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UINR and Ocean Tracking Network

The Ocean Tracking Network (OTN) is a global research, technology development, and partnership platform headquartered at Dalhousie University. UINR has been working with OTN helping to insert electronic tags that track the movement of Atlantic Salmon in and out of the Bras d'Or Lakes. This spring they were able to insert tags in salmon smolt that were captured in UINR's smolt wheel in Middle River.

As an outcome from our work with OTN in 2012-2013, a paper was just published by Oxford University Press and the Society for Experimental Biology in the journal *Conservation Physiology*: "Condition-dependent migratory behaviour of endangered Atlantic salmon smolts moving through an inland sea." The paper shows that half of the salmon smolt tagged migrate from Middle River into the Bras d'Or Lakes and then into the Atlantic Ocean. A significant number spent more than 70 days in the Lakes suggesting that some smolt stay in the Lakes.

You can watch a video of the tagging process and find a link to the paper at UINR's Facebook page. Just search for #OceanTrackingNetwork.

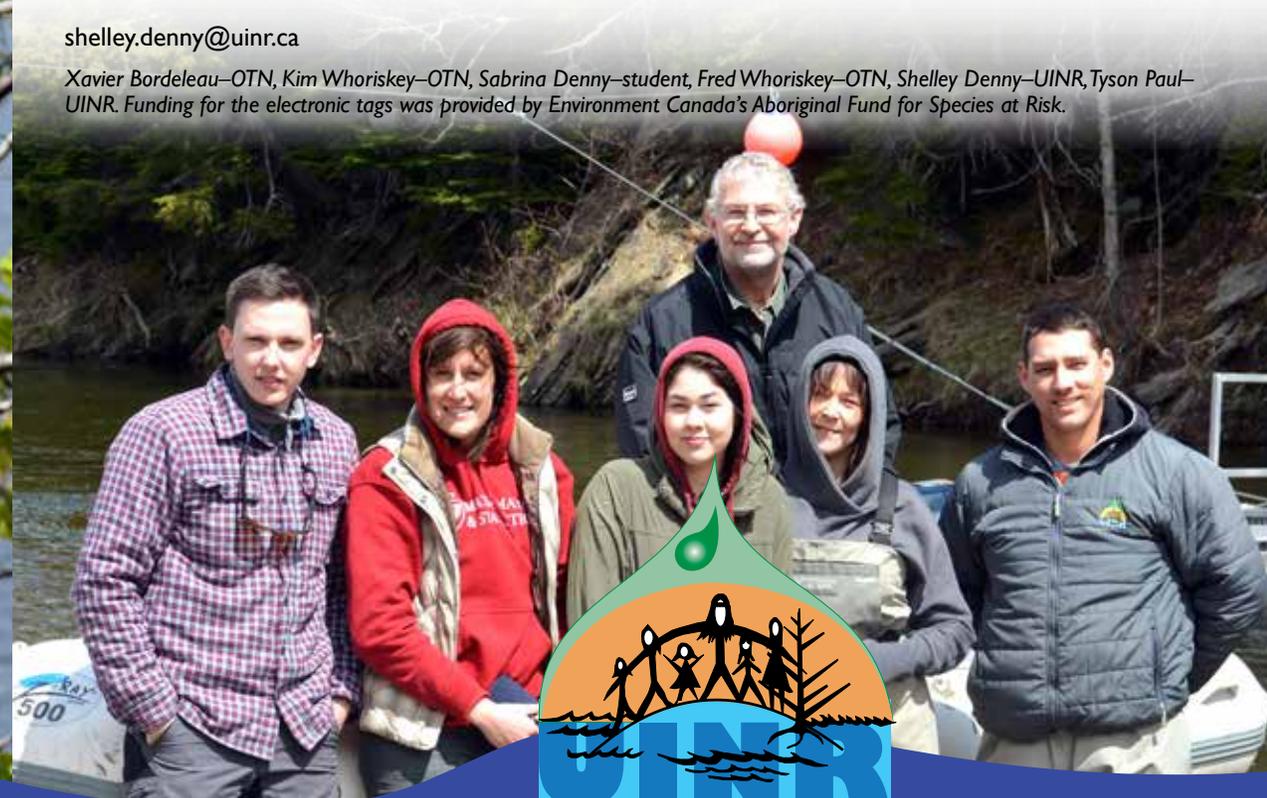
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Xavier Bordeleau—OTN, Kim Whoriskey—OTN, Sabrina Denny—student, Fred Whoriskey—OTN, Shelley Denny—UINR, Tyson Paul—UINR. Funding for the electronic tags was provided by Environment Canada's Aboriginal Fund for Species at Risk.



This is the small electronic tag that is inserted in the smolt enabling their movements to be tracked.

OTN's Xavier Bordeleau and Kim Whoriskey insert a tag in a salmon smolt.





uinr.ca

Here's where we keep you up-to-date on new stuff online from UINR.

