

GRAND ACTIONS

THE GRAND STRATEGY NEWSLETTER

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Grand River
Conservation
Authority



The Grand:
A Canadian
Heritage River

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Cover photo

Irrigation equipment was a familiar sight this past summer as many watershed farmers relied heavily on irrigation to sustain crops during the hot, dry summer months.



WATER AND A YEAR OF EXTREMES

by Dwight Boyd, Grand River Conservation Authority

This has been a year of extremes—in precipitation, in temperature, and also in temps due to warm temperatures and water restrictions.

So what was the weather story in 2002? To answer this question we must go back to 2001. The summer of 2001 was dry and hot. After the summer, stream flows were nearing all time lows and wetland water levels were on the decline. Fortunately in the fall of 2001 our water fortunes changed; the fall was warm and wet with ideal conditions for groundwater recharge. These conditions continued into the winter, and the first snows arrived in mid December. In most areas the ground remained unfrozen throughout the winter.

The early winter of 2002 saw a light snowpack and, according to Environment Canada, was one of the warmest on record. A mid-March thaw removed much of the snow pack and temperatures swung from warm to cold. Temperatures for March through June

2002 were well below the long-term average. Kids often wore winter coats during the start of the sports season and Environment Canada recorded the spring of 2002 as the second coolest on record.

Precipitation throughout April through June was above the long-term average. Cool spring temperatures coupled with higher than normal rainfall provided ideal conditions for groundwater recharge. Fall and spring are critical times of the year to recharge the groundwater system, particularly the shallow system that supports streamflows and wetlands. Over the spring of 2002, in most areas, streamflows showed recovery back to the long-term average for the months of May and June. The other characteristic of this spring was regular rain. Rain occurred on about a seven-day cycle; lawns flourished and in some weeks required two cuts.

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EXTREMES

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In the last week of June, water fortunes changed again. The regular cycle of weekly rain ceased. In some areas of the watershed little or no rain was recorded until the end of July, a period of almost four weeks. Several areas recorded no measurable rainfall for 15 days. Temperatures also changed as the cold spring quickly became a blistering hot summer. By the end of July another Environment Canada record was broken. July was one of the warmest July's on record in southern Ontario, with the most number of nights exceeding 20°C overnight temperatures. The heat wave caused water temperatures in the river to remain close to 25°C overnight on several occasions.

The brief recovery in streamflows was also short lived. In less than two weeks, streamflows quickly receded from average conditions to 50% below average in several locations. Many of the gains in groundwater recharge over the fall and the spring quickly vanished as heat baked the landscape. Green vegetation turned brown and crisp with the heat and lack of rain.

Rains finally came in the last week of July in the form of intense thunderstorms. Following the last week in July, rains again ceased, particularly in the Guelph area and southern half of the watershed. Another hot dry period set in that lasted until mid September.

Northern and western parts of the watershed fared better in August with occasional rains. One exception was the southwestern area of the Burford and Scotland. Unconfirmed reports suggest the Burford area received 125 to 250 mm of rainfall over a period of a week in late July and most of this occurred in two torrential thunderstorms. Flows in Whitemans and McKenzie Creeks went from record low flows to record high flows for July, changing literally from drought to flood and back again to drought. The rains again ceased in

August in the southwest and by late August flows were again near all time lows.

The hardest hit areas were the City of Guelph, the Upper Speed and Eramosa Rivers, Mill Creek east of Cambridge, Whitemans Creek and McKenzie Creek, west of Brantford. Flows in these waterways were close to all time lows. Records have been kept for Eramosa River flows since 1962, and flows in 2002, although unconfirmed, appear to be the lowest on record.

Flows in the main Grand River, lower Speed River and lower Conestogo River all remained at near normal through 2002 due to the effect of major reservoirs operated by the GRCA. These reservoirs add water to the river during the summer low flow period and are a vital component of water management in the Grand River watershed. At times this past summer over 80% of the water in the Grand River through Kitchener was added from these reservoirs.

