Clean Annapolis River Project

Fall 2016

Youth Leading Environmental Change students on a wood turtle visual survey of the Fales River

The Waterstrider

News from CARP's frontline

Rock weirs, fish chutes, sand-wanding and much, much more!

Brook trout and Atlantic salmon are iconic species in Nova Scotia, prized by recreational anglers, and admired by nature lovers for their inherent beauty. While these species have an important place in the history of Nova Scotia, at one point in time supporting a thriving guiding industry, changes to their habitat have resulted in declining populations. The Atlantic salmon, Southern Upland population, has been assessed as endangered by COSEWIC, meaning it faces imminent risk of extirpation or extinction. The Brook trout, while not designated as *at risk*, face many of the same threats as Atlantic salmon in their freshwater habitat.

There is no single reason for the decline of these species, but habitat degradation and loss of access to habitat are two critical factors. Our Fish Habitat Restoration program focuses on addressing these issues, through a variety of restoration and enhancement activities.

Continued on page 2…

(continued from page 1) Our Fish Habitat Team, led by project leader Amber Stoffer, is proud to have restored access to 16.27 km of upstream habitat during the 2016 field season. This field season also included the use of a new technique, sand wanding, which in its simplest sense involves vacuuming excess sediment deposits from areas that would otherwise provide high quality spawning habitat.

Culverts are often the culprits in blocking access to upstream habitat. The Annapolis supports a variety of migratory fish, such as Atlantic salmon, sea-run brook trout, American eel, and American shad, which require access between habitat types in order to carry out essential activities such as feeding and spawning. This year's actions included 10 culvert restorations, in order to restore upstream access. These restorations involved building and installing 10 rock weirs, 4 low-flow barriers, 9 pairs of baffles, and 2 fish chutes. Additionally, 4 culverts were cleared of accumulated debris.

Through the development of subwatershed management plans, we have been able to identify and prioritize strategic actions that will contribute to the restoration of fish habitat. Subwatersheds are smaller units of the roughly 2000 square kilometre Annapolis watershed, delineated around major tributaries of the system. For the past three years, the Nictaux River subwatershed has been a priority area for restoration actions.

1. Hailey, Jason and Simon assist with instream restoration; 2. Randy completing pre-restoration surveying; 3. Jeff and Jeremey sand-wanding

Increasing rates of sedimentation, caused by activities such as deforestation and devegetation, can result in the accumulation fine sediment in river bottoms, such as the Nictaux. Salmon and trout spawn in areas with gravel and cobble bottom, building a nest called a redd. Female fish use their tails to fan out a small area of gravel in the river bottom. Several depressions will be formed in the gravel, forming pockets where eggs are deposited. Excess deposits of fine sediments can smother eggs, as well as other benthic organisms that fish utilize as a food source.

A new technique developed to address this problem is *sand wanding*, which allows for selective removal of fine sediments from the surface and subsurface of gravel and cobble beds. Working in collaboration with the NSLC Adopt-a-Stream program, the team completed sand wanding on 2.38 square kilometers of the Nictaux River system, in areas assessed as providing otherwise high quality spawning habitat.

The Moose River is another priority subwatershed that we have been focusing on. Several data loggers were placed in the Moose River to collect information about water temperature, which can have serious implications for cold water fish, such as trout and salmon. In waters of 20 degrees Celsius or warmer, fish become stressed, which has been shown to negatively impact growth and reproduction. Fish will seek out cold water refuges as water climbs to stressful and potentially lethal temperatures, one of the reasons that removing barriers to migration is so important. In past years, CARP has received reports of fish kills from residents who live along the Moose River. Lethal water temperatures and lack of access to cold water refugia are one of the suspected reasons for these kills, and the new data loggers will allow us to identify whether summer temperatures are exceeding the threshold that our trout and salmon can withstand, and develop a plan accordingly.

With subwatershed management plans in the works for the South Annapolis and Round Hill Rivers, there is no shortage of future work for CARP's Fish Habitat Restoration team. The organization was fortunate to receive funding to support restoration work in 2016 from the Nova Scotia Salmon Association's NSLC Adopt-A-Stream program and the Government of Canada's Habitat Stewardship Program.

CARP's Youth Leaders share their wood turtle experiences

In 2016 CARP launched the Youth Leading Environmental Change Program. The students we have worked with are absolutely inspiring. In September, three of our students, Sophie Bouchard-Todd, Joe Cooper and Sebastian Conyers, helped present to a group of community members in Lawrencetown, with the goal of recruiting new participants for our land stewardship program. Here is a bit of what they had to say:

Sebastian Conyers:

Sebastian is a home-schooled student In grade 7 from the Annapolis Royal Area

I am a member of CARP's Youth Leading Environmental Change Program. This spring I helped to track wood turtles. When we found a wood turtle, we would weigh it, then measure it and check their age and sex, along with their general health. Male wood turtles have a concave bottom shell called a plastron and the females have a flatter plastron. Wood turtles can live between 20-40 years but do not become sexually mature till about 15 years old. Many wood turtles don't live this long due to many risks. I learned that wood turtles are a species at risk partly because of pollution, farming practises and general invasion of their habitat by humans. I also observed a female wood turtle looking for a good nesting spot. She was very fussy and in the end did not lay any eggs that night. I was surprised at how close their territory was to other houses, yet we could still find them but with a lot of help from our volunteers and radio telemetry. We are very lucky to have such amazing animals in our backyard. They help to remind us of the importance of keeping our communities clean and healthy for all of us.

