



## Clean Annapolis River Project

### Environmental Home Assessment Program

By Jamie McCamon



The Environmental Home Assessment Program offers participating home owners personalized information on properly maintaining their well water, septic system and oil tank. They also receive bottles to test their well water supply and a sample of an environmentally friendly cleaning product. Participants who complete the home assessment are eligible to receive a rebate of \$100.00 toward their next septic tank pump-out.

CARP is happy to say the EHAP program was a great success in 2012 with 60 home assessments completed.

### FACT

Over 400,000 Nova Scotians depend on private wells and septic systems.

### Clementsport Restoration Work Continues

By Lindsey Freeman

In September 2011, after 4 years of planning and preparation, CARP removed a derelict dam along the Moose River, in Clementsport, NS. Restoration and monitoring work on the river is still underway.

Ecological monitoring work was conducted prior to removing the dam, and will be continued into 2013. This information is being used to track changes in the river's ecology post dam removal. Over 900 trees and shrubs have been planted at the site in the past year as part of re-vegetation efforts. CARP staff, the Girl Guides of Canada, and school groups from AWEC and NSCC (COGS) have been instrumental in the re-vegetation work.

Other monitoring work has included fish population surveys, vegetation assessments, streambed analyses, aquatic invertebrate collection, and stream profiling. All of this information will be used to evaluate the restoration success of the dam removal, and will hopefully provide insight and knowledge that will assist with future barrier removal efforts.



### Meet Earl, a Wood Turtle With a Radio Transmitter

By Carolyn Hann



CARP biologist Carolyn Hann and her team of field assistants and volunteers have spent the summer months searching for wood turtles within the watershed. After weeks of combing through thick vegetation along many sites the team's efforts were rewarded when local volunteer, Earl Acker, spotted one. In honour of this volunteer the male turtle was named Earl. Earl the wood turtle was brought back to CARP's office and fitted with a radio transmitter and the following day was released at the site where he was found. Tracking will allow us to monitor his movements and get a sense of wood turtle activities, home ranges and preferred habitat types. CARP is also delivering an outreach program to help create awareness and provide education about the wood turtle.

Wood turtles are a species at risk: they are designated as vulnerable under the *NS Endangered Species Act* and threatened under the *Federal Species at Risk Act*. They are likely to become endangered if nothing is done to reverse the factors leading to their extinction. Common threats to wood turtles include agricultural mower blades, loss and degradation of habitat, human disturbances, predators, and road mortality.

## CARP's 2012/13 Projects

### Broken Brooks

By Kristen Wagner

Many people don't consider what happens when roads and streams intersect. Originally, culverts were installed to minimize the risk of roads flooding; however, over time their function has shifted to allowing watercourses to continue to flow underneath roadways and rail beds. With this shift, the importance of aquatic connectivity, and the impact it has on migrating fish species, like brook trout and Atlantic salmon, must be considered.

When issues arise with culverts, such as debris blockages, steep slopes, outflow drops or inadequate water levels, culverts can become barriers to fish passage, causing certain sections of stream habitat to become inaccessible to fish. Why is this an issue? Many fish species need to access a variety of habitats throughout their lives in order to successfully complete each stage of their life cycle. They migrate up and down through stream systems in search of suitable feeding and spawning habitat, as well as areas of summer and winter refuge. The inability to reach these important areas can be detrimental to the success of fish populations.

The *Broken Brooks* project assesses and restores aquatic connectivity in the Annapolis River watershed. The 2012 field season marked the 4<sup>th</sup> year of the project, and saw some modifications to the assessment protocol to improve data collection. Throughout July and August, field crews visited 81 sites within the Black River and

Nictaux River sub-watersheds, completing detailed assessments at all culverts found on fish-bearing streams. In total, 47 culverts received detailed assessments. Of these culverts, 37 culverts (79%) were classified as barrier culverts.

