

Dammed if they do

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Poyang lake was severely drained by drought on May 17

Like the concentric circles caused by a pebble thrown into a pond, the Three Gorges Dam is causing some provincial jurisdictions downstream to consider creating their own ripples.

Some intend to build massive structures of their own to mitigate the effect the world's largest dam has had on their local environments.

These tit-for-tat measures in which the first fault is treated by a second, only to cause a third, have alarmed environmentalists and the central government.

A case in point is Poyang Lake, where the Jiangxi Provincial government is proposing to build a dam that would be designed to compensate for the flow of water that experts say has been diminished by the Three Gorges Dam.

The fact is, the Three Gorges Dam is not the only culprit. Poyang Lake has been devastated by the ripple effects of multiple environmental factors. This spring's extended drought caused China's largest freshwater lake, to drain much more dramatically than in recent past years.

Before this week's torrential rains, vast tracks of the lake had become swampy grasslands where cattle, sheep and goats grazed. Poyang's thriving freshwater crab and fishing industries were severely threatened.

Massive dredging operations of the lakebed for its sand is also torturing Poyang's ecosystem, experts and locals told the Global Times.

Yet the renewed proposal by the Jiangxi government to build another dam by the Yangtze has refocused attention on the Three Gorges Dam as one of the main causes of Poyang's degradation.

Provincial officials believe a dam between the Poyang and the Yangtze River would restore the lake's water level to pre-Three Gorges levels, but many experts say such a structure will only compound the entire watershed's environmental problems.

"Obviously, the Three Gorges Dam has had a negative effect on the ecology, but it's unwise to build an almost identical dam," Liu Shukun, a professor from the China Institute of Water Resources and Hydropower Research, told the Global Times.

This sentiment appears to be shared by the central government, which has not approved a dam at Poyang Lake. Indeed many experts are concerned that yet another dam will only compound the negative effects on human manipulation of Poyang's ecology. They warn it could trigger a further breakdown of the area's ecosystem and affect other downstream provinces along the Yangtze River including Anhui and Jiangsu.

A struggle for water rights

Since the construction of the Three Gorges Dam, the dam's administrators and local governments in the middle and lower reaches have been struggling over water use rights.

The China Three Gorges Corporation is intent on storing water behind the dam to produce much needed electricity, while communities downstream have been demanding the company discharge more water for much needed irrigation, human use and fishing. The recent drought has highlighted the vulnerability of the region.

"The Three Gorges Dam had a major impact on Poyang Lake, because it prevented the Yangtze River water from pouring into the lake" during spring runoff, Wang Xiaohong, director of Jiangxi's Mountain, River and Lake Development Committee, told the Shanghai-based Oriental Morning Post.

Poyang's water level has dropped 3.5 meters since the main part of the dam was completed in 2006, according to the newspaper.

"For sure, the dam has cut off the big river system. The biggest victim has been the ecology," Li Jianhua, a professor from the College of Environmental Science and Engineering at Tongji University, told the Global Times.

Nature's harmony interrupted

In the past, Poyang Lake and the Yangtze River existed in reciprocal harmony that didn't always favor human development.

Lake waters flowed into the river during dry seasons, but during rainy-season floods the lake helped gulp up river water. While these dramatic ebbs and flows caused trouble for local settlements, other creatures thrived.

The lake is home to half a million migratory birds and 90 percent of the world's Siberian cranes winter there, said some tourist websites promoting the lake as an ideal destination for birdwatchers.

Over the centuries Poyang Lake developed a vast and interdependent ecosystem that supported 122 species of fish and 310 species of birds, according to a report on the impact of the Three Gorges Dam on Poyang Lake, conducted by Professor Dong Zengchuan from Hehai University in 2008.

In the report, Dong wrote "after the dam began storing water and reduced water flows below it, the water level in Poyang Lake also declined, directly or indirectly affecting the survival of the lake."

