

## Drainage Basins

---

### Abstract

A drainage basin is an area that drains all precipitation received as a runoff or base flow (groundwater sources) into a particular river or set of rivers. Canada's major drainage regions are the Atlantic Ocean, Hudson Bay, Arctic Ocean, Pacific Ocean and Gulf of Mexico.

---

A drainage basin, sometimes called a watershed, is an area where all surface water shares the same drainage outlet. Surface water consists of the tiny trickles of water flowing on the surface of the Earth that develop into larger streams and eventually combine to form a river.

Rivers are organized into networks, each with its own recharge area upstream, and drainage channel and mouth downstream. Networks are ordered from ocean to main river to secondary rivers to streams which correspond to ocean basins, river basins, sub-basins, sub-sub-basins, and so forth. The boundary of a watershed is called a drainage divide.

In a drainage basin, water flows from high to low, from upstream to downstream. Basin recharge is a function of precipitation, soil and bedrock permeability, absorption of water in the soil by plant roots, and evapotranspiration. As part of the latter process, plants return moisture to the atmosphere by transpiration, and the water eventually returns to Earth in the form of precipitation (for example as water, snow or hail).



**Figure 1:** Wilberforce falls on the Hood River, Northwest Territories  
**Source:** Geological Survey of Canada (photo number A94S0056).

## Mapping Note

On this map, river flow (discharge) was the critical factor used to delineate basin boundaries. All rivers with an annual mean flow higher than 10 000 cubic feet per second were depicted. However, land areas containing river basins that did not meet this annual mean flow threshold were assigned to the generic category "seaboard". The major river basins are the rivers that directly flow into the ocean. Within each major river basin, up to three levels of component basins were identified. In addition, water diversions larger than 1000 cubic feet per second were mapped.

---

## Map Sources

### Drainage Basins

This map was simplified from the National Atlas of Canada 5th Edition map "Canada-Drainage Basins," printed in 1985.

## References

Environment Canada Ontario Region and United States Environmental Protection Agency. 1995. The Great Lakes, Third Edition. Environment Canada Ontario Region and United States Environmental Protection Agency. ISBN 0-662-80281-0, Government of Canada catalogue number : En 40-349/1995E.

Newfoundland and Labrador. Water Resources Division. 1992. Water Resources Atlas of Newfoundland. Project manager Wasi Ullah, project coordinators Anil Beersing, A. Blouin. Cartographer C.H. Wood, A. Rodgers. Publisher Water Resources Division Government of Newfoundland and Labrador.

## Related Web sites (1999 – 2009)

### Federal Government

Environment Canada. Freshwater Web Site

<http://www.ec.gc.ca/water/>

This web site gives access to the nature of water, water policy and legislation, the management of water, water and culture, and informational resources and services.

Environment Canada. The National Water Research Institute

<http://www.ec.gc.ca/inre-nwri/>

The National Water Research Institute (NWRI) is Canada's largest freshwater research establishment. NWRI conducts a comprehensive program of research and development in the aquatic sciences, in partnership with the Canadian and international science communities.