



Small Fish, Big Impact

Article published by the PEI Government, Division of Environment, Energy and Climate Action



It may look like any other culvert, but this particular culvert on the Suffolk Road has a big impact on the health of the river system in the area.

Many locals will recall smelt passing at Tim's Creek decades ago, but until recently, the smelt avoided this particular stream. That's because the perched culvert was too big of a jump for the small fish to pass through.

Paul Strain, with the provincial department of Transportation and Infrastructure, had a solution for that problem, and he worked with the Winter River-Tracadie Bay Watershed Association and the federal Department of Fisheries and Oceans to make it happen.

"The key was elevation. Fish don't do well with steep jumps and drops, and in the case of a perched culvert, they can't make it through at all."

The solution was an over-embedded culvert (or stream simulation), an approach that Fisheries and Oceans Canada has been advocating for since the recent modernization of the federal Fisheries Act.

This type of culvert spans the entire creek and gets embedded into the earth so that a natural stream bottom can be built inside, leaving the fish free to travel through without obstruction.

It was the first culvert of its type in the province, and it worked, restoring fish passage to this part of the Winter River for the first time in 50 years.

"For years we have been hearing from recreational fishers that the fish population has been decreasing in our watershed so we knew we had to do something to help," said Raena Parent of the Winter River – Tracadie Bay Watershed Association. "When the opportunity arose, we were more than happy to work with the Department of Transportation and Infrastructure to make this project happen."

Small Fish, Big Impact *(continued)*

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It's not only about installing new equipment. The slope had to be perfectly tailored to suit the fish, down to the centimeter. This involved some very precise digging during the installation process.

"I'm sure the installers were a bit skeptical about the minor adjustments that were needed, but it was crucial to get it just right," Strain said. "Sure enough when we visited during smelt migration, there they were, passing through the new culvert."

When it comes to watershed management, watershed groups look at everything from a systems standpoint.

"A perched culvert can greatly impede fish passage, which impacts fish populations and the ecosystems they are a part of, which then impacts peoples' ability to recreationally fish," Raena added.

Why are smelts a big deal? Because these little fish are a sign the rest of the stream is healthy.

"If one part of the system isn't working, you can tell something is wrong from far down the line, so the key is figuring out where to intervene to make the most positive impact."

Rosie MacFarlane, the provincial freshwater fisheries biologist, says that smelts are an important food source for many species of wildlife.

"The adults are a favourite seasonal food for many birds and mammals and the eggs support both invertebrates and fish." If the smelts can't make it upstream, it can impact other species.



Work continues to restore fish passage

"Some of our larger, stronger fish like brook trout and Atlantic salmon can make a tougher journey, but weaker fish like American smelt, which come into freshwater in spring to lay their eggs, cannot."

Many kilometres of historic spawning habitat for smelts are inaccessible, so work continues to restore fish passage.

This year, Winter River-Tracadie Bay Watershed Association fixed another stream in their area, this time at MacAulay's Creek on the Donaldston Road. They picked this tributary to Tracadie Bay in hopes of restoring fish passage for species like smelt, gasperaux and brook trout.

Raena said, "We're already seeing such amazing results from these culvert replacements. This spring we saw so many smelt eggs at the Tim's Creek culvert, and within only the first few days of the MacAulay's Creek culvert being replaced, a watershed resident sent me a picture of a huge brook trout in the outlet pool."

The Winter River-Tracadie Bay watershed covers an area of 14,117 hectares. As part of their Watershed Management Plan that was created to match the vision of local watershed residents, this organization aims to protect and enhance freshwater ecosystems, and enhance recreational opportunities and promote active living.

The original story can be found here: <https://www.princeedwardisland.ca/en/news/small-fish-big-impact>

A Word From our Board Chair

WRTBWA Board of Directors are committed to the goals outlined in our Watershed Management Plan that aim to protect and enhance the health and aesthetic qualities of the Winter River-Tracadie Bay watershed area. We are extremely grateful for the dedication of our board members, staff, volunteers, and other supporters that make our work so successful.