The lake's decline has also menaced a number of Poyang's animals that are protected by law. The dam, and this year's drought, have put new pressures on the threatened finless porpoises, reported the Xinhua News Agency. The highly endangered species of freshwater dolphin lives only in the middle and lower reaches of the Yangtze River, as well as in Poyang and Dongting Lakes. Today only 2,000 finless porpoises remain and a quarter of them inhabit Poyang Lake.

Entire ecosystems could change

On June 8, the Oriental Morning Post reported that the Jiangxi government plans to offset the lessened water flow from the Yangtze by building a 2,800-meter long dam so it can control and stabilize the lake's water level.

Repeated telephone calls to Jiangxi officials to confirm the report went unanswered, and there is no reference to the dam project on the province's website.

More than five experts interviewed by the Global Times said the Poyang Lake dam project is likely to cause serious ecological and water supply problems in downstream provinces.

Liu, from the China Institute of Water Resources and Hydropower Research, strongly opposes the Poyang dam. "Solving problems caused by the Three Gorges Dam with another dam might result in a chain reaction affecting the environment all along the lower reach of the Yangtze River."

"If the project goes through, the entire ecosystem that was shaped by historic mutual interaction between the river and lake will change," he said, adding that "over the long run, the water will be poor quality which will impact fishing."

The Poyang dam project was first proposed in the 1980s. The local government of the day thought it would help control the fluctuations in the lake's water level, which varied widely between the rainy season and dry season, and was putting a damper on the area's economic development.

After more than a decade in meditation, the provincial government officially proposed the plan to the National People's Congress in 2002.

Determined to push the program forward, the Jiangxi government insisted the dam would be designed to enhance the ecology rather than make a profit from energy generation.

"We don't call it a dam, it's more of a sluice gate," Sun Xiaoshan, an expert from the province's Department of Water Resources, said in previous interviews.

The sluice gate would also generate electricity but its main purpose would be to control the flow of water during dry seasons, said Sun.

Statistics show that over the past five decades more than 46,000 dam structures and 7,000 navigation locks have been built along the Yangtze River and its tributaries. Poyang Lake and Dongting Lake have un-dammed channels to the Yangtze River.

Gao Jianguo, a researcher from the China Earthquake Administration supports the Poyang dam proposal. “It is understandable that the Jiangxi government wants to have better control over the water to ensure water supplies and boost the economy by developing shipping, fishing and producing electricity,” Gao said.

Analysts are hopeful that Lu Xinshe will bring his skills and background in water conservancy to the debate. Lu, the former vice minister of Land and Resources, was transferred and appointed vice Party Secretary of Jiangxi. He is expected to undertake a comprehensive evaluation of the benefits and weaknesses of building a dam to control the waters of Poyang Lake.

Illegal dredging yet another threat

Along with the effects of drought and the world’s largest dam, Poyang Lake is being degraded by the continued exploitation of its natural resources, say activists who have long studied the lake’s ecosystem.

The recent ban on sand dredging on the Yangtze River has driven dredging companies to dig sand from several freshwater lakes on the lower reach of the river, including the Poyang, Dongting and Penghu Lakes.

Yu Fengqin, the director of the Green Wild Ark, an environmental NGO, has studied the ecology in Poyang Lake for almost a decade. She told the Global Times that even though there has been no planned development of the sand dredging industry on Poyang Lake, thousands of dredging vessels are operating there, many against the law, she said.

At least 100 dredging vessels with the capacity of 2,000 to 4,000 tons are digging sand along the shores of Poyang Lake, said Huang Xianyin, a long time local resident. “They are capable of transporting 30,000 tons of sand a day,” Huang told the Global Times.

Environmentalist Yu said dredging has contributed to the degradation of Poyang Lake. “The sand is a non-renewable resource and excessive exploitation will definitely hurt the lakebed and lead to the collapse of the lake’s ecological resources,” said Yu, adding that the water in parts of the lake, which was once clear, can no longer support fish life.

She blamed overlapping agencies for passing the buck and failing to stop illegal dredging. “Too many departments create an administrative vacuum in law enforcement sometimes,” she said.