

Global Change Data Encyclopedia

Haidingnuoer Lake, Qinghai-Tibet Plateau, China

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Haidingnuoer Lake, also known as Nanhainuoer, is a sulfuric acid subtype saltwater lake on the Qinghai-Tibet Plateau. Its geo-location is 35°29'52"N–35°37'38"N, 93°3'44"E–93°17'24"E (Figure 1, Figure 2). It belongs to Zhidu county, Yushu Tibetan autonomous prefecture, Qinghai province. It is located on the southeast side of Kusai Lake in the south of the East Kunlun Mountains, and it is adjacent to the Kunlun Mountains in the north and Hoh Xil Mountain in the south. Haidingnuoer Lake belongs to a tectonic fault depression, with an elevation of 4,470 m. The terrain is high in the north and south and low in the east and west. It is between the Kusai Lake and Salt Lake, 10 km far away from Kusai Lake at its northeast and 7 km far away from Salt Lake at its east. National road No. G109 (Beijing–Lhasa) and Qinghai-Tibet railway pass by at its east, and the distance from Haidingnuoer Lake to No. G109 and Qinghai-Tibet railway is 25 km.

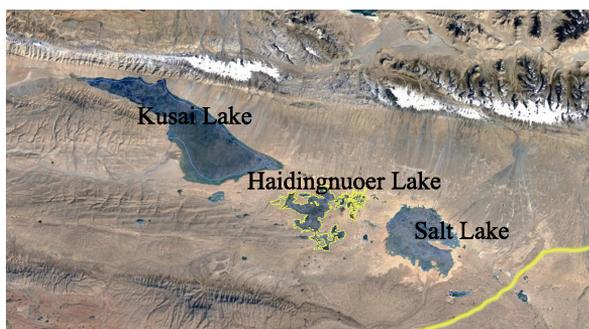


Figure 1 Data map of Haidingnuoer Lake (.kmz format)

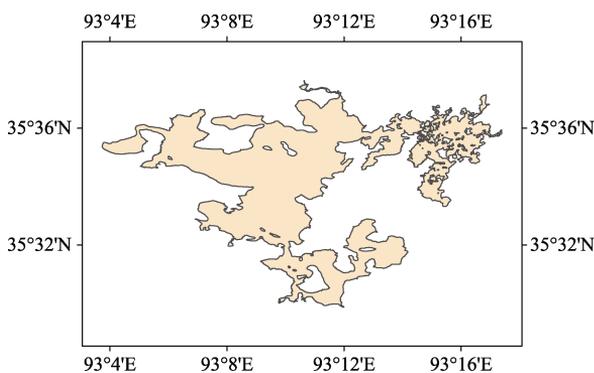


Figure 2 Visualization map of Haidingnuoer Lake (.shp format)

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[2] Gou, Z. J., Liu, F. G. Haidingnuoer Lake [DB/OL]. Global Change Research Data Publishing & Repository, 2019. DOI: 10.3974/geodb.2019.01.04.V1.

The lake area is located in the alpine steppe semi-arid climate zone. The annual average temperature is from -4°C to 2°C and the annual average precipitation is 200 mm (Table 1). The lake area is harbor-shaped, irregular, with many narrow passages between bays (Figure 2). It is a semi-closed lagoon with an area of 81.96 km^2 and a lake-shore of 269.40 km (2015). There are 79 islands in different shapes in the lake, of which 5 islands are less than 100 m^2 in area. The largest island is 1.56 km^2 , and the shoreline is 8.00 km , while the smallest island is 37 m^2 and the shoreline is 23 m ^[1].

The water source of Haidingnuoer Lake is mainly dependent on seasonal creek runoff and subsurface flow. The Haiding River is the main river that flows into the lake. It is originated from the north of the Gaoling Mountain in the Hoh Xil Mountains. The river basin is roughly in east-west direction, and connects to the water system of the inland Kusai Lake in the west and north. The lake water is turbid, light green, slightly smelly, with the water density of 1.019, the pH value of 8.6, and the salinity of 27.57 g/L ^[3]. There are mosses and water fleas in the lake. The lakeside gravel is bare.

The dataset was developed based on Google Earth (2015) and related maps. The dataset is stored in .kmz and .shp^[4] formats and consists of 22 files with a data size of 8.82 MB (compressed to 2 files, 3.03 MB).

References

- [1] Gou, Z. J., Liu, F. G. Haidingnuoer Lake [DB/OL]. Global Change Research Data Publishing & Repository, 2019. DOI: 10.3974/geodb.2019.01.04.V1.
- [2] Editorial Office of State Annals of Yushu prefecture. State Annals of Yushu prefecture [M]. Xi'an: Sanqin Publishing House, 2005.
- [3] Editorial Office of Encyclopedia of Rivers and Lakes in China. Encyclopedia of Rivers and Lakes in China: Section of River Basins in Southwest Region [M]. Beijing: China Water & Power Press, 2014.

Data Computing Environment

- [4] ESRI. ArcGIS campus license of Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences.

URL for Data Downloading

<http://www.geodoi.ac.cn/WebEn/doi.aspx?Id=1115>.
Or search through: <http://www.geodoi.ac.cn>.

Table 1 The weather records of Zhiduo county^[2]

Month	Temperature (°C)	Precipitation (mm)	Evaporation (mm)
Jan.	-12.9	2.0	65.1
Feb.	-10.2	2.6	76.7
Mar.	-5.7	4.8	111.9
Apr.	-1.3	10.4	160.7
May	3.2	30.2	199.6
Jun.	6.8	84.7	196.8
Jul.	8.9	99.6	179.6
Aug.	8.4	71.5	160.8
Sep.	5.0	88.1	124.5
Oct.	-1.1	18.4	67.2
Nov.	-8.9	1.8	73.1
Dec.	-12.5	2.2	56.9
Annual average	-1.7	416.3	1,472.4