The low flow conditions that started in early July caused the Grand River Low Water Response Team to mobilize. The Ontario Low Water Response Program was initiated by the Province in 2000 following low water conditions experienced from 1997 through 1999. In this program water users from both public and private sector form a committee to deal with water use during times of low water or low precipitation conditions. It was first applied in the Grand River watershed during low water conditions in 2001. As a new program it is constantly modified and improved.

The Grand River Low Water Response Team is made up of municipal water managers, agricultural water users, aggregate industry, golf course water users, government agency representatives and GRCA staff. The team discusses watershed conditions and actions that can be taken by different water use sectors to ease the stress on the natural environment. Team members met by weekly teleconference calls from the second week of August through mid

September.

The program uses streamflow and precipitation indicators to assess watershed conditions during times of low water or precipitation. Different levels have been established based on flow and rainfall statistics in a given area. Level 1 indicates conditions are 30% below the summer average stream flow or precipitation. Level 2 indicates conditions are 50% below the long-term average, and Level 3 indicates conditions are 70% below the long-term average.

During a Level 1 condition a 10% voluntary reduction in water used is requested, and during Level 2 a 20% voluntary reduction is requested. Voluntary measures are intended to reduce stress on the water resource and the natural environment during times of low water. If level 3 conditions develop and all voluntary measures have been exceeded, the Province may use its powers to direct water takers with permits to reduce or cease water taking. Water users taking in excess of 50,000 litres of water per day must obtain a water-taking permit from the Regional Office of the Ministry of the Environment (MOE) in their area. The MOE can at any time stop illegal water takers who do not have a permit to take water and exceed the 50,000 litres a day criteria.

Several good things have already come out the program. Based on experience in 2001, the City of Guelph developed a comprehensive outdoor water use by-law, which is harmonized with low water response. This program was invoked in 2002 and helped the City of Guelph reduce water demand by 20%—30%, consistent with the Level 2 conditions that exist in that part of the watershed.

Level 2 conditions were declared for the hardest hit areas of the watershed including the upper Speed River, Eramosa River, Mill Creek, Whitemans Creek and McKenzie Creek. Meetings were held with the agricultural irriga-

tors in the Whitemans Creek watershed and the water users in the Speed, Eramosa and Mill Creek watershed. These meetings resulted in the formation of an irrigation advisory committee in the Mckenzie and Whitemans Creek areas, and additional representatives on the low water response team representing various water use sectors. Different sectors implemented voluntary water use reductions helping to reduce the impacts of the dry conditions.

Conditions are starting to improve with recent rain. It is hoped that conditions develop that will promote good groundwater recharge over the fall and next spring, although long range forecasts don't look promising. As we look back at the lessons of 2002, our objective should always be wise water use, not only during periods of low water or drought. Several municipalities in our watershed have developed water conservation programs. Check with your local municipality to determine if such a program exists in your area and find out what you can do to help conserve this precious resource.

A large section of the GRCA Web site at www.grandriver.ca has been dedicated to low water issues. For more information visit the site, or contact Lorrie Minshall, the Low Water Coordinator, at (519) 621-2763, ext. 223.

MILESTONES

Milestones are progress or products of *The Grand Strategy* Joint Work Plan.

Groundwater Map

A map estimating groundwater recharge was developed for the entire watershed earlier this year. For the first time estimates of groundwater recharge are available on a watershed basis to help water managers scope the critical areas in the watershed that

need protection or enhancement. The map was presented for peer review at a Hydrology and Groundwater Working Group meeting in June. The map will be available to the public later this year.

WHAT'S HAPPENING?

