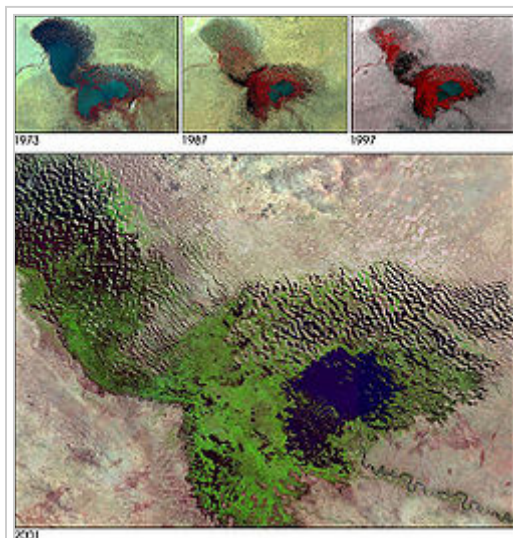


# Lake Chad

From Wikipedia, the free encyclopedia

Coordinates: 13°0′N 14°0′E﻿ / ﻿13°0′N 14°0′E﻿ / 13; 14

**Lake Chad** (in French *Lac Tchad*) is a historically large, shallow lake in Africa, whose size has varied greatly over the centuries. It is economically very important, providing water to more than 20 million people living in the four countries which surround it: Chad, Cameroon, Niger, and Nigeria. It is located mainly in the far west of Chad, bordering on northeastern Nigeria. The Chari River is its largest source of water, providing over 90% of Lake Chad's water. The lake possesses many small islands and mudbanks, and its shorelines are largely composed of marshes. Because it is very shallow—only 10.5 metres (34 ft) at its deepest—its area is particularly sensitive to small changes in average depth, and it consequently also shows seasonal fluctuations in size. Lake Chad has no apparent outlet, but its waters percolate into the Soro and Bodélé depressions.



Lake Chad in a 2001 satellite image, with the actual lake in blue, and vegetation on top of the old lake bed in green. Above that, the changes from 1973 to 1997 are shown.

Lake Chad	
<span></span>	
Map of lake and surrounding region	
<b>Coordinates</b>	<span><span><span><span><span>13°0′N</span> <span>14°0′E</span></span></span><span><span>﻿</span> / <span>﻿</span></span><span><span>13°0′N 14°0′E</span><span><span>﻿</span> / <span>13; 14</span></span></span></span></span>
<b>Lake type</b>	Endorheic
<b>Primary inflows</b>	Chari River
<b>Primary outflows</b>	Soro & Bodélé Depressions
<b>Basin countries</b>	Chad, Cameroon, Niger, Nigeria
<b>Surface area</b>	1,350 <span> </span> km <sup>2</sup> <sup>[1]</sup>
<b>Average depth</b>	1.5 <span> </span> m
<b>Max. depth</b>	11 <span> </span> m
<b>Water volume</b>	10.8 <span> </span> km <sup>3</sup>
<b>Shore length</b> <sup>1</sup>	650 <span> </span> km
<b>Surface elevation</b>	280 <span> </span> m
<b>References</b>	[1]
<sup>1</sup> Shore length is not a well-defined measure.	

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## Overview

Lake Chad gave its name to the country of Chad. The name *Chad* is a local word meaning "large expanse of water," in other words simply "lake."<sup>[2]</sup>

Lake Chad is believed to be a remnant of a former inland sea which has grown and shrunk with changes in climate over the past 13,000 years. At its largest, around 4000 BC, this lake is estimated to have covered an area of 400,000 km². Lake sediments appear to indicate dry periods, when the lake nearly dried up, around 8500 BC, 5500 BC, 2000 BC, and 100 BC."<sup>[3]</sup>

It was one of the largest lakes in the world when first surveyed by Europeans in 1823, but it has

shrunk considerably since then. An increased demand on the lake's water from the local population has likely accelerated its shrinkage over the past 40 years<sup>[4]</sup>. A 2001 study published in the *Journal of Geophysical Research* blamed the lake's retreat largely on overgrazing in the area surrounding the lake, causing desertification and a decline in vegetation.<sup>[5]</sup> According to CNN senior producer, A. Chris Gajilan, "the United Nations Environment Programme says that about half of the lake's decrease is attributable to human water use such as inefficient damming and irrigation methods. The other half of the shrinkage is due to shifting climate patterns. Anada Tiega of the Lake Chad Basin Commission blames climate change for 50 to 75 percent of the water's disappearance."<sup>[6]</sup>

In the 1960s it had an area of more than 26,000 km<sup>2</sup>, making it the fourth largest lake in Africa. By 2000 its extent had fallen to less than 1,500 km<sup>2</sup>. This is due to reduced rainfall combined with greatly increased amounts of irrigation water being drawn from the lake and the rivers which feed it, the largest being the Chari/Logone system, which originates in the mountains of the Central African Republic. It seems likely that the lake will shrink further and perhaps even disappear altogether in the course of the 21st century.

