

IDAWRA: Groundwater-flow model for the Wood River Valley aquifer system, south-central Idaho
February 1, 2017, 11:30 - 1:00
Washington Group Plaza Training Room, 720 Park Blvd., Boise
Dr. James R. Bartolino, U.S. Geological Survey

Idaho Section of the American Water Resources Association

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A three-dimensional numerical model of groundwater flow was developed for the Wood River Valley (WRV) aquifer system, Idaho, to evaluate groundwater and surface-water availability at the regional scale. This mountain valley is located in Blaine County and has a drainage area of about 2,300 square kilometers (888 square miles). The model described in this report can serve as a tool for water-rights administration and water-resource management and planning. The model was completed with support from the Idaho Department of Water Resources, and is part of an ongoing U.S. Geological Survey effort to characterize the groundwater resources of the WRV. A highly reproducible approach was taken for constructing the WRV groundwater-flow model. Flow in the WRV aquifer was simulated using the MODFLOW-USG groundwater flow model. The transient flow model simulates groundwater flow between 1995 and 2010. Temporal changes in aquifer storage are most affected by areal recharge and groundwater pumping, and also contribute to changes in streamflow gains.

For more information:

- Fisher, J.C., Bartolino, J.R., Wylie, A.H., Sukow, Jennifer, and McVay, Michael, 2016, Groundwater-flow model of the Wood River Valley aquifer system, south-central Idaho: U.S. Geological Survey Scientific Investigations Report 2016–5080, 71 p., <http://dx.doi.org/10.3133/sir20165080>.
- Bartolino, J.R., 2014, Stream seepage and groundwater levels, Wood River Valley, south-central Idaho, 2012–13: U.S. Geological Survey Scientific Investigations Report 2014–5151, 34 p., <http://dx.doi.org/10.3133/sir20145151>.

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- Bartolino, J.R., and Adkins, C.B., 2012, Hydrogeologic framework of the Wood River Valley aquifer system, south-central Idaho: U.S. Geological Survey Scientific Investigations Report 2012–5053, 46 p.
- Bartolino, J.R., 2009, Ground-water budgets for the Wood River Valley aquifer system, south-central Idaho, 1995–2004: U.S. Geological Survey Scientific Investigations Report 2009-5016, 36 p.

Jim Bartolino received his Ph.D. in geology and civil engineering from Texas Tech in Lubbock and his B.S. and M.S. in geology from West Texas State University in Canyon. He has been a hydrologist for the U.S. Geological Survey since 1991 starting in Austin, then Albuquerque, and finally Boise; currently he is a project chief and the ground-water specialist for the Idaho Water Science Center. His current projects include a hydrogeologic framework and groundwater-flow model of the Treasure Valley. He recently completed a groundwater-flow model of the Wood River Valley, Idaho, and a groundwater assessment of Gem County, Idaho. Other groundwater characterization studies he has worked on include Ada County, Idaho; the Spokane Valley-Rathdrum Prairie aquifer of Idaho and Washington; the East Mountain area of New Mexico; the Middle Rio Grande Basin of New Mexico; and areas of Iraq and Ethiopia. Previous projects include the use of water temperature for describing groundwater/surface-water interaction, the description of hydrogeology with assorted geophysical methods, the use of environmental tracers to characterize recharge in a desert basin, irrigation-drainage water quality, transport and fate of agricultural chemicals, and site investigation for contaminants. Prior to joining the USGS as a hydrologist he worked as a reclamation geologist for the National Park Service at Redwood National Park, California; lectured in environmental geology, engineering geology, and physical geology at Texas Tech; and worked as a hydrologic technician for the USGS. He has about 60 scientific publications, is a former president of the Albuquerque Geological Society, and has served on the adjunct faculty at the University of Idaho.

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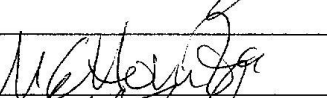
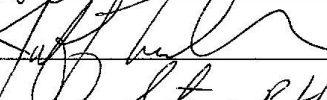
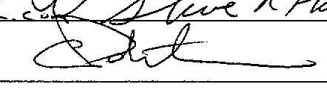

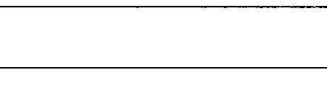
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