2nd Annual Water Forum

by Barbara Veale, GRCA

After weeks of dry hot weather, the skies opened on Friday, September 20, 2002, providing the Grand River watershed with some much needed relief in the form of rain—a perfect way to celebrate the 2nd Annual Grand River Watershed Water Forum. A capacity crowd of over 400 people from across the watershed and beyond congregated on the front lawn of the GRCA's Administration Centre in Cambridge, under the cover of a large blue and white striped tent, (*see photo below*) to participate in a program featuring an impressive roster of knowledgeable speakers from the GRCA, watershed municipalities, Ontario Federation of Agriculture, Canadian Environmental Law Association, local businesses and Six Nations. The theme

for the event was "*Our Water: Our Choice Our Future*". The morning session featured presentations speaking to the current and emerging water issues in the Grand River watershed while the afternoon focused on innovative technologies, services and management approaches in various sectors for sustaining our water resources.

The Water Forum opened with the First Nations Thanksgiving led by Norman Jacobs from Six Nations. Norman stressed the need for protecting our precious land and water resources, the life-blood of us all. He also encouraged us to work together to ensure that "Mother Earth" is kept healthy so our children and our children's children have clean water.

Words of welcome and encouragement were offered by Hon. Elizabeth Witmer, Deputy Premier of Ontario; City of Cambridge Mayor Doug Craig; Cambridge MP Janko Peric; Cambridge MPP, Gerry Martiniuk; and Grand River Conservation Foundation President Tom Land. Peter Krause, Chairman of the GRCA and Chair of Conservation Ontario challenged participants to think about

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WATER FORUM

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how we deal with competing and conflicting demands for water in the future, how we might change our institutions to deal more effectively with water issues, and how we actively engage the provincial and federal governments in providing leadership and seeking effective solutions with local conservation authorities.

Lorrie Minshall, Manager of Watershed Resources for the GRCA, talked about the watershed-wide water issues facing the people in the Grand River watershed. In the face of rapid population growth, agricultural intensification and climate change, Lorrie emphasized that we need to strive for three simple goals: 1) to allow water to seep into the ground to recharge aquifers, 2) to use only the water that the natural water system can easily replenish, and 3) to keep the water clean. To achieve these goals, we need to pursue excellence in wastewater management, promote efficient water use, protect groundwater sources, expand the Rural Water Quality Program which promotes best management practices in rural areas, and celebrate our successes.

Roberta Jamieson, elected Chief of the Six Nations of the Grand River Territory, emphasized the importance of water to the Six Nations people. It is considered the blood and soul of life. Today, the Six Nations people do not enjoy an expectation that they can draw quality water from the Grand River. Wells are contaminated, pipes are leaking and the current water treatment plant that draws Grand River water is overloaded. Boiled water advisories occur on a regular basis. Roberta stressed the need for collaborative action. The long-term vision of Six Nations is *"to work towards ensuring that the Grand River flows in centuries to come with the quality and majesty that we have become so used to..."*

Thomas Schmidt, Director of Water Services for the Regional Municipality of Waterloo, spoke to the emerging issues that municipalities face today. These include increasing concerns about water availability, complexity around government regulations and stringent enforcement, use of new technologies, infrastructure costs, the growing need to treat non-point and source contamination, biosolids application on land, and the accelerating pace of change. Thomas stressed that these issues are being



collectively studied and addressed by the Water Manager's Working Group.

Dr. Mary Jane Conboy, with the Ontario Federation of Agriculture, described emerging rural issues. Degraded water quality and contamination of rural wells, low precipitation and reduced water availability for irrigation, water-taking permits that exceed resource availability, well interference, and complex regulations and confusion in water testing requirements were cited as major issues. Mary Jane indicated that many programs and partnerships to deal with these issues such as the Environmental Farm Plans and Rural Water Quality Programs are quite effective but stressed that these programs need core funding on an on-going basis rather than on an ad hoc basis.

