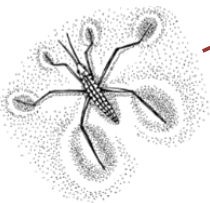




Photo: Tree planting at Champlain Elementary School



The

Waterstrider

News from CARP's frontline

Growing ecological health in the Annapolis River watershed

During the summer and fall of 2015 CARP was very excited to welcome Angelika Waldow to the team as project leader for the, "Growing Ecological Health in the Annapolis River Watershed" project. Angelika and her field team made great accomplishments with the project, exceeding project objectives in many regards.

The purpose of the project was to involve community members in tree planting activities that contribute to ecological objectives, including:

1. riparian habitat restoration;
2. the creation of shelterbelts in agricultural landscapes;
3. reforestation and diversification of tree species assemblages, and;
4. greening of urban landscapes within towns and villages.

Project activities included tree planting on 24 sites across the watershed, with 6000 seedlings, 200 willow stakes and 45 caliper trees planted.

The project provided great opportunity to engage with local schools and community organizations. Groups from St. Mary's Elementary School in Aylesford, Clark Rutherford Memorial School in Cornwallis, →

Champlain Elementary School in Granville Ferry, Bridgetown Regional High School in Bridgetown, the Middleton Regional High School 02 class, the Annapolis West Educational Center (AWEC) 02 class, the AWEC Envirothon team, the Annapolis Young Outdoors Women, and the Fundy YMCA Youth Zone were all involved in tree planting at sites at their schools or in their communities.

The positive reception and support from project partners, including the Municipality of the County of Annapolis, the Annapolis Basin Conference Center, the Town of Annapolis Royal, the Champlain Elementary School Natural Playground Committee, the various schools involved in planting, and private landowners, was key to the success of the project.

There is still a vast amount of land within the Annapolis River watershed that would benefit from similar restoration actions, in order to restore ecological health and address issues such as pollution from surface water run-off, erosion, and flood damage mitigation. CARP hopes to continue with the collaborative approach taken through this project to implement future projects that address these issues.

"The best time to plant a tree was 20 years ago. The second best time is now." -Chinese Proverb

Photos: Middleton 02 planting at Barteaux farms (left); students at St. Mary's Elementary (center); Tineke in action (right)



Clean Annapolis River Project's
Annapolis River Festival

Summer 2016

CARP is excited to announce that after the success of the inaugural Annapolis River Festival, the decision has been made to hold a second festival during summer 2016. The Annapolis River Festival is a major fundraising event that supports CARP's various projects and programs. Co-chairs Murray Freeman and Steve Campbell have graciously agreed to continue in their positions.

The Festival Committee will be looking for fresh faces to become involved in a variety of roles, from sub-committee leaders to on the ground volunteers at the event. Any interested volunteers are encouraged to get in contact through the CARP office.

The Dragon Boats races were a highlight of the Festival in 2015, and this year the Committee is hoping to expand on these, to provide more heats from each team, as well as a semi-final and final race.

More information is soon to follow. For updates you can visit the Festival webpage, www.annapolisriver.ca/riverfest, or find the Festival's Facebook page by searching "CARP's Annapolis River Festival".

Restoring aquatic connectivity for native fish

Since 2010 CARP has received support to examine aquatic connectivity through the NSLC Adopt-A-Stream program, a community-based watershed stewardship program offered by the Nova Scotia Salmon Association. Since then, over 400 detailed watercourse crossing assessments have been conducted, identifying a large number of barriers and partial barriers to fish migration. In 2015 CARP focused on the implementation of restoration actions that resulted from these detailed assessments. With financial support from the Adopt-A-Stream Program as well as Fisheries and Oceans Canada's Recreational Fisheries Conservation Partnership Program, 2015 was a very full field season for the habitat restoration team.

Fifteen restorations were completed on 11 watercourses within the Annapolis watershed, restoring access to 25 km of upstream habitat. These watercourses included: East Moose River, Nictaux River, Round Hill River, Grand Lake Flowage, Balcom Brook, Black River, Morton Brook, Neilys Brook, Rockland Brook, Croscup Brook, and Button Brook.

Of these 15 restorations, 5 debris removals were completed and 10 tailwater control structures were constructed. Fish chutes and baffles were introduced into CARP's restoration arsenal this year. Seven custom-made galvanized steel chutes were installed in conjunction with rock weirs to address outflow drops up to and greater than 40cm.

Photos: Jamie, Jeff & Devon constructing a weir (left); Will & Jamie working on baffle installation (right).