Additionally, CARP staff completed 12 remediations; 5 debris removals within the Black River sub-watershed, 6 debris removals within the Nictaux River sub-watershed, and the retrofitting of a rock weir installed in 2011 on Troop Brook.

With the information gathered from *Broken Brooks*, along with habitat suitability assessments and fish population surveys, CARP is developing a sub-watershed habitat management plan for Atlantic salmon in the Black River. In addition, CARP is collecting public knowledge of Atlantic salmon in the Annapolis River watershed, historically and currently which is another crucial piece to this puzzle.



### Canadian Aquatic Biomonitoring Network (CABIN)

By Levi Cliche



CABIN is a standardized national protocol that uses aquatic invertebrates as indicators of stream health. Families of invertebrates have varying tolerance to pollution, and will exist in different proportions depending on water and habitat quality. Invertebrates are randomly collected from a site by kicking the bottom and collecting them with a net held just downstream. The samples are then sorted, identified, and used to assess the health of a site. CARP maintains three long-term monitoring sites on the Annapolis River to supplement the River Guardians program, and has recently been regularly monitoring 3 sites on the Moose River as well.

### Rural H<sub>2</sub>O Water Guardians Program

By Jamie McCamon

Clean Annapolis River Project (CARP) is happy to present the [Rural H<sub>2</sub>O Water Guardian program](#) to rural home owners in Kings, Annapolis and Digby counties and the District of Yarmouth, Nova Scotia. This free program gives rural homeowners information on drinking water quality, septic systems, storm water management, riparian zone management, pollution prevention and sustainable use of water resources. Water quality and drinking water are key components to this program; homeowners will learn the importance of regular well water testing and will be given the knowledge and tools required to do their own water testing on a regular basis.

Jamie McCamon at CARP explains, "A lot of the residents in our area have been requesting this type of program to better understand how to manage their water." To be eligible, rural homeowners must have their own septic system and their own water supply such as a well or spring for drinking water. Participants will be eligible to access a variety of financial incentives to conduct well repairs, storm water remediation, and erosion protection of riparian zones with native plants.



# CARP's 2012/13 Projects

## Annapolis River Guardians By Lindsey Freeman



The 21<sup>st</sup> season of the Annapolis River Guardians program came to a close on October 21, 2012, after a successful year. CARP would like to thank all the River Guardians who participated in the sample collection this season.

The River Guardians program is a citizen-science based program that relies on volunteers to collect water quality data on river health. It is CARP's longest-running program and one of the most extensive volunteer-based monitoring programs in Eastern Canada.

Volunteers and staff monitor the river for various water quality parameters such as dissolved oxygen, E. coli, temperature, pH, turbidity and total dissolved solids. The data is then analyzed by CARP staff to determine water quality trends at sampled sites along the river's length. This year, in addition to the regular monitoring regimen conducted through the program, some new information was also collected. Temperature loggers were installed at some of the River Guardian sites to get a more complete picture of temperature fluctuations in the river across time and space.

### THANKS TO ALL OF THE 2012 RIVER GUARDIANS!

Mike Brobbel  
Wendy Courtice  
Adrian DeMontfort  
Claire Diggins  
Matthew Guy  
Daren Parks  
Tami Parks  
Vicky Parker  
Frank Thomas

The River Guardian program has also been instrumental in assisting CARP staff in prioritizing reaches of the river for further monitoring or action. For example, over the

past few years the River Guardians program has shown an increase in fecal contamination between two sampling sites in Aylesford. This prompted further field sampling in tributaries in the area this year, in an attempt to locate and identify potential causes for the observed increase in pollution between the two sites.

The data collected from this year's sampling season is currently being compiled and analyzed, and will be made available in a report on CARP's website in early 2013.

## Collaborative Clam Management Project (CCMP) By Lindsey Freeman and Monik Richard

Who doesn't enjoy a late-summer clam bake, or wading through knee-deep mud, rake in hand, to scavenge for elusive shellfish? Clamming activities have long been ingrained into the fabric of coastal life here in Nova Scotia. The Annapolis Basin in particular has historically been home to some of the most productive soft-shell clam beaches in Nova Scotia. But we're no longer just clamming around.

