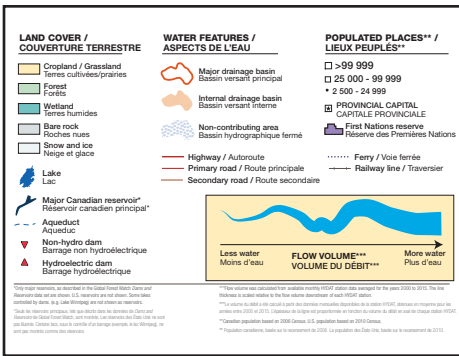
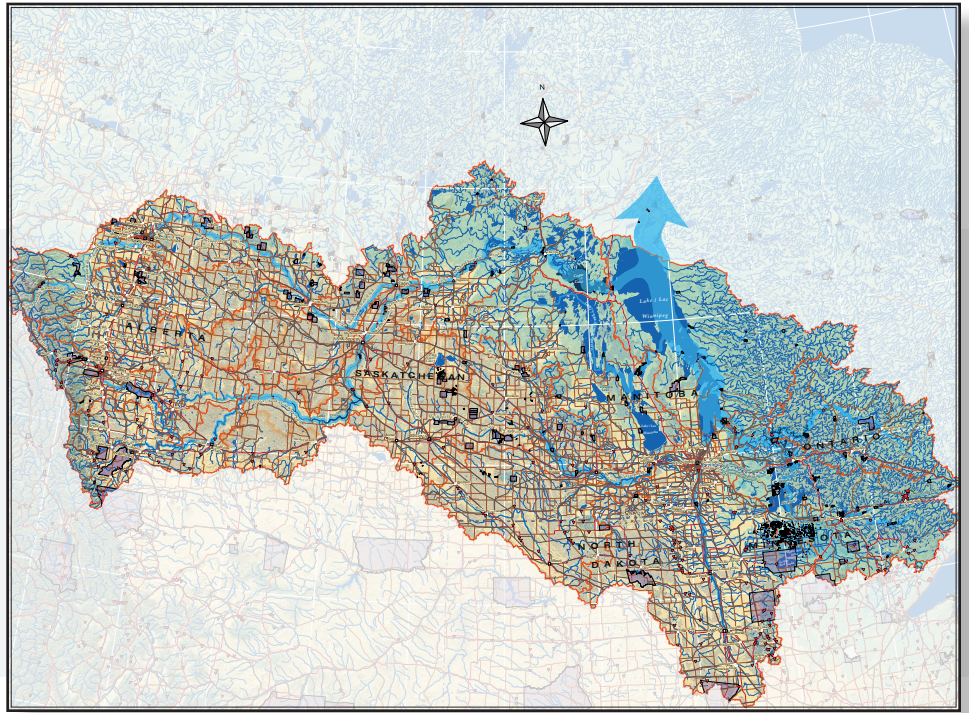




OPEN Water is an innovative educational project that uses the Lake Winnipeg watershed to introduce the concept of watersheds as geographical boundaries (think ecozones or political borders) to students in Canada and the United States.



LAKE WINNIPEG is the 10th largest lake in the world by surface area and one of the largest watersheds in the world. It encompasses parts of four provinces (Alberta, Saskatchewan, Manitoba, Ontario) and four U.S. states (Montana, North Dakota, Minnesota, South Dakota). The watershed is nearly 1,000,000 km² in size and is home to more than 7 million people.

Lake Winnipeg is the last remains of glacial Lake Agassiz and has several rivers flowing into it, including the Red, Winnipeg, and Saskatchewan.

These three rivers make up on average more than 60 per cent of the total river flow into the lake. Only one river flows out of Lake Winnipeg, the Nelson River, which drains into Hudson Bay.

Lake Winnipeg is shallow relative to other large lakes. On average, the lake is about 12 metres deep and, with its many bays, harbours and points, the shoreline of the lake is about 1,750 kilometres long.

Lake Winnipeg is suffering from many environmental issues such as an explosion of algae, caused by excessive amounts of phosphorus seeping into the lake. In 2013, the Global Nature Fund declared Lake Winnipeg as the “most threatened lake of the year”. Six aquatic invasive species are found in Lake Winnipeg. Although it is difficult to predict what

impacts these species may have, they could alter ecological relationships among native species, affect ecosystem health and function, the economic value of ecosystems, and human health.

O = Observe
P = Participate
E = Experience
N = Network

CANADIAN
Geographic

EDUCATION

IN THE CLASSROOM

Engage your students with the OPEN Water Project by using the Lake Winnipeg Watershed tiled map in your classroom.

The map is accessible at cangeoeducation.ca and a version is available in the April 2016 *Canadian Geographic* issue.



WHAT IS WHERE, WHY THERE, WHY CARE?

At its most basic, geography seeks to answer three questions:

WHAT IS WHERE?

Spatial context; location

WHY THERE? Connections; interrelationships; processes

WHY CARE?

Importance; action; reaction

🌍 **WHAT IS WHERE?** Locate and indicate your community on the map. What rivers/waterways link it to Lake Winnipeg.

🌍 **WHY THERE?** Explore the effect of glaciation on the Lake Winnipeg watershed.

🌍 **WHY CARE?** Define citizen action. Apply it to the environmental issues pertaining to the Lake Winnipeg watershed.

🌍 **WHAT IS WHERE?** Using the map scale and key, write a paragraph describing your community's location in relation to Lake Winnipeg.

🌍 **WHY THERE?** Analyze the physical and human processes that link the seven million people who live in the watershed.

🌍 **WHY CARE?** Using the news media, investigate current citizen-led initiatives focussed on the Lake Winnipeg watershed.

🌍 **WHY CARE?** Connect human settlement patterns and land use to environmental concerns in the watershed.



WATERSHED VOCABULARY

Algae: Any one of various aquatic plants without true stems, roots, and leaves - but containing chlorophyll.

Citizen action: People of the community doing something about a problem, problems, or needs they identify in their community.

Flood control: Act or technique of trying to control rivers with dams to minimize occurrence of floods.

Ground water: Water under the surface of the earth that feeds springs and wells.

Runoff: When water runs off of a sloped surface.

Invasive species: A species that does not naturally occur in a specific area and whose introduction does or is likely to cause economic or environmental harm or harm to human health.

Velocity (as it relates to stream flow): The speed of the water's downstream movement, which varies depending on the slope of the land and corresponding streambed.

Water monitoring: Periodic scientific tests conducted on a body of water or waterway, to determine its water quality.

Water pollution: The addition of harmful material to water in concentrations or sufficient quantities that adversely affect its usefulness or quality.

Water quality: A rating given to a body of water based on the diversity of life that can live there.

Watershed: The land area from which surface runoff drains into a stream channel, lake, reservoir or other body of water, also called a drainage basin.

Wetlands: A low lying area of land that is saturated with moisture.