Joe Cooper

Joe is a grade 9 student at Annapolis West Education Center, Annapolis Royal

My name is Joe Cooper. I am from Annapolis Royal and have been participating in the Youth Leading Environmental Change program since May.

We have worked on a few different projects this summer, including clam stock assessment, seining at the causeway in Annapolis, planting in community gardens and some work to restore fish habitat. But, the project we are here to talk about is wood turtle tracking and monitoring.

The type of habitat that wood turtles like is the areas around small to medium sized rivers that don't have very fast moving water. Therefore, we know that there is a small population of wood turtles around [Lawrencetown]. Over the summer, what we did was wade through the rivers and streams to find "new" unidentified turtles. We also used radio telemetry to locate turtles that we already found. Once we located them, we measured and recorded several things about the turtles, including weight, shell height and width as well as weather conditions and what the turtles were doing when we found them.

I feel this work is important because the species is threatened and it would be great to do everything we can to help it. I have enjoyed working with Katie and CARP because it was an interesting way to learn about different ways to protect nature. I also enjoy being outside and learning the different techniques scientists use to study the natural world.

Member Discount Card

CARP has begun partnering with businesses across the watershed in order to develop an exciting new membership package. These partnering businesses offer discounts on their products and services. Check our website regularly to look for new business partners and discounts.

- **Annapolis Natural Foods, Annapolis Royal: 10% off entire store**
- **Big Scoop Family Restaurant, Middleton: 10% off all lunch and suppers**
- **D'Aubin Family Meats, Bridgetown: 10% off all freezer items**
- **Rona Home & Garden, Kingston & Middleton: 15% off all paint and paint supplies**

Proud Sponsor & Partnering Business Member

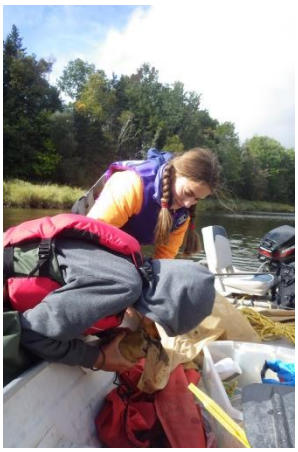
CLEAN ANNAPOLIS RIVER PROJECT

Crowd-source funding opportunities to continue Youth Leading Environmental Change

In 2016 CARP launched the Youth Leading Environmental Change program, and was thrilled to reach capacity, with 30 students enrolled in the program. We were amazed by the students who joined us; they were curious, enthusiastic and incredibly insightful. Students were able to participate in activities such as wood turtle monitoring, fish habitat restoration, tree planting, pollinator gardening, sturgeon egg sampling, and clam stock assessments.

We have met many new students who are interested in participating in a program like this, and hope that we can run the Youth Leading Environmental Change program in 2017.

CARP is looking to crowd-source funding to help support the program and we need your help!



Left. Sebastian and Mairead check for sturgeon eggs; Right. Sebastian and Luke assist with a clam stock assessment

Small Change Fund, Aveda Atlantic Water Campaign

Currently, CARP is part of the Small Change Fund's Aveda Atlantic Water Campaign. Through this program, donations to CARP are matched 2:1 through the Small Change Fund. If CARP receives the most individuals donations, regardless of value, we can win an additional $1500 for the project. With only 5 other projects in contention, it is a feasible goal. We are hoping that community members will consider a nominal donation, to help us achieve the bonus.

Aviva Community Fund

From October 11-28 the public will be able to vote for Youth leading Environmental Change through the Aviva Community Fund. The Competition has been streamlined this year, so that voters can place all of their votes at one time, and there will only be one round of voting. If CARP makes it as a finalists, our project will be assessed by a panel of judges. This competition could earn us $25,000 for the program!

AVEDA ATLANTIC WATER FUND

DONATE HERE: smallchangefund.org

AVIVA Insurance | Aviva Community Fund Supporting what's important to you www.AvivaCommunityFund.org

VOTE HERE: avivacommunityfund.org

Edible Tree Update

Thanks to a grant through Tree Canada's Edible Trees Program, supported by Loblaws Companies Ltd., Silk , and Telus, CARP has been working with several community groups to plant a variety of fruit trees and bushes.