CARP has also been engaged in the development of sub-watershed management plans for priority tributary systems within the watershed since 2012; these plans outline proposed actions that can be implemented to enhance fish habitat conditions and improve fish populations for species of conservation concern, such as salmonids (eg. brook trout and Atlantic salmon).

This field season several actions from the Nictaux River sub-watershed management plan were completed, thanks in part to additional financial support from the Sage Environmental Fund. East Coast Aquatics was contracted to complete excavator work, reconstructing and bolstering six rock weirs. Three deflector weirs and a double digger log were installed using hand tools by CARP staff and volunteers downstream of the rock weirs.

For individuals interested in additional information about the restoration methods used for this project, NSLC Adopt-A-Stream has a series of Fish Habitat Restoration Methods Concept Specification Fact Sheets available on their website: <http://adoptastream.ca/?q=content/habitat-restoration-methods>.

The restoration actions completed this season are a major accomplishment, and CARP would like to recognize the leadership of Jamie McCamon, support from field staff Jeff Medcraft, Shawna Hannam, Jon Gray, Randy Fredericks, Emma Dondale, Opal Harlow and Logan Bell, Adopt-A-Stream staff Will Daniels, and volunteer support from Christina Spencer, Devon Medcraft, Alex, Dave Oakie, Jaya Fahey, Seth Omer, Craig Fancy and Nick Durling.



Winter birding workshop, just in time for Christmas Bird count season

On Sunday December 6, Clean Annapolis River Project will be hosting a Winter Birding Workshop in Annapolis Royal. Dr. Shawn Craik of Université Saint Anne will be leading the workshop, with support from some of his ornithology students. The workshop is free, and all ages and experience levels are welcome.

The workshop will begin with a 1 hour indoor session, with discussion on topics such as the basics of birding and equipment choice. Coffee, tea and a light breakfast will be included for participants. This will be followed by a field session, at sites in Annapolis Royal within walking distance.

CARP is hoping that by providing training opportunities, new individuals will develop the experience and confidence they require to begin participating in citizen science programs, such as the upcoming Christmas Bird Count. This opportunity has been made possible thanks to support from the Nova Scotia Positive Aging Fund.

Citizen science programs allow for data collection on a scale that is otherwise unachievable, create opportunities for individuals to contribute to environmental conservation efforts, and in many cases provide interesting outdoor recreational opportunities that contribute to a healthy lifestyle.



Interested participants are asked to pre-register if possible. Anyone registering prior to December 1 will be entered into a draw to win one of two Sibley's folding guides. The workshop will begin at 8:30 AM at Annapolis Royal Regional Academy and conclude at 11:30 AM. Field guides will be provided, but individuals are encouraged to bring their personal field guides and binoculars if possible.

Workshop: Sunday December 6

Annapolis Royal Christmas Bird Count: Sunday January 3

Other local Christmas Bird Count dates available at <http://www.nsbirdsociety.ca/index.php/volunteer/christmas-bird-counts>

Citizen Science Resources

Throughout 2015 CARP has been working within communities across the watershed to promote participation in citizen science programs by seniors, thanks to funding through the Nova Scotia Department of Seniors' Positive Aging Fund.

Citizen science environmental monitoring programs are designed to address data gaps about environmental conditions at the local level, while also contributing to national-level data collection efforts. These programs provide opportunity for life-long learning and have co-benefits such as promoting outdoor activity and community engagement, contributing to a healthy lifestyle.

As a result of this work, CARP has developed a resources sheet outlining citizen science programs relevant to residents of the Annapolis River watershed. These programs include the more well-known Christmas Bird Count and Migratory Bird Counts, to new programs such as Bud Worm Tracker, where participants use pheromone traps to monitor the presence of spruce budworm.

While CARP's recent project focused on engaging seniors, there are citizen science opportunities for all ages and ability levels. For individuals with mobility issues, activities such as feed-watches or monarch butterfly monitoring may be more appropriate... →

Citizen Science Resources

← ...choices. For those who like to spend time bushwhacking, wood turtle or Blanding's turtle surveys may be more of a draw.

This resource list is a living document, and ideas for new program additions are always welcome. For a copy, check out the publications page on the CARP website, or contact katiemclean@annapolisriver.ca



Winter Birding Workshop

Sunday December 6

8:30-11:30

ARRA, 590 St. George St., Annapolis Royal

Free workshop

Tea/coffee & baked goods included for breakfast

Everyone welcome



Striped bass- perspective from volunteer Jacques Baker

Hi, my name is Jacques Baker. This past fall I volunteered for the Clean Annapolis River Project, located in the Annapolis Valley in Nova Scotia. I volunteered with a project to monitor the population of striped bass in the Annapolis River watershed. The first task I did with the project was known as beach seining.

