



# CRYSTAL LAKE WATERSHED FACTS

## Crystal Lake Watershed

- Includes two communities and parts of six townships of Benzie County.
- Subwatershed of the Betsie River Watershed & Lake Michigan Watershed.
- Encompasses seventeen subwatersheds.
- Watershed Area (Land + Water): 43.97 sq mi (28,145 A)
- Land Area: 28.58 sq mi (18,291 A)
- Perimeter: 44.650 mi

## Crystal Lake

- 9th largest of 11,000 lakes in Michigan (area)
- Lake Area: 15.40 sq mi (9,854 A)
- Ratio of (Land + Water) to Water 2.856
- Ratio of Land to Water 1.856
- Lake as percent of (Land + Water) 35 %
- Perimeter: (unique due to historic drawdown) 20.838 mi
- Reach (Longest) 8.11 mi (42,800 feet)
- Depth (Avg = volume/area): 70.70 feet
- Depth (max): 165 feet
- Volume: 741,366 Acre-ft = 242,000,000,000 gal = 0.220 cu mi.
- Elevation (Great Lakes datum) 600.00 +/- 0.25 feet
- Center of Crystal Lake: 44° 39' 33" N Latitude; 086° 09' 23" W Longitude.

- Benzie Co. is the smallest of the 83 counties in Michigan in land area (321.34 sq mi); 25th in Great Lakes water area (512.09 sq mi), 24th in total water area (538.38 sq mi); and 18th in inland lakes water area (26.29 sq mi). (U.S. Bureau of Census, 1990.)

- If all the water in Crystal Lake was spread evenly over all of Benzie County (assuming it was flat and the water didn't soak into the ground), it would cover all the land to a depth of 3'-8", or about head-high for an average five-year-old !

- The volume of water in 1" taken at the surface of Crystal Lake is equivalent to a faucet flowing at 10 gal per min for 51 years !

- History, Maps, & Facts about the Crystal Lake Watershed:  
[http://www.clwf.org/about\\_watershed.htm](http://www.clwf.org/about_watershed.htm)

- Copies of this map are available from:



Crystal Lake & Watershed Association  
P.O. Box 89, Beulah, MI 49617  
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**www.CLWA.us info@CLWA.us**



## CRYSTAL LAKE WATERSHED CONCERNS

"A lake is the landscape's most beautiful and expressive feature. It is earth's eye; looking into which the beholder measures the depth of his own nature."

- - Henry David Thoreau, from the chapter "The Ponds" in *Walden*.

The Crystal Lake Watershed (Benzie County, NW Lower Michigan) is small compared to the two larger riverine (river) watersheds to the north and south. It contains parts of three townships around the Lake (Benzonia, Crystal Lake, and Lake); and parts of three other townships (Homestead, Inland, and Weldon) drained by Cold Creek. The Villages of Beulah and Benzonia are near the East End of Crystal Lake. The City of Frankfort and the Village of Elberta are near the West End of Crystal Lake, but are actually in the Betsie River Watershed. Benzie County was first surveyed in 1838-9 by Alvin and Austin Burt, who called Crystal Lake, "Cap" Lake (short for "Whitecap", for its large waves).

