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Global Change Data Encyclopedia

Yunlong Reservoir Basin, Yunnan Province of China

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Yunlong Reservoir is the water source project of the Zhangjiu River diversion and water supply project in Kunming city, works since 2007. It is located in the upper reaches of the Zhangjiu River, the second branch of Jinsha River. The Yunlong Reservoir basin (Figure 1) is the catchment area of the reservoir, located in Luquan Yi and Miao autonomous county, Kunming city, and Wuding county, Chuxiong Yi autonomous prefecture, Yunnan province of China. The geolocation of the basin is between 25°43′34″N and 26°07′49″N, 102°16′06″E and 102°35′13″E (Figure 2). The total area of the Basin is 746.09 km^2. The highest altitude is 3,155 m and the lowest altitude is 2,026 m. The basin is primarily dominated by the karst-tectonic origin canyon landform[1].

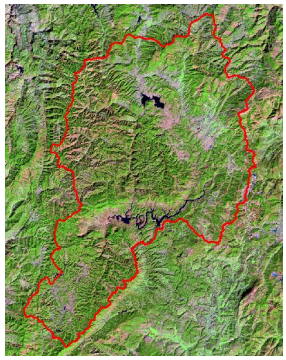

Figure 1 Geographical location of Yunlong Reservoir Basin (Landsat-8 OLI)

The Basin is located in the middle subtropical monsoon climate zone, and the zonal vegetation is semi-humid evergreen broad-leaved forest in the subtropical zone. Climate change is mainly controlled by the alternation of southwest monsoon and south westerly branch airflow[2]. The average annual temperature is 15.6 °C, the monthly average temperature in July with the highest temperature is 21.1 °C, and the monthly average temperature in January with the lowest temperature is 7.8 °C. The average sunshine duration is 2,308 h per year, and the average annual evaporation (observed by the 20 cm evaporating dish) is 1,925.4 mm[3]. The forest coverage rate in the basin is over 70%, mainly covered by arbor forest, shrub forest, and herbaceous plants[4]. The Yunlong Reservoir basin is an important water supply area for urban, with water supply accounting for 70% of the total water supply in Kunming city. It guarantees the drinking water

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supply, and maintains the safety of drinking water for Kunming city and surrounding areas. Therefore, it has an important strategic position for the sustainable development of the surrounding areas[1,5].

The industrial structure is simple, the population density is low, and the socioeconomic development level is relatively lagging behind in the Yunlong Reservoir basin. The main source of income depends on agriculture, especially on planting and breeding. The development of secondary and tertiary industries (i.e., industry and services) is weak in this basin, only with some small-scale primary processing of agricultural by-products and the some building materials enterprises, transportation enterprises and commercial and drinking services, and the production and living standards of villagers are low. Meanwhile, there are no industrial and mining enterprises that affect water quality in the basin[2]. It is worth noting that the forestry ecological construction projects has been carried out in the Yunlong Reservoir basin, with 2,585 hm^2 from 2008 to 2014[6]. Among them, Luquan Water Resources Protection Administration implemented about 1,045 hm^2 forestry by returning or transforming farmland during 2008–2013, and Luquan Forestry Bureau implemented 1,539 hm^2 forestry returned from farmland during 2012–2014.

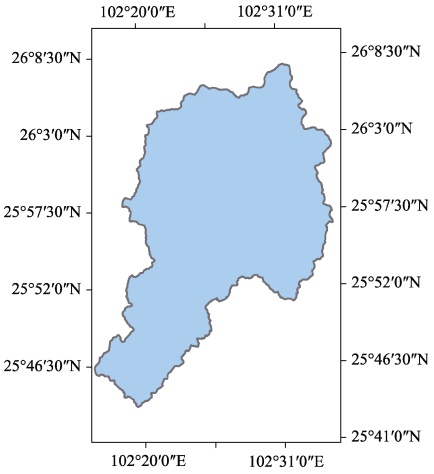

Figure 2 Data visualization map of Yunlong Reservoir basin (.shp)

This dataset was developed by using SWAT[7] model and ArcGIS[8] software, based on ASTER GDEM data and Google Earth images. The dataset is archived in .kmz and .shp formats and consists of 14 data files with data size 443 KB (compressed to 2 files, 181 KB).

References

[1] Yang, C., Li, Q. Q., Wu, G. F. Yunlong Reservoir basin, Yunnan province of China [DB/OL]. Global Change Research Data Publishing & Repository, 2019. DOI:10.3974/geodb.2019.04.12.V1.

[2] Xie, G. Q., Nu, W. K., Yang, S. P., *et al*. Land use and water quality changes in Yangzonghai Lake, Songhuaba Reservoir and Yunlong Reservoir basins [J]. *Water Resources Protection*, 2007(5): 15–17.

[3] Xu, Z. M., Zang, Q. C. Runoff analysis of Yunlong Reservoir [J]. *Water Resources and Hydropower Engineering*, 2007, 38(12): 75–77.

[4] Yang, C., Wu, G., Ding, K., *et al*. Improving land use/land cover classification by integrating pixel unmixing and decision tree methods [J]. *Remote Sensing*, 2017 9(12): 1222–1237.

[5] Yang, Y. Q. A study on ecological compensation standard of Yunlong Reservoir water source protection areas in Yunnan province [D]. Chongqing: Chongqing University, 2015.

[6] Wang, H. M. Investigation on environmental status of Yunlong Reservoir [J]. *Urban construction theory research*, 2016(11): 1–5.

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[7] USDA. SWAT [OL]. https://swat.tamu.edu/.

[8] ESRI. ArcGIS campus license of Shenzhen University.

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