



## **DESICCATION OF LAKES AND INLAND SEAS: AN ALTIMETRIC LOOK**

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A significant fall in the water level and increase of salinity of many large salty lakes and inland seas have taken place worldwide during the past century. Some examples include: in North America – Great Salt Lake (Utah), Walker and Pyramid salt lakes (Nevada), Mono Lake and Salton Sea Lake (California), Deadmoose (Canada); in the Middle East – the Dead Sea (Israel) and Van (Turkey); in the Central Asia – the Aral and Caspian Seas, Lake Sarykamysh and Kara Bogaz-Gol Bay (Turkmenistan), Lake Balkhash (Kazakhstan), Lake Issyk-Kul (Kirgizstan); in China – Lobnor and Qinghai Hu Lakes; in Africa – Chad Lake and Lake Elmenteita (Kenya); in Japan – Lake Biwa; in Australia – Keilambete, Eyre, Corangamite, Gnotuk and Bullen Merri Lakes. The three most striking examples are: (1) the Lobnor Lake in China which completely dried up by 1972; (2) the Dead Sea which has the highest salinity, namely about 340 g/L; and (3) the Aral Sea which follows the dramatic fate of the Lobnor Lake and whose sea level drop reached 23 m and salinity progressively increases and presently is as high as 90-140 g/L. The climate change is the reason for the water level drop in only a few of the above mentioned examples. This effect manifests itself mostly through the withdrawal and diversion of water from inflowing rivers, and in some cases through catchment changes. Significant increase of fresh water consumption for agriculture and uncontrolled irrigation pose a serious threat to inland seas, lakes, rivers, and wetlands. Regular measurements of the sea/lake level are practically absent in many regions of the World, such as Central Asia and Africa. The monitoring of the evolution of these water bodies may be organized based on satellite altimetry. We present several examples resulting from the TOPEX/POSEIDON and JASON-1 data analysis for 1992-2004 for the Aral and Caspian Seas, Kara Bogaz-Gol Bay, and Lakes Balkhash, Issyk-Kul, Chad, Victoria, Kyoga, Turkana, Tanganyika, Nyasa, Rukwa,

etc.