

March 2007

Foothills Edition — Dickson Dam to City of Red Deer

ALBERTA WATER QUALITY AWARENESS DAY

Over 2,750 people, including students, families and landowners, collected water quality results from 966 sites across Alberta in 2006. The Alberta Water Quality Awareness Day (AWQA), now in its third year, will once again be recruiting participants for 2007.

A province-wide education and awareness event, AWQA Day is designed to allow everyday Albertans to get out and test their local streams, lakes and wetlands. Test kits are provided free of charge for participants so they can get outside and learn about the water quality of any lake, stream, wetland or other surface water body of interest.

The water is tested for basic water quality parameters: temperature, dissolved oxygen, pH and turbidity.

Getting involved is easy...

1. Register and order your free water quality test kit by April 30th. Kits will be mailed in early May.
2. Choose a local lake, pond, stream, river, wetland or reservoir where you are interested in testing water. Each kit can analyze up to 50 samples. Take the opportunity to explore differences in water quality among locations and water body types.
3. Collect and analyze samples any time from May 15th to June 30th.
4. Share your results with hundreds of other water quality stewards across Alberta by entering your data on the AWQA Day website by July 15th. The findings are pulled together to create a snapshot of water quality in the province.

To learn more, visit: www.awqa.ca

THE FUTURE IS NOW

The Red Deer River Watershed Alliance has a new look! Their recently completed brochure and website is now available. Check out our site at <http://www.rdrwa.ca>! And keep your eyes out for our new brochure. We would love to know what you think about it. The cover features a leopard frog, an indicator species of a healthy aquatic ecosystem. The brochure talks about the benefits of a healthy watershed and suggests ideas as to how you can become involved with the Alliance.



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Definition:

“reach” verb

1. to stretch out or put forth; extend; reached out an arm
2. to succeed in getting in contact with or communicating with people

“reach” noun

1. the stretch of water visible between bends in a river or channel
2. range of scope or influence

Dickson Dam — Assuring water quantity and quality for the Red Deer River

By the time construction of Dickson Dam began in 1980, ten years of technical studies and planning had already been completed. An additional 3 years and a workforce of over 500 people later, and Dickson Dam has become a major component of Alberta's water management infrastructure, which is valued at nearly \$5 billion.

The initial push for the construction of a dam along the Red Deer River came as a result of growing concern among communities that rely on the Red Deer River for their water supply. During low flow periods the quantity and quality of water being drawn from the Red Deer River was low. One obvious solution was to construct a dam to better regulate the river and maintain higher flows.

Today, Dickson Dam provides two major benefits to Albertans – an assured water supply and improved water quality downstream. Secondary benefits of the Dickson Dam include flood and erosion control, recreational opportunities for water enthusiasts, and the potential for hydroelectric generation on a limited scale.

Assured water supply: During the spring and summer, runoff water is captured in Gleniffer Reservoir behind the dam. During the winter, water is released at a rate of 16m³/second. This flow not only meets the needs of downstream communities, and industries, but also allows for future growth.

Water Quality: A flow of 16m³/second during the winter contains enough dissolved oxygen to maintain a healthy fish population throughout the winter.

Flood and Erosion Control: Capturing water during the spring and summer reduces Peak flows along the Red Deer River. This lessens downstream erosion and gives some degree of flood protection.



An aerial view of Dickson Dam. The Gleniffer Reservoir is roughly 11 km long and 2 km wide.

Photo credit: Alberta Environment

Recreation: Gleniffer Reservoir, about 11km long and 2km wide, can be used for recreation activities like boating and fishing. However, changing water levels make beaches less appealing than those found on natural lakes.

Greg Nelson
Environmental Education and Awareness Specialist
Alberta Environment

Sylvan Lake Community Watershed Monitoring Project

Last April, the Sylvan Lake Watershed Stewardship Society began a two year water monitoring program. This project was funded with grants provided by Alberta Environment through the Alberta Stewardship Network, Lacombe County, the Town of Sylvan Lake, and the five Summer Villages of Norglenwold, Jarvis Bay, Birchcliff, Sunbreaker Cove, and Half Moon Bay. The Society thanks these municipalities and provincial agencies for providing the necessary resources to do this important work.

