THE WATER RESOURCES OF LAKES IN CHINA*

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Abstract

This paper deals mainly with the water resources of China's lakes scattered over five drainage basins with a total area of 71,787 km² and a total storage capacity of 7,088 million m³, the fresh water capacity of which amounts to about 2,261 million m³, varying from year to year or even within a year. Attention should be paid to the reasonable utilization of water resources and the problems that have already emerged should be carefully and skillfully handled.

A SURVEY OF LAKES

China is a country with a great number of lakes scattered almost all over the country. The term "lake" has different equivalents in various regions of the country. Apart from the character "hu" for "lake", the common ones are "chi", "hai", "dian", "yang", "jiu", "cuo", "nao", "nur", "haizi" and so on, all of them meaning nearly the same, or lakes of varying sizes. Preliminary statistics show that China has about 2,300 lakes with an area larger than 1 km² each. The total lake area covers about 0.8% of the total area of the whole country.

Lakes in China roughly extend from the western foothills of the Da Hinggan mountains in a NE-SW direction down to the southern border of the Nei Mong gol Plateau, from the Yinshan Mountains, the Helan Mountains, the Qilian Mountains, the Riyue Mountains, the Bayan Har Range, the Nyainqentanglha Range, the Gangdise Range, to the Western China border. Most freshwater lakes southeast of this diagonal line lie in the exterior drainage basins. The total area of these lakes is 30,650 km². Of their total water storage capacity of 2,145 million m³, the freshwater storage capacity amounts to 1,805.5 million m³.

The areas northwest of the diagonal line are basically interior drainage basins and are mostly brackish lakes and salt lakes except for the 41,137 km² Ertix River drainage basin. Of the basin's total storage capacity of 4,943 million m³, the freshwater storage capacity is 455.5 million m³.

Lakes in China are distributed mainly in five lake districts (Fig. 1):

1. The Qinghai-Xizang Plateau Lake District

The lakes here were formed by multi-tectonic movement and glacial action. Some non-drainage lakes originating from the choking-up of the riverbeds by mud-rock flow are very deep. The surfaces of the lakes are mostly 4,000 m ASL. The 5,560 m ASL Garkung Caka Lake in the Northern Xizang Plateau is considered to be the highest in the country. The total area of lakes in this drainage basin is 36,889 km², or 51.4% of the total

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area of the lakes in China. Apart from a few drainage lakes in the east and south of the basin which are freshwater lakes, the others are all interior brackish and salt lakes. As the plateau is now still in the new tectonic uplift movement, the lake waters here tend to concentrate, as a result of which, the lake surfaces become smaller in varying degrees. The best known of such lakes are Qinghai Lake, Gyaring Lake, Ngoring Lake, Namco Lake, Siling Lake, Bangong Lake, and Yamzho Yumco Lake.

2. The Eastern Plain Lake District
In the lower and middle Changjiang River Plain, the areas near the banks along the Huanghe River, the Huaihe River, the Haihe River, and the Grand Canal are dotted with mainly drainage lakes formed by tectonic movement and alluviation. These lakes cover an area of 21,641 km² or 30.2% of the total area of lakes in China. The surface area and depth of these lakes are obviously decreasing because of sedimentation by silt and mud and by land reclamation from their beaches.

Five well-known freshwater lakes are found in the lake district, namely, Poyang Lake, Dongting Lake, Hongze Lake, Taihu Lake, and Chaohu Lake.

3. The Nei Monggol-Xinjiang Plateau Lake District
If the Heihe River is used as a demarcation line, lakes west of the river are mostly tectonic lakes, while those east of the river are mainly small ones formed by wind erosion. The area of lakes in the district adds up to 9,411 km², constituting about 13.1% of the