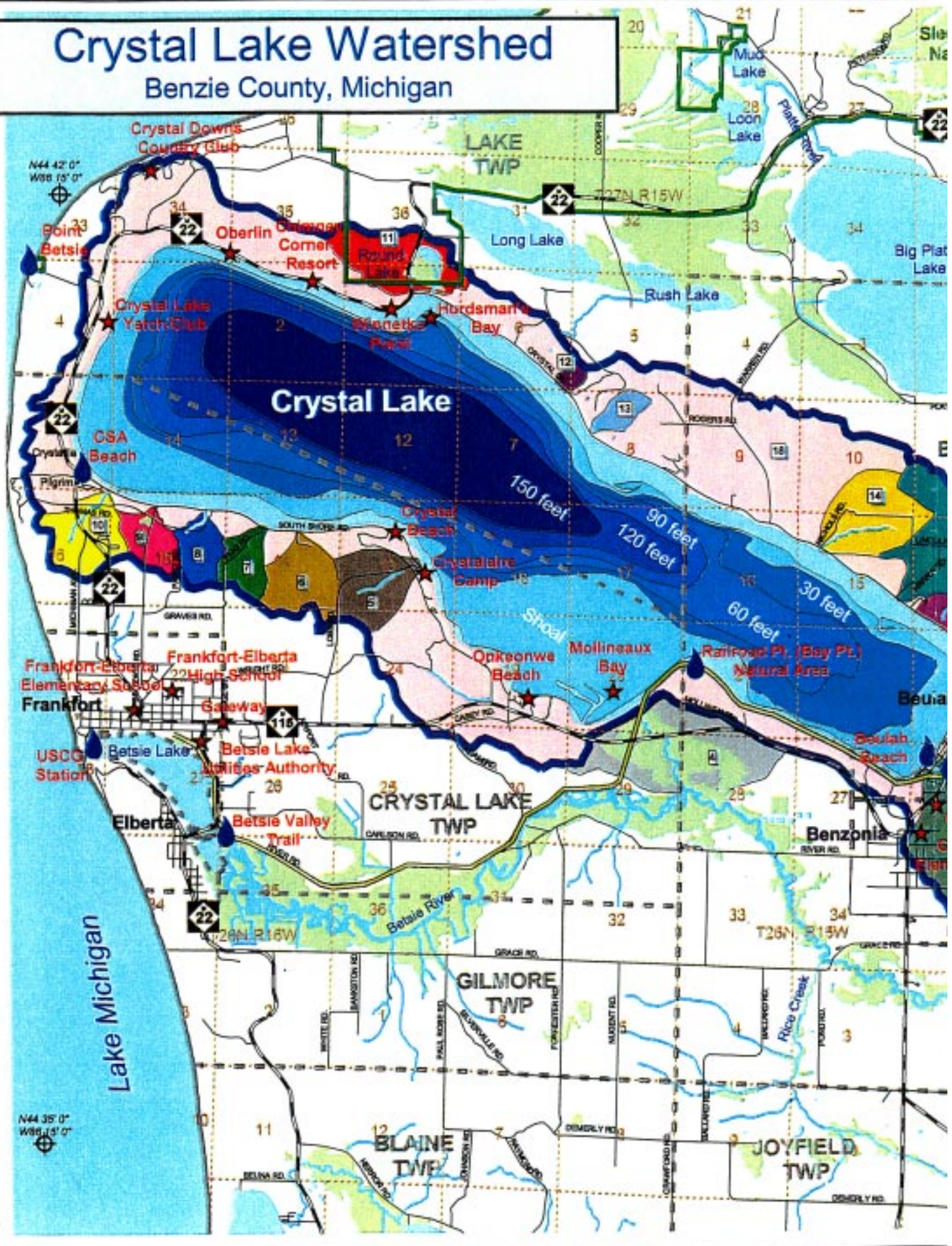
The Crystal Lake Watershed is unique - the surface of the Lake is about 35% of the total Watershed (land + water). It covers 43.67 square miles (28,145 Acres) with a perimeter of 44.65 miles based on latest computer calculations (NWMCOG and Meridian Geographics, 2001). The surface area of Crystal Lake is 15.4 square miles (9,854 Acres), making it the 9th largest inland Lake in Michigan! It contains a lot of "crystal" clear water - almost a quarter of a trillion gallons (242,000,000,000 gallons = 740,000 Acre-ft = 0.220 cu mi)! If all this water were spread evenly over all of Benzie County (assuming it was flat and water didn't soak into the ground), it would cover the land to a depth of 3'-8", or just about head-high for a five-year-old. Since its original survey, Crystal Lake has changed only slightly in area, but dramatically in level - now set at 600 +/- 0.25 feet (Great Lakes datum), summer to winter. A list of Watershed FAQs is at [http://www.clwf.org/watershed\\_FAQ.htm](http://www.clwf.org/watershed_FAQ.htm).