Clam populations in the Annapolis Basin have been on the decline since the 1970s, and the number of beach closures on the rise. This has made it increasingly more challenging for clam harvesters to eke out a living on the flats. Efforts have been made over the past decade by several groups to study and actively manage the clam flats. A unique partnership has been created between the local clam harvesting association (Clam Harvesting Area 2 Clammers Association (CHA2CA), Annapolis Digby Economic Development Agency, Clean Annapolis River Project, the Municipalities of Annapolis and Digby, as well as local, provincial and federal governments such as Environment Canada, Fisheries and Oceans Canada, and the Canadian Food Inspection Agency.

This multi-stakeholder partnership has been formed to develop a collaborative clam management project that will build on past efforts and future needs, with one unified aim to manage the soft-shell clam resources in the approved and conditionally approved clam beds, and increase water quality monitoring. The project is being funded by the Atlantic Canada Opportunities Agency, NS Economic Rural Development and Tourism, RBC Blue Water as well as the Municipalities of Digby and Annapolis.

As part of this project, CARP evaluated the value of the biomass at the Thorne's Cove beach, an area of interest to the CHA2CA for potential re-seeding. The beach was staked out, and a scientific sampling device was used from a boat at rising and falling tides to extract clams from the mud. These were then weighed, measured, and returned safe and sound back home. The clam biomass information obtained from this summer's work helped the CCMP partners to develop a multi-year collaborative management program.

The management plan developed by the CHA2CA will be available on CARP's website and includes rotational harvesting, seeding activities and is proposing a penny a pound levy on landed clams to help generate research in the basin for better clam management.



## Clean Annapolis River Projects 2012 Events

### CARP's Volunteer Recognition Banquet



Clean Annapolis River Project held it's 2nd Annual Volunteer Appreciation Banquet at the Annapolis Royal fire hall on Saturday, Nov. 24, 2012. The supper was prepared by Lottie Trimper. The food and service were outstanding. This year had a great turnout and everyone had fun at the photo booth. Thanks again to all of our volunteers.

### EARL ACKER Volunteer of the Year



Earl dedicated over 300 hours to CARP!

CARP Would like to thank all of our volunteers for their help in 2012/13! Great job everybody!

## CARP IS MOVING!

On May 1st CARP will be relocating our office to 314 St. George Street, Annapolis Royal. Please drop in to see our new office!

### Protected Areas Awareness By Carolyn Hann



The protected areas project was initiated in June 2012 and was developed to provide information to the people of the Annapolis River watershed about protected areas and the 12% by 2015 campaign initiated by Nova Scotia Environment. Our goal was to provide people with the information and to generate interest within the communities of the watershed, to support the protection of a land parcel that we can cherish and enjoy now and into the future. Fifteen presentations were given to different organizations, schools and members of the public reaching a total of 432 individuals. This presentation created interesting discussion and provided us with a lot of useful information, which we were able to use to highlight the public's interests. In total 92 protected areas surveys were filled out and returned, 32 letters were signed on behalf of community members, 35 letters were personally written and 181 signatures were collected to support the protection of the Nictaux River land parcel.

With the information gathered from the public we were able to draft a letter that was sent to the Minister of the Environment, Nova Scotia Environment and the MLA's of the counties within the watershed.

### SPECIAL THANKS TO OUR FUNDERS

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Environment Canada  
Gulf of Maine Council on the Marine Environment  
Human Resources and Skills Development Canada  
Irving Oil  
NSLC Adopt-a-Stream  
NS Economic Rural Development & Tourism  
NS Environment  
NS Transportation and Infrastructure Renewal  
Patagonia  
Province of Nova Scotia  
Sage Environmental Program  
Service Canada  
Shell Fueling Change  
TD Friends of the Environment  
RBC Blue Water Leadership  
CURA H<sub>2</sub>O

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