

# Chapter 4-10

## Water Utilization

### Abstract

The water of Lake Biwa is utilized not only by Shiga Prefecture but also by the Keihanshin area (Kyoto/Osaka/Kobe) for a variety of purposes including tap water supply, industrial use, agricultural use and power generation. Water demand rapidly increased due to the post-Second World War economic growth and this situation has accelerated water resource developments including the Lake Biwa Comprehensive Development. However, due to changes in social and economic conditions in recent years, water use has ceased to increase as it has in the past. Nevertheless, frequent water shortages in recent years necessitate cooperation between the residents of the Lake Biwa-Yodo River basin to ensure the prudent utilization of water.

**Keyword:** Lake Biwa-Yodo River basin

### 1. Lake Biwa as a Precious Water Resource

Lake Biwa plays an important role in providing water for tap water supply, industrial use, agriculture use and power generation not only in Shiga Prefecture but also the Keihanshin area (Kyoto/Osaka/Kobe), which is the core of Japan's economy.

The water from Lake Biwa is widely utilized in the area from Kobe City in the west, to Misaki Town at the extreme south of Osaka Prefecture. The drinking water supply from Lake Biwa serves a population of 14.5 million and also many residents in the Kinki region beyond the Lake Biwa-Yodo River basin.

Lake Biwa has an immense water surface area, covering one-sixth of the total area of Shiga Prefecture, and its catchment area occupies roughly half of the total catchment area of the Yodo River System, making it an essential part of the Yodo River System Water Utilization Program.

### 2. Water Utilization History of Lake Biwa

Looking back on the history of the lake, the first Lake Biwa Canal was completed in 1890 and served to support Japan's first hydroelectric power generation, transportation by water and agricultural irrigation. The second Lake Biwa Canal was completed in 1912 with the purpose of providing a tap water supply and expanding power generation. Subsequently, hydroelectric development, including the construction of the Uji Power Plant, was undertaken in the Uji River area and each of these facilities has played an important role in society.

To deal with increasing water demand arising from the growth of industry and economy, the first phase of Yodo River Water Control Project was implemented from 1943 through 1948, heralding the beginning of utilization of water through water-level control.

Further increases in water demand in



Fig. 4-10-1 A Birds-eye view of the South Basin of Lake Biwa

the Keihanshin area under rapid economic growth since the 1960s prompted implementation of water resource development to achieve a stable water supply, including the Lake Biwa Comprehensive Development Project which lasted 25 years from 1972 through 1997.

### 3. Changes in Water Utilization and Water Shortages

Today, factors such as the declining population of Japan caused by low birth-rates and aging, the increasing numbers of factories being transferred overseas and the conversion to a resource recycling-based society have engendered reduced levels of water utilization. In addition, decreases in irrigated land, the mechanization of agriculture and the separation of irrigation and drainage have brought about changes in the circumstances of

water utilization.

On the other hand, recent years have seen increasing frequency of water shortages with incidents of drops of -90 cm in the basic surface level (B.S.L.) of the water in Lake Biwa occurring 4 times in the 20 years since 1992.

The impact of serious water shortages such as these may manifest itself in our daily lives through problems such as the restriction of water intake, shipping difficulties and malodors caused by rotten waterweed, and may also affect the lake's valuable ecosystem. Thus, it is necessary not only for the residents of Shiga Prefecture but also for the residents of the Lake Biwa-Yodo River basin to cooperate to save water.

(Lake Biwa Policy Division,  
Shiga Prefectural Government)



**Fig. 4-10-2** Area utilizing water of Lake Biwa

**Lake Biwa-Yodo River basin:** The area that includes the Yodo River System area and the area that utilizes the water of Lake Biwa. These areas are closely connected socially, economically and culturally through Lake Biwa