Theresa McClenaghan, Counsel for the Canadian Environmental Law Association, spoke about the importance of protecting our source water by taking a watershed approach. She emphasized

that "keeping contaminants out of drinking water *sources* is an efficient way of keeping them out of drinking water" and that a plan is required in order to achieve that goal. In Ontario, there is no overall provincial policy favouring source protection and the conservation authorities and municipalities are much too limited with the existing tools they have to use. Watershed Source Protection Plans should guide all local and provincial decisions for water-taking permits, land use development applications, farm plans (nutrient management strategies), and biosolids certificates of approval. Theresa stressed that without source protection, we are vulnerable. In a multiple-barrier system for providing safe drinking water, the selection and protection of reliable, high quality drinking water sources is the first barrier. The rest of the barriers, including treatment, distribution, and monitoring all rely on the first barrier. The road map for this approach was laid out by Justice O'Connor in his Part Two Report of the Walkerton Inquiry: A Strategy For Safe Drinking Water. Theresa concluded that the potential for tragedy is all-too-present if we limit our attention to the "pipes and pumps" end of our water system.

James Etienne, Director of Environmental Services, City of Guelph, spoke about the proactive water demand management approach that the City of Guelph adopted in 2002 to ensure that water was used efficiently during the summer drought. An Outside Water Use Program was applied to discourage no wasting of water for non-essential uses. Restrictions were imposed on a graduated basis according to the water conditions. The program included a communication strategy. Information about use restrictions and non-compliance penalties and the benefits of water use efficiency was provided to the public. Supportive branding to anchor and

provide cohesiveness to the communications strategy was initiated—*“Waterwise—Water Intelligence Serves Everyone”*. The Outside Water Use Program was built on the Ontario Water Response Plan and feedback that the City had received from its 2001 program. The 2002 program was successful in reducing peak consumption and will be assessed in order to improve next year’s program.

Marguerite Ceschi-Smith, Councillor with the City of Brantford, outlined the innovative planning approach taken to protect a rare perched fen in the northwest industrial area of the City. A process to balance economic development and environmental protection began with public input followed by the formation of a Gateway Environmental Committee composed of representatives from the public, the city and other agencies including the GRCA. Various planning tools were used to create eco-corridors, buffer zones and setbacks to separate development from sensitive areas. In addition, run-off must be treated on-site using a variety of techniques including cutting-edge technologies, additional landscaping and revegetation, spill control catchbasins, and state-of-the art stormwater management facilities to control both water quantity and quality. A Landowner’s Environmental Awareness Manual has been prepared to educate the new industries that develop in this area.

Eric Hodgins, Manager of Water Resources Protection for the Regional Municipality of Waterloo, talked about the impacts of road salt on the Region’s groundwater. Recent studies have shown that the application of road salt has resulted in elevated levels of chloride and sodium in the groundwater. A total of 55 tonnes of salt per year is applied to the extensive road network in the Region and it is estimated that 30-40% is making its way into the groundwater and eventu-

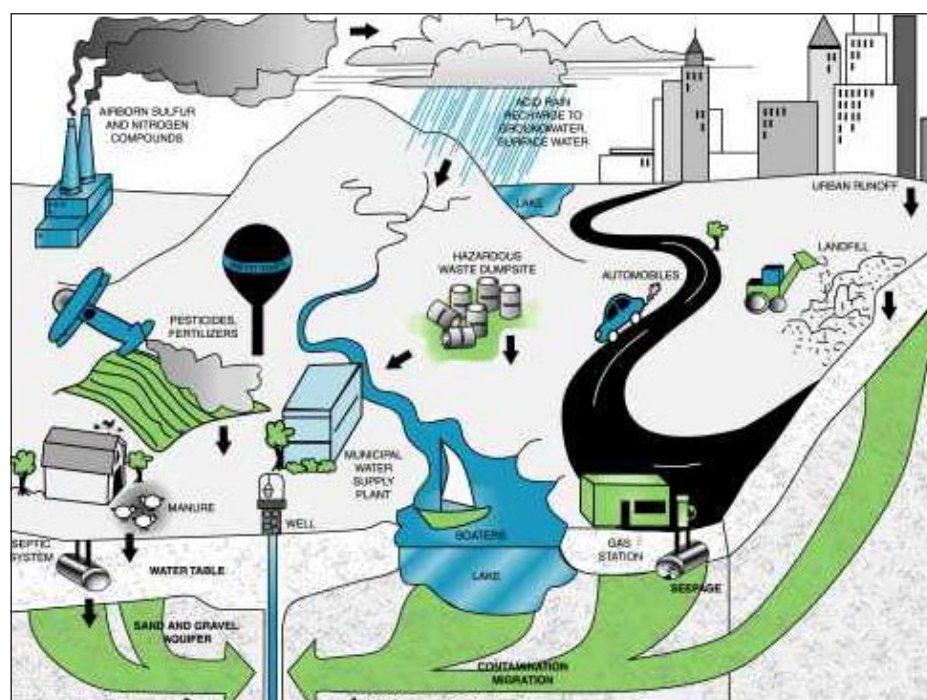
ally into the Region’s water sources. Since salt has been applied to roads for a number of decades, the impact of salt on our drinking water has not yet been fully realized. Each municipality within the Region, as well as the Ministry of Transportation, applies road salt according to different policies. The Region is committed to reducing its use of road salt and is collecting data regarding the magnitude and extent of salt applications by its own operators and is monitoring the impacts. In 2001/2002 road salt applications were reduced by all agencies by an average of 27%. Eric pointed out that there is a need for a comprehensive, consistent approach to further reduce the application of road salt across the Region in the future.