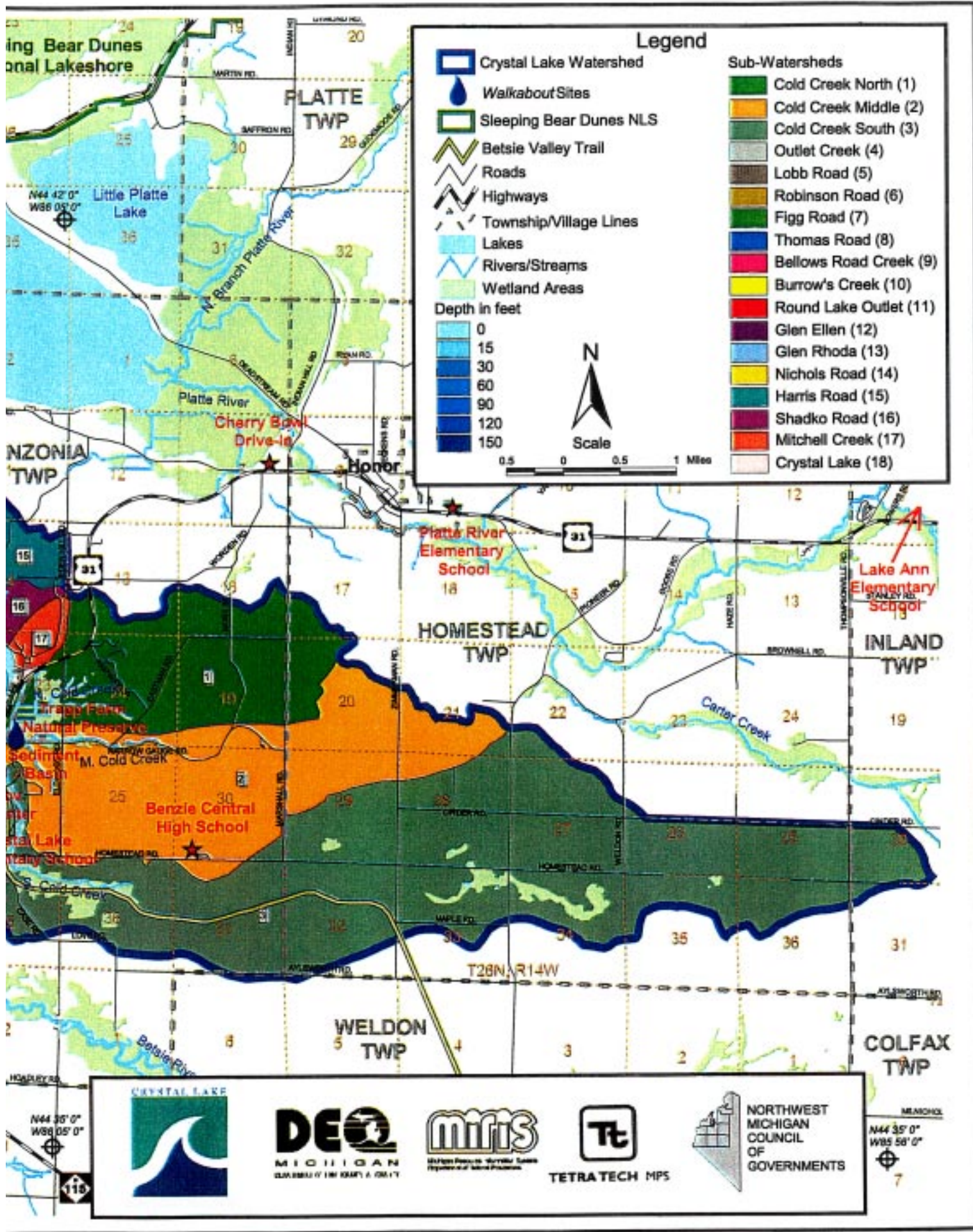
The Crystal Lake Watershed contains many diverse, but hydrologically intertwined ecologies and unique environmental niches, including active sand dunes, forested heights, wetlands, tributaries, and a large deep inland lake connected by an unnavigatable outlet to the Betsie River on to Betsie Bay at Frankfort and then into Lake Michigan. Crystal Lake, with its immense body of pristine water of exceptional clarity, mixed sandy and rocky nearshore perimeter, sandy shoreline, deep marl bottom, and high-ridged vistas, captivates all who view it. The responsibility of those of us in the present is to respect, maintain, and preserve the character of the Crystal Lake Watershed for the generations that follow us. The unique features of the Crystal Lake Watershed make it both very resistant and potentially vulnerable to environmental impacts. Concerns that affect property owners and visitors:

- W Septic Systems & Alternatives.
  - W Lawns, Gardens, Fertilizers, & Pesticides.
  - W Natural Greenbelts, Land Conservancies, & Scenic Vistas.
  - W Boating, Swimming, and Fishing.
  - W Litter, Garbage, & Hazardous Materials.
  - W Planning & Zoning.
  - W Land Use & Water Access.
  - W Construction & Development.
  - W Land Cover, Trees, Other Vegetation -the Viewshed.
  - W Critical Areas - Steep Slopes, Wetlands, Dunes, & Other Critical Habitats.
  - W Erosion & Shoreline Protection.
  - W Soil, Sediment, & Nutrient Runoff.
  - W Atmospheric Deposition & Ozone.
  - W Aquatic Vegetation, Fish, & Waterfowl.
  - W Algae, Bacteria, & Molds.
  - W Nonindigenous Plants, Animals, &
  - W Microorganisms.
  - W Aesthetics & Noise.
  - W Natural, Economic, & Social Challenges.
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# Crystal Lake Watershed

Benzie County, Michigan





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