

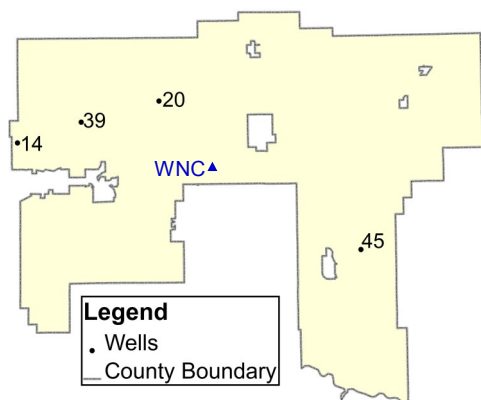


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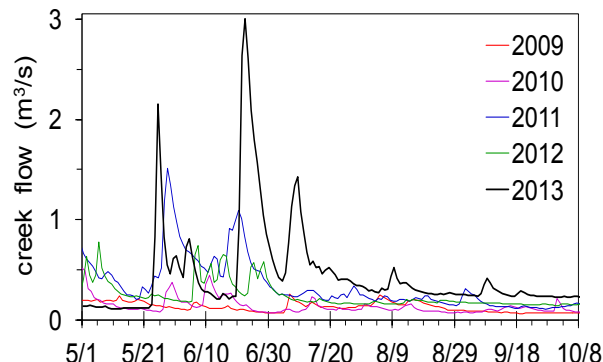
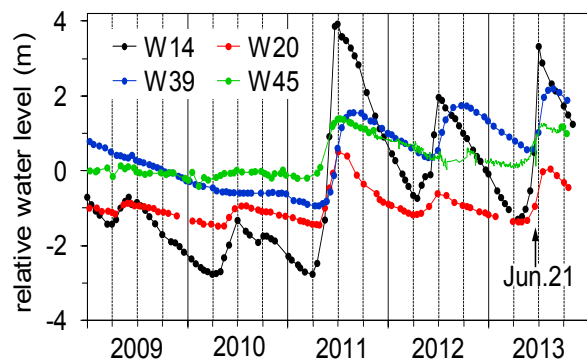
Newsletter for Rocky View County Community-Based Groundwater Monitoring Program  
Reporting progresses and updates of the program to community volunteers.

## June Flood in Southern Alberta

This year will be remembered for the flood in June. Severe rainfall that caused the flood was restricted to the eastern slopes of the Rocky Mountains, but we did receive a higher-than-normal amount of rain in Rocky View County. For example, rainfall in June recorded at the Calgary airport was 147 mm. In comparison, average June rainfall during 1981-2010 was 99 mm. An interesting question is “How did groundwater respond to the wet condition in June?” The water level data collected by volunteers of the Rocky View Well Watch provide answers to this question. The top graph shows the water level in four representative wells during the past five years. The water levels were rising slowly in May and early June after snowmelt recharge, and the heavy rain during June 20-21 pushed the water level even higher. This large recharge in June helped the aquifers to sustain high water levels in the fall. The heavy rain event also affected the flow of creeks in the County. For example, the bottom graph shows daily average flow rates recorded in the West Nose Creek. The peak flow on June 22, 2013 was the highest recorded flow during the past five years. As we have explained in previous newsletters, groundwater and surface water (such as creeks) are intimately connected. High groundwater levels after the recharge event provided a steady supply of baseflow to the West Nose Creek through numerous springs, resulting in a relatively high flow in the fall. This is a good news for fish and other creatures in the creek. You can see the water level in other wells by visiting the Rocky View Well Watch website (<http://rockyview.geocens.ca/>), and learn more about the connection between groundwater and creeks in the Groundwater Connections website (<http://groundwaterconnections.weebly.com/>).



Map shows the location of wells and the West Nose Creek (WNC) flow monitoring station. Top graph shows relative changes in water level in the four wells, where vertical lines are placed every three months. Bottom graph shows daily average flow in the WNC.



## Groundwater Mapping in Glenbow Ranch Provincial Park

Glenbow Ranch, located east of Cochrane, is a beautiful park overlooking the Bow River with some unique aquatic ecosystems sustained by numerous springs. Many of these springs discharge from the same Paskapoo aquifer system that provides groundwater to Rocky View County residents. To protect the spring-dependent ecosystem in this new Provincial Park, it is important to know where the springs are located and how they respond to weather conditions and land use change in recharge areas. This summer, we started working with the Park staff and volunteers to map and record the condition of springs. Our fourth-year student, Evan Mutual conducted part of the study as his senior thesis project. Evan has identified 76 springs within the park. They collectively discharge roughly 20-30 L/s (or 260-400 gallons per minute) of water. We are also working with two Grade-9 students, Leah Zaitlin and Magda Storkova, from Simon Fraser Middle School in Calgary. They monitored flow rates and water-quality parameters at two springs throughout the summer. Their results will be presented at the Calgary Youth Science Fair next spring.



Students studying springs (Left: Leah Zaitlin and Magda Storkova. Right: Evan Mutual).

## New Research Coordinator for the Rocky View Project

Our former project coordinator, Kathleen Little moved to Edmonton in July to start a new career as an environmental planner. A new hydrology technician, Shelby Snow was hired to take over part of Kathleen's work, as well as working on other on-going research projects. Shelby moved to Calgary after completing an undergraduate degree in Earth and Environmental Science at University of British Columbia - Okanagan. Shelby is originally from Chilliwack, BC where she worked at Agriculture and Agri-Food Canada doing research on pest management for Canadian farmers. After graduating, Shelby chose to focus on hydrological studies and is particularly interested in sustainability and transport mechanisms. She is excited to contribute to hydrogeology research at the University of Calgary and to work with the community in furthering the Rocky View Well Watch project. In her spare time, she enjoys horseback riding, hiking and playing soccer.



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