Arnold Silver, Vice President of Engineering from the Ontario Centre for Environmental Technology Advancement (OCETA), outlined the Business Water Quality Program sponsored by the Regional Municipality of Waterloo. The Business Water Quality Program (BWQP) provides financial and technical

assistance to businesses in the Region of Waterloo to implement Best Management Practices (BMPs) for water resource protection. The five-year program was officially launched in June 2001 and is being delivered by OCETA on behalf of the Region.

DANA WIX Filtration Products was the first company to graduate from the BWQP earlier this year. DANA WIX supplies components, modules and complete systems to the vehicle manufacturing market and produces 20 million oil and air filters annually. It is currently working towards an ISO 14001 certification. With the assistance of a grant from the Business Water Quality Program, DANA WIX embarked on implementing a number of pollution prevention projects including purchasing spill kits, spill response training, and capping and sealing floor drains near chemical storage areas. These actions significantly reduced the risk of a spill, thereby contributing to improved protection of the Region’s

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Some sources of groundwater contamination are shown on this graphic taken from the GRCA display at the 2nd Annual Water Forum.

WATER FORUM

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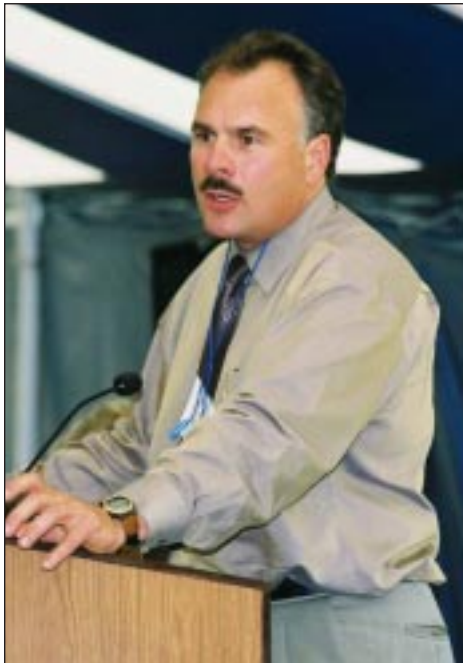
water resources. DANA WIX is only one of several companies who have taken advantage of the financial incentives offered by the Region to improve the protection of our water resources.

Alex La Belle, General Manager of the Paris Grand Golf Club, provided an account of the proactive restorative work undertaken along Gilbert Creek, which flows through the golf course. Concrete culverts were removed to provide continuous fish passage, a more diverse riparian habitat and wildlife corridor, a functional connection between the creek channel and its floodplain, and restoration of natural channel functions. Native plantings and innovative designs for creek crossings were used to as part of the restoration project. Barrier plantings and signage have been included to educate golfers and discourage them from entering ecologically sensitive areas. This work has improved stream water quality and improved aesthetics for the golf course.

