W–176°5'37"W	1.34	5.27
Sadatanak Island	52°1'36"N–52°2'21"N, 174°26'31"W–174°24'42"W	1.32	7.47
Solt Island	52°9'56"N–52°10'51"N, 174°39'20"W–174°37'34"W	1.27	8.46
Dora Island	51°48'27"N–51°49'14"N, 176°48'26"W–176°46'39"W	1.27	9.59
Asiak Island	51°56'43"N–51°57'25"N, 176°10'14"W–176°8'39"W	1.26	7.67
Koniuji Island	52°12'53"N–52°13'39"N, 175°8'30"W–175°7'25"W	1.06	5.27

The Near Islands are the westernmost islands of Aleutian Islands, the Commander Islands of the Russian Aleutian Islands to the west, the American Rat Islands to the east, and the north-south between the Bering Sea and the Pacific Ocean. Attu and Agattu are the two largest islands. In addition to some of the reefs between Attu Island and Agatu Island, the other larger island is Semichi Island, including Alaid Island, Nizki Island and Shemya Island. Buldir Island is located at the easternmost tip of Near Islands. There are 6 islands with an area of more than 1 km² in the Near Islands (Table 6). The largest island is Attu with an area of 887.97 km². It is also the island with longest coastline, 317.37 km.

The total area of Near Islands is 1,166.83 km² and a total coastline, 616.05 km.

Table 5 Main islands of Lat Islands

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Amchitka Island	51°20'54"N–51°40'00"N, 178°36'27"E–179°28'13"E	319.86	304.12
Kiska Island	51°49'32"N–52°8'10"N, 177°11'52"E–177°40'30"E	280.23	214.31
Semisopochuoi Island	51°52'15"N–52°1'38"N, 179°28'18"E–179°46'24"E	223.04	78.03
Little Sitkin Island	51°53'42"N–51°59'42"N, 178°25'26"E–178°35'33"E	68.76	64.89
Segula Island	51°59'12"N–52°3'10"N, 178°5'16"E–178°11'25"E	33.55	35.79
Rat Island	51°45'36"N–51°50'10"N, 178°12'20"E–178°23'13"E	29.78	48.94
Little Kiska Island	51°56'28"N–51°58'23"N, 177°37'10"E–177°42'25"E	7.91	21.48
Davidof	51°56'43"N–51°58'37"N, 178°18'53"E–178°21'58"E	3.75	15.48
Khvostof Island	51°58'6"N–51°59'13"N, 178°15'44"E–178°18'13"E	2.64	9.02
Bird Rock	51°39'17"N–51°40'7"N, 178°37'8"E–178°38'31"E	1.43	9.92

Table 6 Main islands of Near Islands

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Attu Island	52°44'40"N–53°0'42"N, 172°27'45"E–173°25'54"E	887.93	317.25
Agattu Island	52°21'17"N–52°30'48"N, 173°20'59"E–173°46'33"E	227.57	140.63
Buldir Island	52°20'5"N–52°22'33"N, 175°52'6"E–175°58'29"E	19.38	21.60
Shemya Island	52°42'12"N–52°44'31"N, 174°3'7"E–174°9'26"E	15.56	26.75
Nizki Island	52°43'7"N–52°45'10"N, 173°56'36"E–174°1'17"E	8.06	23.70
Alaid Island	52°44'42"N–52°46'30"N, 173°51'35"E–173°56'33"E	6.80	19.44

The Kommandor Islands locate in the westernmost end of Aleutian Islands. They are part of the Bering Islands of Russia and 175 km from the eastern part of Kamchatka Peninsula in the far East of Russia. The Kommandor Islands include Bering, Medey, two largest islands and some small islands and reefs. These small islands, among the reefs, Kamen Toporkov are the largest reef. The area of Bering Island and Medell Island are 1,187.4 and 224.84 km², and the coastline are 310.84 and 197.79 km, respectively. The area of Kamen Toporkov reef is 0.19 km² and the coastline is 1.74 km.

The total area of Kommandor Islands is 1,412.71 km² and a total coastline is 526.95 km.

Table 7 Main islands of Kommandor Islands

Name of islands ^[16]	Geo-location	Area (km ²)	Coastline (km)
Bering Island	54°40'42"N-55°22'14"N, 165°45'10"E-166°40'47"E	1,187.41	310.84
Medny Island	54°29'45"N-54°52'10"N, 167°26'12"E-168°6'9"E	224.84	197.79

The Aleutian Islands dataset was developed based on integration among the Google Earth images and related maps and records. The dataset is archived in the .shp and .kmz data formats with the compressed data size of 27.5 MB.

References

[1] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Aleutian Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.12.V1.

[2] Wikipedia. Aleutian Islands [Z]. https://en.wikipedia.org/wiki/Aleutian_Islands.

[3] Aleutian Islands. The World Book Encyclopedia (Volume 11) [M]. Field Enterprises Educational Cooperation, USA. 1976, 324.

[4] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Fox Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.05.V1.

[5] Wikipedia. Fox Islands [Z]. https://en.wikipedia.org/wiki/Fox_Islands

[6] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Four Mountains Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.04.V1.

[7] Wikipedia. Islands of Four Mountains [Z]. https://en.wikipedia.org/wiki/Islands_of_Four_Mountains.

[8] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Andreanof Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.03.V1.

[9] Wikipedia. Andreanof Islands [Z]. https://en.wikipedia.org/wiki/Andreanof_Islands

[10] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Rat Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.09.V1.

[11] Wikipedia. Rat Islands [Z]. https://en.wikipedia.org/wiki/Rat_Islands.

[12] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Near Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.07.V1.

[13] Wikipedia. Near Islands [Z]. https://en.wikipedia.org/wiki/Near_Islands.

[14] Liu, C., Yang, A. Q., Hu, W. Y., *et al.* Commander Islands [DB/OL]. Global Change Research Data Publishing & Repository, 2016. DOI: 10.3974/geodb.2016.08.11.V1.

[15] Wikipedia. Commander Islands [Z]. https://en.wikipedia.org/wiki/Commander_Islands

[16] Department of the Interior, U.S. Geological Survey [Z]. Geographical Names Information System (GNIS). <https://geonames.usgs.gov/apex/f?p=138:2:0::NO:RP::>