

## Earth's Hydrosphere

Earth's **hydrosphere** is composed of all of the water on or near the Earth. This includes oceans, rivers, lakes, and even the moisture in the air.

### Water Distribution on Earth

Water covers nearly 75% of the surface of the Earth. All water is loosely classified as one of two types: salt water or fresh water.

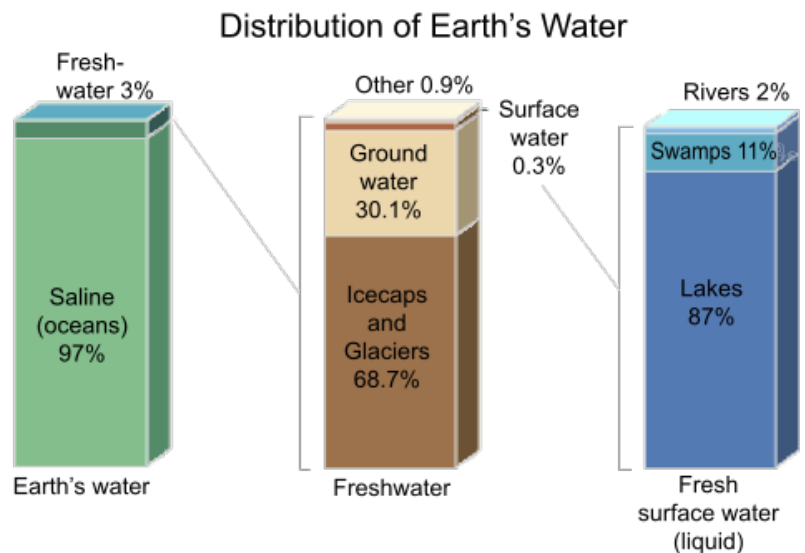
**Salt water** is water that contains 30 – 50 grams of salt per liter of water. Around 97% of all of Earth's water is salt water, most of which is contained in the oceans.

**Fresh water** is water that contains less than 0.5 grams of salt per liter. The remaining 3% of Earth's water is fresh water.

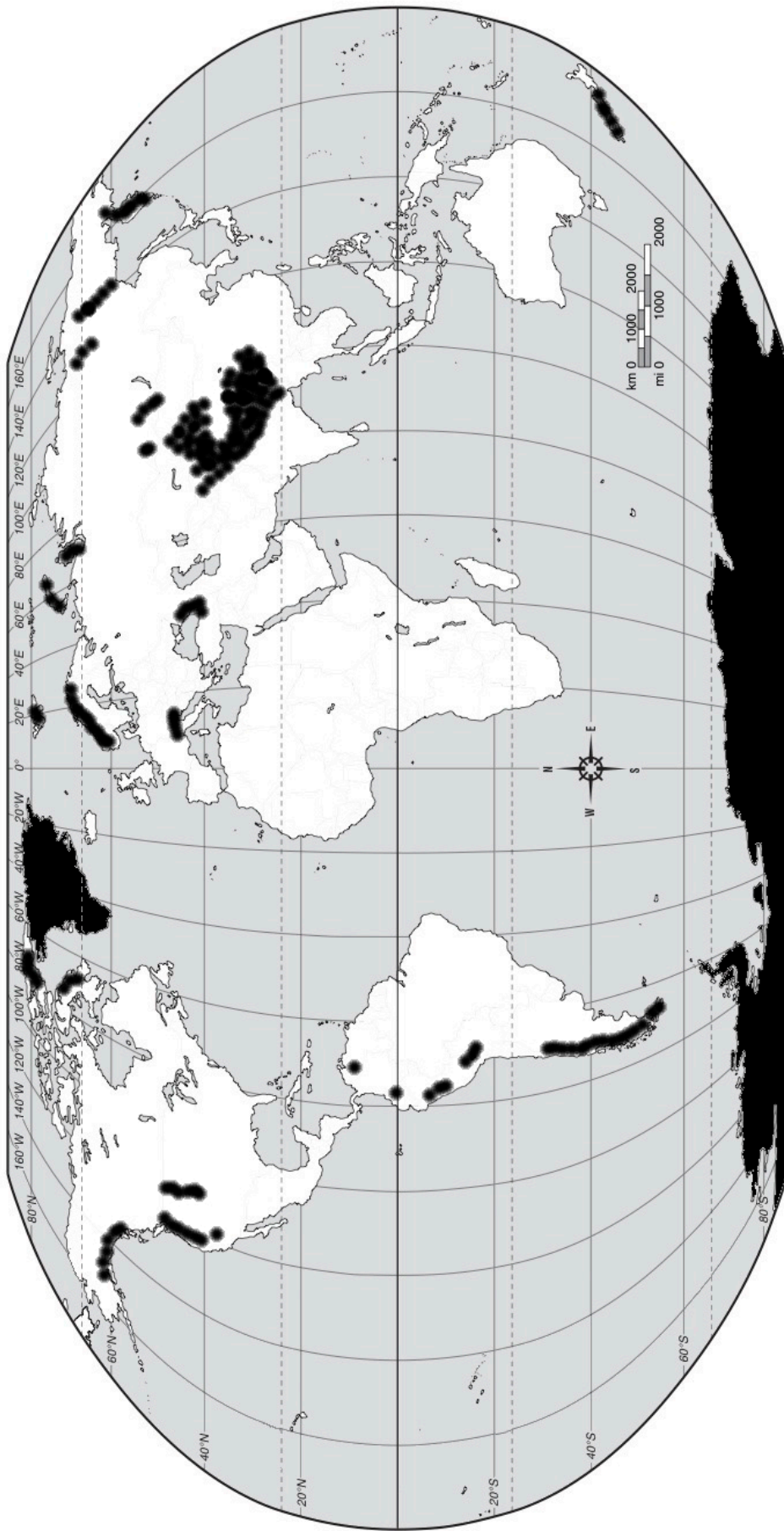
Note: Water that is in the range between fresh and salt (0.5 to 30 grams of salt per liter) is usually referred to as brackish water. Water with more than 50 grams of salt per liter is called brine.

While Earth's salt water is almost entirely found in the oceans, Earth's fresh water is much more unevenly distributed. The distribution of fresh water on Earth is approximately as follows:

- Ice caps and glaciers – 68.7%
  - Antarctic ice cap (90%)
  - Greenland ice cap (9%)
  - Other glaciers (1%)
- Groundwater – 30.1%
- Surface water – 0.3%
  - Freshwater lakes (87%)
  - Swamps (11%)
  - Rivers (2%)
- Ground ice and permafrost – 0.86%
- Atmosphere – 0.04%



The map on the next page illustrates the location of Earth's glaciers (in black).



### Assignment

Fresh water is an extremely valuable resource. Canada is very fortunate to contain much of the fresh water on Earth.

Load the following PDF file in your web browser:

<http://www.worldwater.org/data20082009/Table1.pdf>

The data table contained in this document describes the amount of renewable fresh water available to every country in the world. By examining this data, complete the table below:

Country	Fresh Water ( $km^3 / year$ )
Brazil	
Russia	
Canada	
China	
Indonesia	
United States	
Tunisia	
Libya	
United Arab Emirates	
Bahrain	
Qatar	
Kuwait	
Malta	

The first 6 countries have the largest amounts of fresh water in the world. The last 6 countries have the smallest amounts of fresh water in the world.

Write a one page report discussing the implications for Canada, and for the rest of the world, of the unequal distribution of fresh water. Consider the possible implications for health, agriculture, trade, and other factors you consider important.