Dr. Tony Smith, Assistant Chief Administrative Officer for the GRCA, spoke about some of the design-making tools and plans, which are being jointly developed around water management in the Grand River watershed. Several accomplishments have been realized with the assistance of the Water Manager's Working Group comprised of representatives from the municipalities, conservation authority, Six Nations, and provincial and federal agencies. These include the development of a Water Quality Simulation Model to predict the impact of future urban and rural growth, the improvement of a spills action response, the formation of the Grand River Low Water Response Team, and the hosting the annual Water Forum.

An integral part of the day included an exhibition of displays and posters

by businesses, agencies, educators, and community groups. Information about innovative techniques for water management, new data about the state of the watershed water resources, leading-edge research and development, and community activities and educational programs was presented. Participants were encouraged to peruse the exhibition and take advantage of the networking opportunities offered.



Gord Miller, Environmental Commissioner for Ontario, (*photo above*) provided a very insightful wrap-up for the day. With the depth of understanding we already have around the environment and the research and decision-making tools available, Gord noted, we have the knowledge and power to make choices which could result in a better society for the future. He cautioned that the cultural carrying capacity of the land has been reached and that everything we do from now on has the potential to compromise our existing quality of life and experience.

Gord was also concerned about the consequences of the rapid growth in population that many areas of the

watershed are experiencing today. Even if we effectively reduce the per capita water consumption, we will use more water. In Gord's words "we have to get a handle on growth or it will crush us". Gord suggested that one way to manage growth is to make decisions now on the final disposition of land as has been done on the Oak Ridges Moraine. He pointed out that this approach has been used effectively in Europe.

Another observation dealt with the Province's lack of leadership. Citing the example of this summer's drought, Gord questioned why government agencies did not declare Level 3 restrictions for water users when Level 3 conditions (the most extreme) were experienced in many areas of the Province. He stated that courage is needed to follow through on stated plans and standards. If actions cannot be carried out, then the standards should be modified.

Gord stressed that it is up to us all collectively to engage the provincial government in dialogue around water concerns. He encouraged participants to take an active advocacy role to influence politicians to effect change.

The event concluded with the First Nations Thanksgiving offered by Norman Jacobs who reminded the participants that clean water is essential to our health and well-being. We must continue to promote actions that protect and improve our water for future generations.

A special thank you is extended to the members of the organizing committee for putting together an exceptional program. The proceedings from the 2nd Annual Grand River Watershed Water Forum are posted on the GRCA's website at www.grandriver.ca

The next Annual Grand River Watershed Water Forum is planned for Friday, September 19, 2003. More information on this event will be available in the new year.

2002 Conservation Scholarship Awards

Since 1986, the Grand River Conservation Foundation has awarded annual university scholarships to deserving students. These \$1,500 awards are for students in their third year of conservation study in an Honours program at one of the three watershed universities of Waterloo, Guelph or Wilfrid Laurier. The 2002 winners are all students at the University of Waterloo.