While we were beach seining we would drag a small purse seine net in waist deep water. While it was being dragged the net would catch a small sample of the various fish species in the river including Atlantic silversides, fourspine sticklebacks, and hopefully any juvenile striped bass in the river.

The reason we did the beach seining was to see if striped bass are still reproducing in the Annapolis River or its tributaries. Sadly no juvenile striped bass were recovered during our study.

Striped bass, known by scientists as *Morone saxatilis*, is a large predatory fish that feeds on prey fish such as juvenile herring and tomcod.

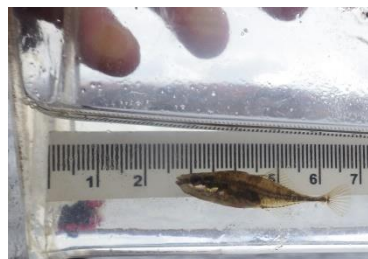
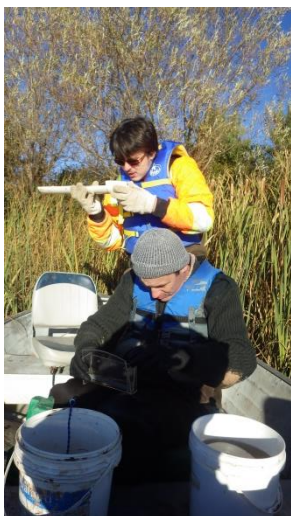
A healthy striped bass population is an indicator of a healthy river ecosystem because striped bass need good quality spawning habitat as well as large numbers of small fish on which to feed and grow.

The main challenges facing striped bass living in the Bay of Fundy are the blocking of spawning rivers with dams such as the Annapolis River causeway as well as practices that affect water quality and pH. level such as farm runoff and allowing livestock to have access to stream banks.

It is sad to think that we once not only had a spawning population of striped bass in the Annapolis River, but also a world class recreational fishery that drew in hundreds of tourist each year.

Perhaps if we learn from our mistakes we can prevent the spawning striped bass population in the Shubenacadie River from meeting a similar fate to our striped bass and restore striped bass in the Annapolis River.

Photos: Jacques and Jon in the field (left); fourspine stickleback (top right); mummichog (bottom right)



Striped bass resources

Striped Bass Association: <http://stripedbassassociation.ca/>

Striped Bass research Team:

<http://stripedbass.ca/stripedambassador.html>

24th season of water quality monitoring on the Annapolis River

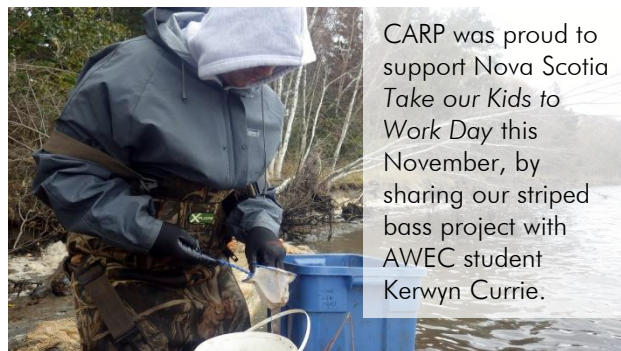
The 2015 River Guardians monitoring season has now wrapped up. In the upcoming weeks, CARP staff will be focusing on data entry and analysis, in order to produce this year's "Annapolis Watershed Report Card".

River Guardians is CARP's longest running program, now in its 24th season. Through this program CARP is in the unique position of having access to long-term data about water quality in the Annapolis River watershed.

Continuing to secure funds to support the program is often a major challenge; however, CARP does not want to see any gaps in data collection. This year's program was possible in part thanks to financial assistance from the TD Friends of the Environment Foundation, who provided funding to cover the costs of E. coli sample analysis. E. coli, a fecal coliform bacteria, is monitored as an indicator of pollution such as animal waste or human sewage.

The program would also not be possible without the support of volunteer River Guardians: Wendy Courtice, Kelly Whalen, Blair Hayden, Steve Forbes, Claire Diggins, Ron Kielback, Vicky Parker, Tami Parks, and Codi Cole.

Final results from the 2015 River Guardians season will be posted on both the CARP website and on the new reporting page: <http://riverguardians.weebly.com>



CARP was proud to support Nova Scotia Take our Kids to Work Day this November, by sharing our striped bass project with AVEC student Kerwyn Currie.

Stay in the Loop:



Thank you to our current project funders



Environment
Canada

Environnement
Canada



This project was undertaken with the financial support of the Government of Canada.
Ce projet a été réalisé avec l'appui financier du gouvernement du Canada.



TD Friends of the
Environment
Foundation