

Increased rainfall has revived hopes for revival of Lake Urmia

Yet groundwater reserves being depleted



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INTERVIEW

Notable precipitations during the previous Persian calendar year (started March 21, 2026) have once again restored water to segments of the Lake Urmia bed and have resuscitated hopes for the rehabilitation of this watery expanse. Nevertheless, the recession of a considerable portion of these waters with the commencement of the warm season demonstrated that episodic rainfall, in isolation, cannot serve as the guarantor of the lake's deliverance. Lake Urmia, which over the course of more than one decade has forfeited a substantial fraction of its water, has today been transformed more into a seasonal wetland than a perennial lake; a condition whose roots must be sought beyond deficient precipitation and within the water consumption pattern and agricultural expansion in the lake's catchment basin.

Simultaneously, the persistence of excessive extraction from subterranean water resources, the proliferation of agricultural lands, and the cultivation of water-intensive crops in the region, in conjunction with the intensification of the water crisis throughout the nation, have exacerbated anxieties regarding the lake's future and the environmental ramifications of its desiccation.

Nonetheless, according to experts, the recent rainfall has conveyed a significant message: Lake Urmia still possesses the capacity for rehabilitation, provided that, simultaneously with the exploitation of climatic opportunities, the reformation of consumption patterns and the governance of water resources are also placed upon the agenda.

In the ensuing interview with Kamran Zeinalzadeh, the director of the Lake Urmia Research Institute, we have examined the most recent hydrological status of the lake, the effectiveness of the recent precipitations, the prospective outlook for forthcoming rainfall, the perpetuation of the subterranean water crisis, the role of agriculture and extraction from rivers, and, most critically, the real prerequisites for the restoration of Lake Urmia.

IRAN DAILY: At the inception of the current calendar year, when promising rainfall had occurred in the region, we conducted an interview with you concerning the condition of Lake Urmia. At that time, an extensive portion of the lakebed had been submerged; however, you issued a caution that, given the shallowness of the water and the start of the warm season, we would witness a decrease in the lake's water level. Now, after the passage of several months, how do you evaluate the state of the lake? And what differences does the current situation exhibit in comparison to the analogous period of the preceding year?

ZEINALZADEH: The current hydrological year, which commenced in Mehr 1404 (October 2025) and will conclude in Shahrivar 1405 (September 2026), has, from a climatological perspective, presented a favorable opportunity for Lake Urmia. During this hydrological year, the precipitation level increased by approximately 61% relative to the corresponding period of the previous hydrological year and by about 25% in comparison to the long-term analogous period; and this very factor caused a considerable volume of water to accumulate in the lake relative to prior years.

Of course, it must be noted that the bed of Lake Urmia, owing to the sedimentary deposits resulting from the evaporation

of the lake's water over the past three decades, has become nearly planar. Consequently, any water that enters the lake disperses rapidly across an extensive surface and does not attain significant depth. This phenomenon accelerates the evaporation rate of the lake's water. As we had predicted, with the onset of the warm season, a substantial portion of this accumulated water has evaporated; nevertheless, the lake's condition is superior to that of the previous year, which was among the worst years.

Could you provide a specific numerical figure concerning the current volume of the lake's water or the quantity of water that remains in comparison to the previous year?

The reality is that the numerical data pertaining to water volume under current circumstances, due to the imprecision of the existing bathymetric map of the lakebed, do not constitute accurate indices for evaluating the lake's status. The most recent precise information we possess regarding the topographical undulations of the lakebed dates to 1398 (2019-2020). Since that time, the lakebed has been altered under the influence of sedimentation processes, and for this reason, one cannot estimate with certitude regarding the extant volume of water in the lake.

However, the present situation is superior to that of the previous year.

At this moment, the lake's water level has risen by approximately 1.1 meters relative to the same period in the preceding year. The lake's surface area has also expanded by roughly 1,600 square kilometers compared to this time last year. I estimate that, under current conditions, the lake contains approximately 1.5 to 2 billion cubic meters of water.

It must be considered that, at this time last year, virtually no water remained within the lake — perhaps less than 100 million cubic meters. On the other hand, climatological projections indicate that the forthcoming autumn will likely bring relatively abundant rainfall as well. Perhaps the precipitation will not match the exceedingly heavy rainfall of the autumn of the previous year, but greater rainfall is forecast relative to recent years. Therefore, one may remain hopeful that autumnal precipitations will also contribute to the lake.

Given the adequate rainfall of the past two years, can it be asserted that these precipitations can lay the groundwork for the lake's rehabilitation?

The rainfall has rendered substantial assistance, but it cannot, in isolation, determine or guarantee the restoration of Lake Urmia. The principal problem of the lake is a grave and chronic malady, whose roots must be sought in the excessive consumption of water within the

catchment basin. We have persistently expanded agricultural lands beyond the capacity of the basin's renewable water resources. At present, there exist more than 600,000 hectares of irrigated lands surrounding the lake, particularly in the provinces of West Azarbaijan, East Azarbaijan, and portions of Kurdistan.

A noteworthy point is that this crisis-stricken catchment basin is also active and holds a record in the exportation of water-intensive crops. This basin, while acutely suffering from water scarcity and having faced serious difficulties in recent years even in securing potable water for the settlements located within it, is an exporter of apples, other stone fruit crops, as well as commodities such as alfalfa, sugar beets, and other water-intensive products that are not particularly compatible with the region's climatic conditions.

The question arises: despite the constraints on water resources and the severe reduction in rainfall over past years, how does the production of these crops continue in such abundance? The answer must be sought in the absence of proper governance, insufficient supervision, the state of abandon in the water, agriculture, and natural resources sectors, and the lack of integrated water resource management.

Alongside surface water resources, the immoderate and unauthorized extraction of subterranean waters

also persists. These resources have been formed over thousands of years, but they are now being depleted at an accelerated rate.

The farmers themselves perceive this situation more acutely than anyone else; for every day, they are compelled to increase the depth of their wells in order to access water. This matter constitutes a serious warning regarding the state of subterranean water resources in the region.

Of course, it is possible that exceptional precipitations over several consecutive years might again introduce a considerable volume of water into the lake and contribute naturally to its rehabilitation process; however, subterranean water resources cannot, within such a temporal interval, compensate for the incurred water deficit.

Notwithstanding these difficulties, have the recent precipitations at least engendered the hope that Lake Urmia still possesses the capacity for rehabilitation?

That is correct. One of the most significant lessons that the recent precipitations have imparted to us is that Lake Urmia remains capable of restoration. Perhaps prior to these rainfalls, many people and officials had relinquished hope and supposed that the return of water to the lake was no longer possible. But the recent precipitations demonstrated that, if climatic conditions are

Tourists enjoy steering a swan-shaped pedal boat at Lake Urmia during sunset on August 15, 2026, after earlier heavy rainfall has raised hopes for the lake's revival.

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