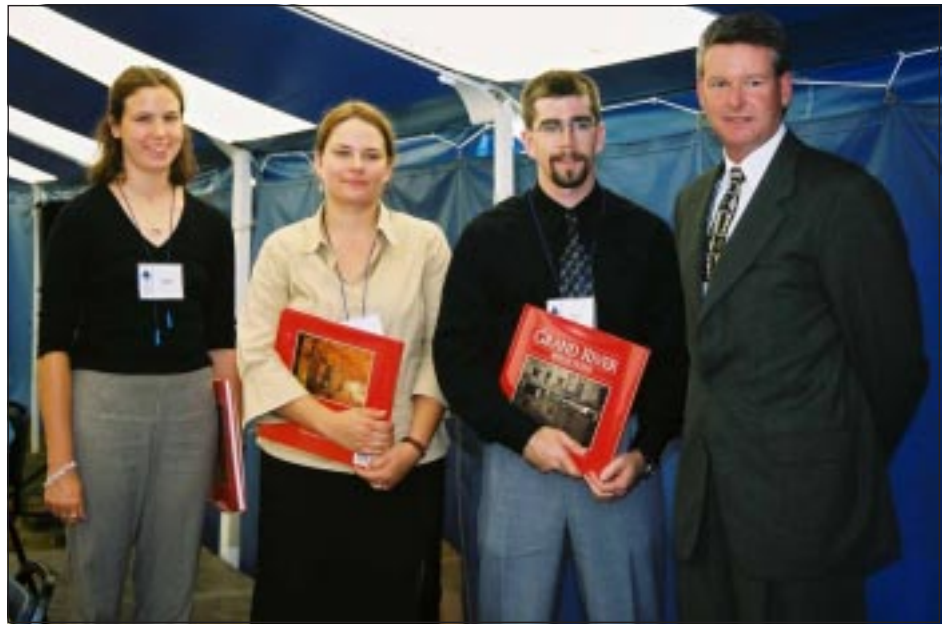
Jessica Deakin, a Geography student, was awarded the Marcel Pequegnat Scholarship, named in honour of a noted Kitchener resident and conservation pioneer. The Foundation's Robert Haworth Scholarship is named in honour of a popular Brantford resident, a dedicated conservationist, and one of the early directors of the former Grand Valley Conservation Authority. Stacey Vojtek is this year's winner, and is taking Environment and Resources Studies, Park Option.

The third award is the SC Johnson Environmental Scholarship which is provided through an annual donation from SC Johnson and Son Limited in Brantford. The winner this year is Lucas Neil, who is studying Chemistry.

Sustainability Manual

On September 26, 2002, the kick-off was held in Kitchener for a project to develop a resource tool addressing sustainability for non-profit groups in the Regional Municipality of Waterloo.

Sustainability is defined as "the degree to which a program or organization can mobilize resources from one or more sources consistently over time to respond effectively to local needs", and has become an increasing challenge. To address this concern a cross-section of organizations have collaborated to develop a resource guide on program sustainability for



At the 2nd Annual Water Forum on September 20th, Grand River Conservation Foundation President Tom Land (right), presented the Foundation's 2002 University Conservation Scholarships to Stacey Vojtek, Jessica Deakin and Lucas Neil.

non-profit groups. The guide will include practical suggestions for improving sustainability across the various sectors, and ideas about how governments, granting organizations, researchers and others can assist.

This project, funded by the Ontario Trillium Foundation, is being delivered by the Centre for Research and Education in Human Services (CREHS) based in Kitchener, and the Social Planning Council of Cambridge. An advisory committee, made up of social services, arts, and environmental organizations including the GRCA, is guiding the work.

The Sustainability Manual will be shaped by examples of local programs that are successful in creating sustainability. All non-profit groups in the arts, social, health, education, and environmental sectors are invited to participate and share their success stories and ideas.

If you have a story to share, please visit the CREHS website at www.crehs.on.ca for an electronic form guiding you through key questions about your experiences. For more information, please contact Andrew Taylor. Phone:

(519) 741-1318. Email: andrew@crehs.on.ca

Public input is also being sought for a logo design depicting the concept of sustainability in a simple and easy to reproduce manner. The winner of the design contest will receive a gift from Masulli's Deli in Cambridge. Submissions are due by November 29, 2002, to Wendy Adema, Social Planning Council of Cambridge and North Dumfries, 24 Queen's Square, Cambridge, Ontario N1S 1H6. Fax: (519) 621-6220. Email: wendy@socialplanningcouncil-cnd.org

Dump Trucks Are Rolling

Great news is in store for hikers and cyclists, as the final segment of the Elora Cataract Trailway is being resurfaced. The middle section of trail between Belwood to just east of Orton is being graded and top-dressed with stone dust, bringing the trail up to the standard of the sections from Elora to Fergus and Fergus to Lake Belwood.

