WATER YEAR DATA SUMMARY 2005-2006

2007

Minnesota

Department of Natural Resources

Waters

Introduction

This publication provides a review and summary of basic hydrologic data gathered through DNR Waters programs. There are four major areas of data collection, including climatology, surface water, ground water and water use. These areas are arranged in order of the hydrologic cycle (see diagram on page iv), and important facts are provided concerning the distribution and availability of Minnesota's water resources.

Basic hydrologic data are essential to a variety of water resource programs and related efforts. The extent of our knowledge depends on the quality and quantity of hydrologic data. Analysis and use of data are vital to understanding complex hydrologic relationships. With expanding technologies, there is a greater need for even more data of higher quality.

The DNR Waters website at **mndnr.gov/waters** provides a wealth of information on Minnesota's lakes, rivers and streams, wetlands, ground water and climate - much more than can be included in this summary report. Maps, publications, forms, educational resources and answers to common water resources questions can be found on the site. Visitors will find access to lake level data, stream flow information and ground water level data. The site, which is updated regularly, is intended to help the citizens of Minnesota become better stewards of the state's water resources by providing comprehensive information about those resources.

This report is a continuation of Water Year reports published by DNR Waters in 1979, 1980, 1991, 1993, 1995, 1997, 1999, 2001, 2003 and 2005. This edition is also available on our website.

Water Year

The climatology, surface water and ground water data presented are for Water Years 2005 and 2006.

WY 2005: October 1, 2004 - September 30, 2005
WY 2006: October 1, 2005 - September 30, 2006

Use of water year as a standard follows the national water supply data publishing system that was started in 1913. This convention was adopted because responses of hydrologic systems after October 1 are practically all a reflection of precipitation (snow and rain) occurring within that water year.

Water use data are reported and presented on a calendar year basis.

Acknowledgements

My first year of editing the Water Year Data Summary Report has been an eye-opener. I have increased respect for the work that has been completed in the past by recently-retired Glen Yakel and the writers/producers of previous reports. In addition, a lot of time and effort goes into the data gathering, data compilation and summary reports. As mentioned in virtually every chapter here, the usefulness of the data for interpretation of water-related issues is invaluable. Many thanks to all who make it happen.

Because of the increasing sophistication of data users, we thought that we would try a new way of providing the report. Desiring the flexibility of color and size, and the ability to link to websites of interest, we have opted to distribute the report in full color via the DNR Waters website. There will be an option of downloading separate chapters of the report. If you would like a printed version or compact disk (CD) of any portion of the report, please let us know and we will accommodate you.

Photographs have been added this year, most of which were taken by DNR staff, particularly from the Division of Waters. Although we weren't able to use all photos submitted, we thank all those people who took the time to respond to our request.

We wish to express our gratitude to the listed authors and others who contributed to this publication. Thank you to Nick Kroska for his proof-reading skills in refining this report. Special thanks to Jim Zicopula for assistance with layout and design.

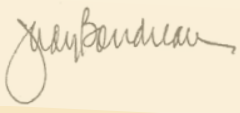

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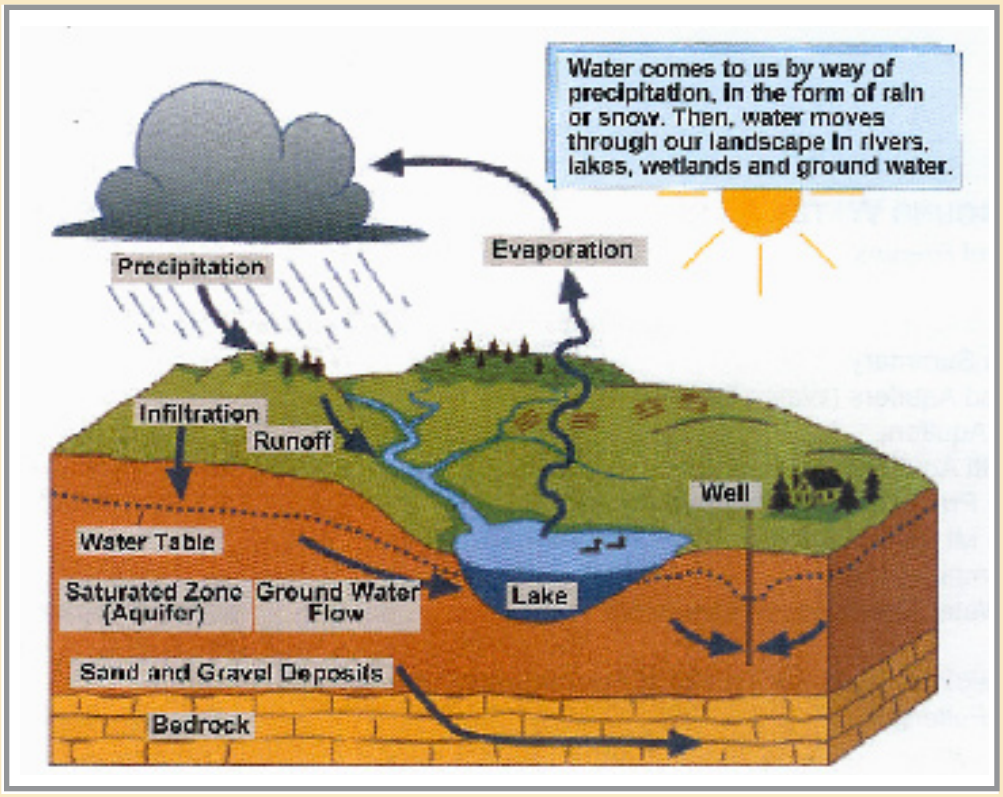
Table of Contents

NOTE: colored text indicates a link to either a website or another page in the report.

Table of Contents

Hydrologic Cycle



The hydrologic cycle is a concept used to explain the movement of water around the earth. This movement is continuous and has no beginning or end. Change at any point in the cycle will be reflected later in the cycle.

Surface water, which predominantly exists in oceans, is evaporated into the atmosphere by the energy of the sun. It returns to the earth as precipitation (rain or snow). As precipitation falls, it may be intercepted by vegetation and evaporate or it may reach the ground surface. Water that reaches the surface may either soak into the ground or move downslope. As it soaks into the soil (infiltration), it may be held in the soil or continue to move downward and become ground water. Ground water may be stored in the ground, returned to the surface as a spring, flow into a concentrated body such as a stream or lake, or be returned to the atmosphere by plant transpiration. Water that does not infiltrate the soil moves downslope, until concentrated areas form a stream. Streams lead to lakes and into other streams, which ultimately return the water to the oceans.

At any point where water is on the ground surface, it is subject to evaporation into the atmosphere or infiltration into the soil.

Minnesota Counties