Contents

Welcome!

The Spokane Valley-Rathdrum Prairie Aquifer Atlas presents a comprehensive summary of the region's most precious groundwater resource and is a basic reference of the geographic, geologic and hydrologic characteristics of this Aquifer. It is intended for broad community use in education, planning, and general technical information. The preparation and publication of the original Atlas were partially funded by a United States Environmental Protection Agency aquifer wellhead protection grant.

The Spokane Valley-Rathdrum Prairie Aquifer spans two states (Washington and Idaho) and lies within four counties (Kootenai, Bonner, Stevens and Spokane). Natural resources, such as the Aquifer, that cross political boundaries are often subject to different, and sometimes conflicting standards, protection and uses. This Atlas is a joint effort by agencies in both states to create a holistic representation of the Aquifer as both a geologic feature and a natural resource used daily by more than 500,000 people.

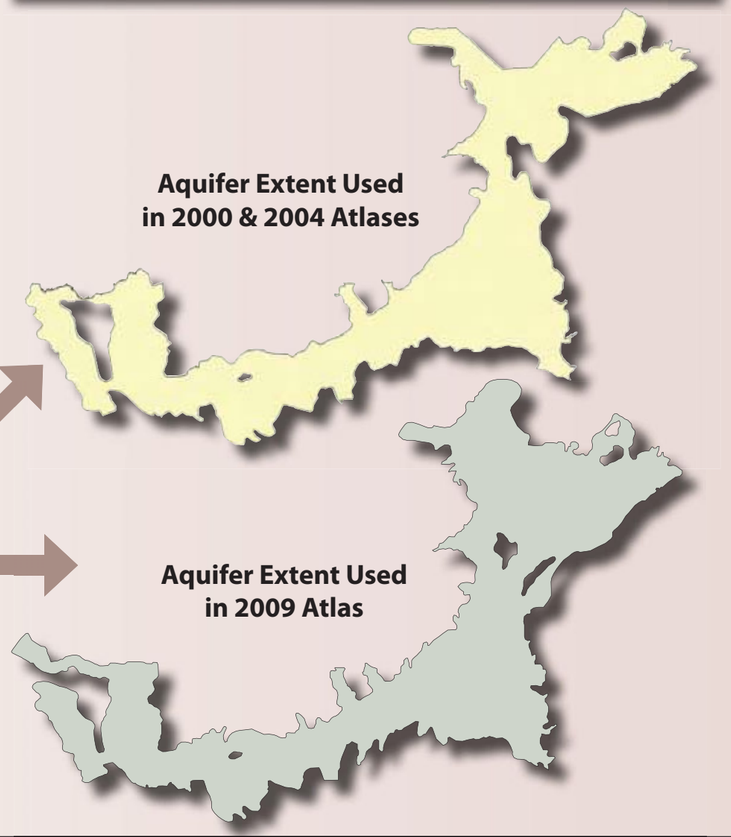
Political boundaries are absent on the front cover map. The authors intend the reader to first view the Aquifer as a continuous natural feature, then investigate the various aquifer elements presented in this Atlas. The authors believe that factual information about the Aquifer will generate greater public understanding of the region's groundwater and lead to continued protection and wise use of this precious and finite resource.

The original Aquifer Atlas was published in 2000, and an Update was issued in 2004. This document is an update of the 2004 publication that includes information from the 2007 USGS Bi-State Aquifer Study.

A Bi-State Aquifer Study

In response to concerns about continued growth, water management issues, and water availability, a bi-state aquifer study was initiated in 2004 by the Idaho Department of Water Resources, the Washington Department of Ecology, and the U.S. Geological Survey. The study was funded by: Congressional appropriations through the U.S. Environmental Protection Agency, state funding from both the Washington and Idaho legislatures and staff support from both state agencies. The total study cost was approximately $3.5 million.

Building upon previous studies and new data from a coordinated ground and surface water monitoring program conducted in 2004-2005, the study reassessed the hydrogeology and water budget of the Spokane Valley-Rathdrum Prairie Aquifer (Aquifer). The Aquifer boundary has been redrawn to reflect recently available geologic information (see below), and the result is a new, detailed estimate of the shape of the basin. A key objective of the study was to develop a ground-water flow model to serve as a tool for estimating Aquifer dynamics, and the model was completed in 2007. Results of this study were incorporated into this Atlas update.



Aquifer Extent

The Aquifer extent designations differ somewhat between investigators and over time. The 2000 and 2004 Aquifer Atlases used a modified version of the original Sole Source Aquifer boundary designated by the USEPA in 1978, as shown at upper right. The extent used in this document is the same defined in 2005 by the USGS in their Scientific Investigations Report 2005-5227, as shown at right and on page 19. The Aquifer extent used in the 2007 groundwater modeling (see page 17) is a modified version of the 2005 USGS extent.

Navigating the Atlas

The pages are organized into four (4) theme categories with a unique color for each.

The Aquifer

Aquifer Formation

Water Budget

General Reference