The project required obtaining water samples, in addition to measuring flow rates and key water characteristics. The parameters that we measured in the field were pH, conductivity, temperature, and dissolved oxygen. The samples that we collected were analyzed in a laboratory for total dissolved solids, concentrations of ammonia, nitrogen, phosphorus and the presence of bacteria. In all, samples were collected from six inflow sites around the lake. The summer of 2006 could be characterized as a low flow year; from 1 to 4 samples were taken at each location before the end of June. By the beginning of July, all streams had

dried up or presented insufficient flow for useful measurement.

The results of the analysis showed low oxygen levels at all sites that increased as the season progressed. Northwest Creek appeared to be well aerated. Naturally, the measured temperature increased as the weather warmed up. The pH of the inflows remained relatively constant throughout the season, and the highest values were measured at Northwest Creek. Conductivity and total dissolved solids increased during the sampling season – a factor more reflective of stream flow. Nutrient concentrations were typically higher during the beginning of the season due to the flushing of contaminants from the surrounding land into the streams with the spring runoff. The highest concentrations of nitrogen and phosphorus were measured at Jarvis Bay Creek; something that should not come as a surprise - possibly due to the higher density of residential development and the use of lawn fertilizers within the Jarvis Bay sub-division.

In terms of nutrient loading, the streams with the highest flows are those that ulti-

mately contribute the most nitrogen and phosphorus to the lake. In early April, Golf Course Creek contributed as much as 20 kg/day of nitrogen and 1.3 kg/day of phosphorus to the lake. This rate decreased substantially immediately after the spring thaw and was the lowest of the measured streams for the balance of the sampling season. It should be noted that when sampling at Golf Course Creek, most of the flow coming to the lake was ditch runoff along Hwy 11A rather than the creek that emerges from the Sylvan Lake Golf and Country Club property. It is the opinion of this correspondent that the source of nutrient contamination reaching the lake from Golf Course Creek comes primarily from residential development upslope from and towards Norglenwold rather than the golf course.

For more information on the water-monitoring project and to see detailed results please visit: www.slwss.org.

Kent Williamson, Project Manager
Sylvan Lake Watershed Stewardship

Calling all kids...

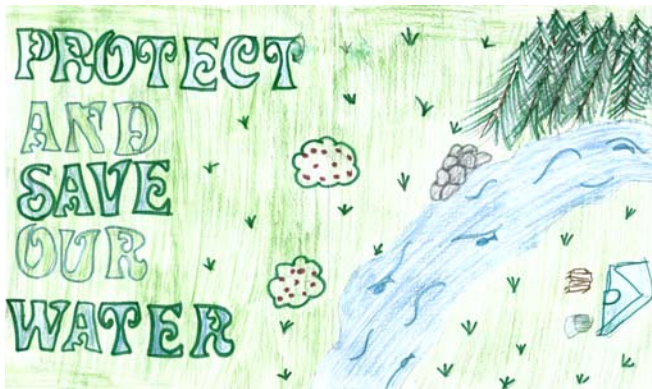


Hey Kids! I am looking for a name. Send in your suggestions to info@rdrwa.ca!

The Northern Leopard Frog was once the most wide spread frog species in all of North America. The Leopard Frog once called places as far away as California and New Mexico home! Sadly, by 1990, the Leopard Frog was found in only 32 places in Alberta! Today, the Northern Leopard Frog is listed as "Threatened" under the Wildlife Act. With your help and awareness, we want to have this species make a comeback by improving its habitat in our watershed.

Holy Family School—Red Deer

The importance of the watershed is being recognized by students within the Red Deer River Watershed. We recently received some excellent artwork from grade 5 students from Holy Family School in Red Deer. The following pictures were picked by representatives from Alberta Environment and the RDRWA. Congratulations to those students whose artwork was chosen!



Initiation of the State of the Watershed Project

The Red Deer River Watershed Alliance held its General Meeting in Drumheller on March 22 to kick off the initial talks on the State of the Watershed (SOW) initiative. Guest speakers Doug Thrussell and Petra Rowell from Alberta Environment gave background information on “watershed planning” and provincial guidelines as to what could be considered in a SOW report. Jay White of Aquality Environmental Consulting Ltd. provided a great overview on lessons learned from other SOW initiatives. Participants spent the afternoon in a workshop providing some initial guidance as to: a) what should a SOW report on; b) what might be some key indicators to measure the health of the watershed; c) what should the resulting watershed management plan address; and d) who are the key stakeholders that need to be involved. Thanks to all that participated! Similar talks will be held elsewhere in the watershed so look for upcoming forums on our website.

Beverly Anderson, Manager