The lake presently has an average depth of only five feet (1.5 meters). It nearly dried out in 1908 and again in 1984. As it retreats every summer, recessionary agriculture is practised, while the Buduma people fish from canoes.

## Wildlife and conservation

There are many floating islands in the lake. It is home to a wide variety of wildlife, including fish, crocodiles, waterfowl, and shore birds, which are important sources of food for the local human population.

The shrinking of the lake has also caused several different conflicts to emerge as to which country that borders Lake Chad has the rights to the remaining water. Along with the conflicts that involve the countries, violence is increasing between the lake's dwellers. Farmers and herders want the water for their crops and livestock and are constantly diverting the water. The fishermen however want the remaining water in the lake to stay so they can continue to fish and not have to worry about the lake shrinking more and decreasing their already strained supply of fish.

Due to human population expansion and unsustainable human water extraction from Lake Chad, a number of natural species are stressed and threatened from declining Lake levels. For example decline or disappearance of the endangered Painted Hunting Dog, *Lycaon pictus* has been noted in the Lake Chad area.<sup>[7]</sup>

## Diversion proposal

In the 1960s, a plan was proposed to divert the Ubangi River into Lake Chad. The copious amount of water from the Ubangi would revitalize the dying Lake Chad and provide livelihood in fishing and enhanced agriculture to tens of millions of central Africans and Sahelians. Inter-basin water transfer schemes were proposed in the 1980s and 1990s by Nigerian engineer J. Umolu (ZCN Scheme) and Italian firm Bonifica (Transaqua Scheme)<sup>[8][9][10][11][12]</sup>. In 1994, the Lake Chad Basin Commission (LCBC) proposed a similar project and at a March, 2008 Summit, the Heads of State of the LCBC member countries committed to the diversion project<sup>[13]</sup>. In April, 2008, the LCBC advertised a request for proposals for a World Bank-funded feasibility study.



Photography taken by  
Apollo 7, October  
1968.



Map of the lake in 1973



Lake Chad in 1930.  
Aerial photograph by  
Walter Mittelholzer.

## See also

- Air of Niger
- *Daphnia barbata*
- List of lakes
- Neolithic Subpluvial

## Notes

- ↑ ***a b*** "Lake Chad: Experiences and Lessons Learned in Brief". *www.worldlakes.org*. 2006. http://www.worldlakes.org/uploads/06\_Lake\_Chad\_27February2006.pdf. Retrieved on 2008-02-15.
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- ↑ Circle of Blue, June 24, 2008 Vanishing Lake Chad — A Water Crisis in Central Africa
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- ↑ C. Michael Hogan. 2009. *Painted Hunting Dog: Lycaon pictus*, GlobalTwitcher.com, ed. N. Stromberg
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- ↑ New Scientist, March 23, 1991 Africa at a Watershed (Ubangi - Lake Chad Inter-basin transfer)
- ↑ Umolu, J. C.; 1990, Macro Perspectives for Nigeria’s Water Resources Planning, Proc. of the First Biennial National Hydrology Symposium, Maiduguri, Nigeria, pp. 218-262(discussion of Ubangi-Lake Chad diversion schemes)
- ↑ The Changing Geography of Africa and the Middle East By Graham Chapman, Kathleen M. Baker, University of London School of Oriental and African Studies, 1992 Routledge
- ↑ Combating Climate Induced Water And Energy Deficiencies In West Central Africa (Ubangi - Lake Chad Inter-basin transfer)
- ↑ Voice of America News, March 28, 2008 African Leaders Team Up to Rescue Lake Chad

## External links

- Bibliography on Water Resources and International Law Peace Palace Library
- International Cooperation and Sustainable Water Management of the Waters of the Lake Chad/ by Moustapha Abakar Malloumi
- The Encyclopedia of Earth: Lake Chad flooded savanna
- Information on, and a map of, Chad's watershed.
- Map of the Lake Chad basin at Water Resources eAtlas.
- Article on the disappearing lake in The Guardian.
- Reconstruction of Megalake Chad using Shuttle Radar Topographic Mission data.

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