Funding is provided by donations to the Grand River Conservation Founda-

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DUMP TRUCKS

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tion, and a generous grant from the Ontario Trillium Foundation. The resurfacing work will be completed by late autumn and will be complemented next spring with new signage and displays along the trail route, and a reprinting of the popular Elora Cataract Trailway brochure.

The Trailway is jointly managed by the Grand River and Credit Valley Conservation Authorities, in partnership with the Elora Cataract Trailway Association whose dedicated volunteers help make the trail possible.

A Glimpse of Fall

The following evocative poem was written by Bruce Graham of the GRCA Tree Nursery in Burford. Chestnut seedlings are grown at Burford to be replanted at several experimental farm sites in southern Ontario as part of a major restoration project.

Bruce is an active participant in the efforts to reintroduce the American Chestnut to our watershed landscape. The poem was first published in *The Bur*, a newsletter of the American Chestnut Foundation:

A Thought for Autumn

A stillness, the bark of a dog far away
Geese winging over the forest cover
A chipmunk disappears behind a
skeleton of an old chestnut stump
The chatter of a red squirrel dropping
burs to be opened later
A continuous spree from nature's
forest haven
The graceful white pines, the mighty
red oak blend in nicely with the
majestic American Chestnuts.
It's that time of year that's almost
upon us, that silence, the chill in the
air, that gust of wind that seems to
Sneak up behind us
It's almost time for the nut gatherers
to enter the forest.

THE GRAND STRATEGY CALENDAR

November 13-15, 2002, A.D. Latornell Conservation Symposium at the Nottawasaga Inn, Alliston. To register call (905) 895-0716, ext. 21. Email: info@conservation-ontario.on.ca For exhibit inquiries contact Kim Geddes, at (416) 864-9027 or Latornell@event-horizons.com

February 14, 2003, Heritage Day Workshop at the Guelph Youth Music Centre, Cardigan Street, Guelph. The theme for 2003 is "*Grand Renewal: Adaptive Reuse and the Cultural Landscape*". More information will be available in future editions of Grand Actions or contact Barbara Veale at (519) 621-2763. Email: bveale@grandriver.ca

NOW AVAILABLE

New Watershed Map

A new watershed map is now available that reflects recent changes to municipal boundaries. The map, published by the GRCA, includes municipalities, rivers, roads, GRCA conservation areas, nature centres, and Rail Trails in the Grand River watershed. It can be purchased from GRCA for \$5.75 (includes taxes) by contacting Lara Vujanic at (519) 621-2763, ext. 240.

DID YOU KNOW?

- Raindrops are much smaller than we think. They range from .0254 cm (1/100 inch) to .635 cm (1/4 inch) in diameter. The rules of nature don't allow raindrops to exceed about 1/4 inch because air friction breaks up raindrops when they're larger.
- Not including wind-driven rain, raindrops fall 3 and 8 metres per second in still air depending on the size of the drop. Air friction breaks up raindrops when they exceed just over 8 metres per second (18 miles per hour).

ABOUT THIS NEWSLETTER

This newsletter is produced as a communications tool by the Grand River Conservation Authority on behalf of the partners in *The Grand Strategy*.

This newsletter can be seen on the Internet at www.grandriver.ca

For information on *The Grand Strategy*

Contact Barbara Veale, GRCA, 400 Clyde Road, Box 729, Cambridge ON N1R 5W6.

Phone: (519) 621-2761 or 621-2763, ext. 274.

Fax: (519) 621-4844

Email: bveale@grandriver.ca

Website: www.grandriver.ca

For newsletter submissions

Contact the Editor, Liz Leedham, c/o Barbara Veale at the above address. Newsletter submissions must be made by the 15th of the month prior to publication, and may be subject to editorial change. Tax deductible donations and sponsorships toward the cost of producing this newsletter are always welcome.

Publications Mail

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