Shmagin Co-Authors Water Article

Boris Shmagin, adjunct professor in the South Dakota Water Resources Institute, is a co-author of an article entitled "Water Resources Sustainability Indicator: Application of the Watershed Characteristics Approach" that appeared in the March 2013 edition (volume 27, pp 1221-1234) of Water Resources Management, an International Journal of the European Water Resources Association. The article is the most recent publication in a series of papers and conference presentations documenting on-going water resources studies in the state of Minnesota.

In the article, a cartographic tool and an example of its application to the Twin Cities metropolitan area in Minnesota to evaluate renewable water resources are described.

Shmagin and his colleagues from the University of Minnesota have worked together for a long time on the development of the methodology described in their article. The general approach used by the research team is summarized in the following statement: "Water is a single resource, regardless of whether it appears as ground or surface water. Therefore, to address the complex issue of water resources sustainability, both ground and surface water must be quantified together. Water flowing through the hydrologic system, rather than the volume stored within, represents the renewable amount available for sustainable use. Thus, sustainable water management must be based on connectivity as a property of all components of the terrestrial hydrologic system linked to water balance characteristics operating at multi-scales, along with the dynamic nature of interactions in the complex environment."

Shmagin dreams of someday bringing similar research to water-thirsty South Dakota.

A series of Landsat satellites has been providing information about our Earth since 1972. The latest in the Landsat series, the Landsat Data Continuity Mission (LDCM), was launched by NASA from Vandenberg Air Force Base in California on February 11, 2013. About 100 days after launch, the USGS will take control and the spacecraft will be renamed Landsat 8. The first engineering image from LDCM was acquired on March 18. That image as well as other information about Landsat 8 is available at http://landsat.usgs.gov/LDCM_DataProduct.php and at http://www.nasa.gov/mission_pages/landsat/news/first-images-feature.html. Operational data are estimated to be available in late May 2013. Each day, 400 scenes of data will be acquired by the Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS) aboard the spacecraft. The data will be archived at the USGS EROS Center near Sioux Falls, SD, and ready for download at no cost from EROS within 24 hours of reception.

From a distance of more than 400 miles above the earth surface, a single Landsat scene can record the condition of hundreds of thousands of acres of grassland, agricultural crops, or forests. Each Landsat image gives a view as broad as 12,000 square miles per scene while describing land cover in units the size of a baseball diamond.

The Landsat program also offers substantial economic benefits, including an estimated $100 million per year in management of water for irrigated agriculture in western states. Federal, state and local agencies rely on Landsat as a data source on wildfires, consumptive water use, land cover change, crop conditions, rangeland status and wildlife habitat. Landsat images can show where vegetation is thriving and where it is stressed, where droughts are occurring, where wildland fire is a danger, and where erosion has altered coastlines or river course.

For further information about Landsat data and/or for assistance in locating and downloading the free data, contact Mary O’Neill, Kevin Dalsted, or Jeppe Kjaersgaard at the Water Resources Institute (605-688-4910).
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Providing water education to area 4th graders in the form of activities, presentation, and exhibits

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May 7, 2013

- The Big Sioux Water Festival is a national model festival.
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- This year 1,033 4th grade students and 135 parents and teachers are attending from 30 area schools.
- There are more than 40 presenters from South Dakota, Minnesota, Nebraska, and North Dakota.
- Over 250 people from surrounding communities volunteer for this event.
- This event is made possible by donations from many companies, organizations, and groups supporting this program.
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Contact Trista at:
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Water News is published by the South Dakota Water Resources Institute at South Dakota State University, with the support and collaboration of the Department of the Interior, U.S. Geological Survey and South Dakota University, Grant Agreement No. 01HQGR0100.

Water News features water-related topics, including SDWRI activities. View and subscribe to our newsletter NOW online! http://www.sdstate.edu/abe/wri/newsletters/index.cfm

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