Sincerely,

Dwayne McNeill

If you would like to help us shape the future, join our Board of Directors

To inquire: email info@WinterTracadie.ca or call 902-439-5512

Watershed Management Plan: 2022-23 Fiscal Year Scorecard

	LAND	WETLANDS/RIVERS	WATER QUANTITY	COMMUNITY
Objectives	Improve ❖ Buffer zones ❖ Forest management > Planting, patch cuts, thinning ❖ Shale/storage pit management ❖ Watershed health indicators > Soil health testing ❖ Wildlife habitat > Brush piles Reduce ❖ Soil erosion (roads & farms) > Berm/terrace project ❖ Nutrient loading	Improve/protect ❖ Surface water quality > Community Aquatic Biomonitoring Network (CABIN), Rapid Geomorphic Assessments (RGA) data for planning > Brush mats, blockage removal ❖ Groundwater quality ❖ Bay, estuary & freshwater ecosystems ❖ Habitat connectivity > Replace/repair culverts	Reduce ❖ Water extraction > Increase water conservation > Track Charlottetown pumping data Increase ❖ Public policy influence > Gov of PEI, City of Charlottetown ❖ Groundwater infiltration > Tree planting, rain gardens	❖ Increase watershed knowledge > Youth field trips > Social media posts, newsletters, etc. ❖ Outdoor activities that promote watershed > Lady's slipper guided tour > Creating walking trail at WRTBWA owned land
	Strategies			

Actions	Metric & Goal		Done	Metric & Goal		Done	Metric & Goal		Done	Metric & Goal		Done
	Trees planted	3,500	3233	Brush mats built	10	12	Meetings with Government	2	1	Events hosted	1	3
Brush piles	10	21	River enhanced (km)	5	7.2	Sites monitored	14	14	Media articles	2	4	
Total area improved (ha)	25	26	Culverts fixed	2	1	Charlottetown Water Extraction vs PEI Gov policy Using Joose recommendations. % by wellfield (100% meets policy)	M: 90	M: 78	Social media posts	50	51	
			Waste collected (kg)	500	960		S: 60	S: 19	Volunteers	15	99	
						U: 100	U: 106	Youth involved	25	68		
						B: 100	B: 23					

Notes: Last updated: 2023-04-18 | Formatted for printing on LEGAL sized paper | Full management plan available online at <http://wintertracadie.ca/documents/wmp-2/>
 Legend: Goal achieved (green), Goal not achieved (red), Updated info (yellow), Need data (blue) | Ongoing COVID-19 pandemic restrictions...

Staff of 2022-23

Field Crew: Jessica D., Patrick G., Liam J., Chris L., Connor M., Gabrielle M., Reid M., Colin P. & Sydney S.

Intern: Charlotte M.

Supervisors: Lyndsay M. & Raena P.

Watershed Coordinator: Sarah W.

Staff of 2023-24

Field Crew: Jessica D., Liam J., Will I., Cole M., Reid M.

Assistant Coordinator: Lyndsay M.

Watershed Coordinator: Raena P.



Upcoming Event

Our **Annual General Meeting** will be held at the Tracadie Cross Community Centre on **Wednesday, October 11th at 7pm.**

The agenda includes reports by the coordinator, chair, treasurer, and a presentation by guest speaker **Daniel McRae.**

Contact Us

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Facebook Facebook.com/WRTBWA
Instagram instagram.com/wrtbwa

Help us out by following our social media pages. Having more visible supporters helps us get more grant funding.

We would like to thank our funding partners for their support of our work in 2022.

Canada

- Employment and Social Development Canada: Canada Summer Jobs
- Environment and Climate Change Canada:
 - ◇ EcoAction Community Funding Program
 - ◇ Atlantic Ecosystem Initiatives (in partnership with Coastal Action)



- Employment Development Agency: Jobs for Youth; Rural Jobs Initiative
- Skills PEI: Post Secondary Program
- Watershed Management Fund

City of Charlottetown:
Water & Sewer Utility



- Colleges and Institutes Canada: Clean Tech Internship
- PEI Wildlife Conservation Fund
- Percé Program
- Donations from APM MacLean and private landowners



Come say hello at our new office location

Monday to Friday

Summer 7:00-3:30

Fall & Spring 8:00-4:30

Winter by appointment only

