



We live on a blue planet – yet only about 2.5% of the Earth’s water is liquid freshwater. Liquid fresh surface water (lakes and rivers) accounts for just 0.008% of the Earth’s water, yet it is this fraction that supports most of human life and activity. The freshwater lakes of the world are estimated to hold 125,000 cubic kilometers of water. Over half of this volume is locked in just 5 lakes.

North America’s Great Lakes are represented in the 15 largest lakes of the world. From Lake Superior (#3) to shallow Lake Erie (#15), the Laurentian Great Lakes comprise 20% of the world’s fresh water.

The International Association of Great Lakes Research (IAGLR) has recently developed an online database containing information on the world’s largest lakes.

This project fulfills the promise of a ‘single, comprehensive database... on the large natural lakes of the world’ called for and initiated in 1982 by Charles E. Herdendorff.

The lakes included in this database - both freshwater (75%) and saline (25%) - have a surface area of at least 500 square kilometers. Taken together, these 253 lakes represent nearly 90% of the world’s lakes by both surface area and volume.



The map shows the locations of the 253 large lakes that are on the IAGLR database. Image courtesy of IAGLR.

Large Lakes of the World

The Caspian Sea

The Caspian Sea is the world's largest saltwater lake by volume (78200 km³), surface area (374000 km²) and by depth (1025m). This land-locked sea is bounded to the north by Russia, to the south by Iran, to the west by Azerbaijan, and to the east by Kazakhstan and Turkmenistan. It has a salinity of 1.2%, which is about one-third the saltiness of seawater.



To the ancient Greeks and Persians, the lake's immense size suggested it was an ocean, hence its name. Image courtesy of NOAA.

Lake Baikal

Located in Russia in the southern region of Siberia, Lake Baikal is the world's largest freshwater lake by both volume (22995 km³) and depth (1741m). Lake Baikal contains 20% of the world's fresh surface water. Lake Baikal hides its vast waters under a relatively small surface area (31500 km²). Formed as a rift valley about 30 million years ago, Lake Baikal is one of the world's oldest lakes, as well as the largest and deepest. It is home to more than 1000 species which can be found nowhere else in the world.



Lake Baikal photo courtesy of Steve Lozano

Lake Superior

Located in North America on the border between the United States and Canada, Lake Superior is the world's largest freshwater lake by surface area (82100 km²). The volume of Lake Superior surpasses that of all the other Great Lakes combined. Lake Superior was formed by glacial action, reaching its current configuration about 10,000 years ago.



Lake Superior shoreline - late summer/early fall, Lake Superior, Minnesota. Photo courtesy of Dave Hansen, Minnesota Extension Service.

Although the large lakes of the world span different continents, many of them share the same problems. Pollution in the form of chemicals and pesticides, impacts of introduced species and land-use practices provide challenges for researchers and managers around these large ecosystems.

IAGLR welcomes the submission of data updates or corrections, photographs, interesting lake topics and even the inclusion of new lakes. Data updates must have been published in the peer-reviewed scientific literature. Photos should include date, location and photo credit.

The Journal of Great Lakes Research (JGLR) includes scientific publications on large lakes of the world in all of its regular quarterly issues and frequently publishes supplemental issues dedicated to particular lakes. Check us out at <http://www.sciencedirect.com/jglr/>

Authors: Edited by Rochelle Sturtevant, NOAA/Great Lakes Sea Grant Network, with assistance from IAGLR Outreach Committee Member: Helen Domske, New York Sea Grant. Page layout: Sharon O'Donovan, New York Sea Grant.

International Association for Great Lakes Research (IAGLR)

A scientific organization comprised of researchers studying the Great Lakes, other large lakes of the world, and their watersheds, as well as those with an interest in such research. IAGLR is committed to sharing its collective expertise with the media, policymakers, and the general public to inform public policy and decision-making that will protect the environmental health of large lakes and their watersheds. www.iaglr.org