With the help of our youth leadership students, we planted 8 new trees at the Meadows Adult Resource Center, creating a small orchard outside of their living space. At the Cornwallis Community Garden we were able to add a variety of new things, including apple, nectarine, peach and cherry trees, plus grapes, gooseberries, currants, and blueberries.

We were also able to provide a few new apple trees to the Annapolis Royal Community Garden, and during the week of October 11 will be working with students at Clark Rutherford Memorial School to plant apple and pear trees.

Rural H2O Program extended to support home owners keep water safe, and conserve freshwater resources

Many residents of southwest Nova Scotia are all too aware that this summer has been the driest in years. In fact, it is the driest summer on record, since Environment Canada began keeping rainfall records in 1870. This has had major consequences for many residents, particularly rural residents who depend on wells for their water supply.

In September 2016 it was reported that 1000 families in southwest Nova Scotia were without water, and it is likely that the true number was even higher than that. Unfortunately, as a result of climate change, these drought periods could become the norm.

Truckloads of bottled water and showers in the local high-school locker room are not a long-term solution to this issue. Nova Scotians need to consider how our water-use practices impact water supply, and identify water conservation strategies that can be used to reduce household water use.
We will be implementing an extension to the Rural H2O program through the Fall and Winter, which will include a series of workshops that discusses water conservation options for rural homeowners, among other topics.

The full scope of the project includes engaging rural homeowners in outreach and education leading to the adoption of practices that protect the quality and quantity of drinking water sources essential to the health of rural communities

Bluenose Coastal Action Foundation will be partnering with CARP to deliver the project, so that we can reach residents across Kings, Annapolis Digby, Yarmouth, Shelburne, Lunenberg and Queens Counties.

Six workshops are being planned for October and November 2016. Resource packages will be developed for the public, covering the topics of: (1) drinking water quality issues, testing, and treatment; (2) source water protection measures for rural residential properties; (3) water conservation measures for rural home owners will also be available.

Funding for a limited number of home-assessments is also available through the program. Home assessments will involve home-visits to identify household practices that pose risk to drinking water sources (sewage disposal, home heating fuel storage, storage and disposal of household chemicals, well maintenance etc.), and identify measures to mitigate associated risks; household practices related to water use (laundry practices, plumbing fixture flow rates, leaking fixtures, lawn/garden irrigation, etc.), and identify water conservation measures for the household. In the case that water quality testing is recommended, a limited number of rebates for up to $100 for lab costs are available through the program.

If you are interested in receiving information about workshops, home-assessments, and resource packages, contact our Rural H20 Project Leader to be added to the mailing list:
katiemclean@annapolisriver.ca

Tickets are now on sale for our Sustainable Future fundraising dinner. This event is possible thanks to the Falcourt Inn and Perfect Pear Restaurant, who will be hosting the event, and Canaqua Seafood Ltd., who have donated their sustainably farmed Atlantic salmon.

Community action in our neighbouring watershed (submitted by Jennifer West)

The Jijuktu'kwejk (pronounced ji-ji-WUK-tuk) Watershed Alliance is a partnership of citizens and communities from Berwick to Wolfville in Kings County Nova Scotia, with the common vision of a healthy and sustainable natural environment.

Note about the name: Jijuktu'kwejk has been used to refer to the river which runs from Berwick to Wolfville Nova Scotia. It has been known historically as the Cornwallis, the Grand Habitant, and by other names as well. The name Jijuktu'kwejk has been used for many hundreds of years but the First Nations people in this area. Restoring the quality of this river starts with restoring its name, from a time when it was cared for and respected by local residents.

Formed from conversations between friends who wanted to see the River be a source of pride for our communities, we launched the organization in early 2016 over drinks! Now we are working to get this organization on its feet by pooling our combined knowledge, skills and experiences to make the Jijuktu'kwejk River a cleaner, safer, more beautiful river. We hope to guide the organization to become a community-supported non-profit, with leadership and representation from across the watershed and from indigenous communities.

Jijuktu'kwejk Watershed Alliance's Vision

A swimmable, drinkable and fishable Jijuktu'kwejk River.

The Jijuktu'kwejk as it passes Greenwich on its way to the Minas Basin.

Objectives

To move toward this vision, the association will achieve the following objectives:
Improve watershed health
Protect life and minimize property damage from flooding and erosion
Connect people with the river through outdoor experiences
Maintain an organization with a focus on teamwork, development, engagement and positive change

NEXT MEETING: Tuesday, October 18, at the Berwick & District Lions Club (in the Kings Mutual Center, Berwick NS) 225 Veterans Drive, Berwick, NS.

AWESOME news

Thanks, AWESOME Annapolis Trustrees for voting for the River Guardians program at your October meeting. We now have $1000 to help keep our 24 year data set intact.

Stay Connected:

www.annapolisriver.ca

CleanAnnapolisRiverProject

@CARPAnnapolis

Thank you to our current project funders and supporters

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.