We are happy to report that our uinr.ca website will soon be up and running and it's looking great! We've simplified the Menus so now it's easier to find your way around. It has all the resources, videos, publications, and news that we always had but with a modern, easy to use design. At UINR it's all about the people so we've made it easy to find out more about our staff and the projects they are working on. We've been planning a new website design and are working on bringing that to you as soon as possible. We are pretty excited to show you what we've come up with and will be announcing the launch on Facebook and Twitter. Let us know what you think.

In the meantime you can stay up-to-date by following our popular Facebook page and Twitter feed. We will continue to post news, photos, job opportunities in both places, so check it out.



If you are a Facebook user (and who isn't) be sure to LIKE our UINR page. It's growing fast and if you take a visit you'll see why! We often give away free books and other publications just for liking us! Check out our

albums of photos and see how many people you recognize! This is the best place to stay tuned on employment and other opportunities that arise.



If you use Twitter, be sure to join our followers! It's the best way to stay informed on new additions to our website and all the latest updates.



UINR and Environment & Climate Change Canada held two sessions in Unama'ki to discuss funding programs available to First Nations communities. Pictured are Eskasoni's Lands Manager Albert Marshall Jr., Eskasoni Fish & Wildlife's Allison MacIsaac, UINR's Lisa Young, Environment & Climate Change Canada's Veronica Sherwood and Jaclyn Poole, Potlotek Director of Housing and Public Works Quentin Doucette, and UINR's Keith Christmas.



Members of Cape Breton Collaborative Salmon Initiative met to talk about the state of salmon in Unama'ki. Bob O'Quinn—St. Ann's Bay Wildlife Association, Greg Lovely—Margaree Salmon Association, Carter Stevens—CB Island Wildlife Association, Lewis Hinks—Atlantic Salmon Federation, Derek Quann—Parks Canada, John Hart—Nova Scotia Salmon Association, James Bridgeland—Parks Canada, Brent Baker—CB Island Wildlife Association, Leonard Forsythe—Wild Salmon Unlimited/Margaree Salmon Association, Harry Vickers—CB Anglers Association, Dave Cameron—Inverness South Anglers Association, Keith Christmas—UINR, Geoff Nishi—Inverness South Anglers Association, Darryl Murrant—NS Department of Fisheries & Aquaculture, Lisa Young—UINR.



UINR's Keith Christmas shows some students our work on culvert remediation. The high school students are in the Options and Opportunities program which offers students more hands-on learning experiences with a career focus, and prepares them for successful transitions from high school to work, a career path, or a post-secondary program.



Congratulations to UINR's Tyson Paul and Pauline on their new arrival, Kobbli!



Say hello to **Karlee Johnson** who joins us this year as Nikani Awtiken Summer Camp Coordinator. Karlee attends Dalhousie University where she is studying a Bachelor of Science in Medical Sciences. Karlee is a fluent Mi'kmaw speaker and her past employment as research assistant, youth leader, and camp counsellor has given her experience with other organizations that consistently value Mi'kmaw culture and traditions.

"I believe I will be able to establish the importance of Netukulimk and, as coordinator, incorporate it in the Nikani Awtiken Camp."

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W Welcome



Shanna Francis is back at UINR this summer as Camp Manager at our Nikani Awtiken Youth Camp and she brings a wealth of experience along with her. For the past two years she was one of our Camp Coordinators and also assisted in the development of our Natural Resources Fact Sheets.

Shanna attends Saint Francis Xavier University where she is working towards a Bachelor of Education. She also has a Bachelor of Arts in Mi'kmaq Studies from Cape Breton University.

A proficient basket maker, Shanna also exercises her Aboriginal and Treaty Rights by fishing, hunting, spearing, and snaring.

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At UINR we practice Two-Eyed-Seeing in all of our work and it's easy for us to lose sight of the fact that many people don't understand the concept.

Etuptmumk, or Two-Eyed-Seeing, was introduced by our Elder Advisor Albert Marshall over a decade ago and draws on both Mi'kmaw and Western knowledge. With one eye, we look at things from the Mi'kmaw world view—knowledge from the heart, mind, and spirit gained from observations over thousands of years. With the other eye, we look at things from a Western point-of-view—scientific analysis and knowledge. Using both eyes results in a greater and deeper understanding for everyone. It is truly a way of looking at things holistically with the goal of benefiting everyone.

It is a collaborative approach to problem-solving and is a way of operating that is practiced in every project we work on at UINR. In this issue of UINR MARTEN alone you can find Two-Eyed-Seeing in action in our partnerships with Ocean Tracking Network, Parks Canada, Environment and Climate Change Canada, and Collaborative Salmon Initiative. You can see it in our methods of developing a management plan for moose, our partnership in protecting the boreal forest in Cape Breton Highlands National Park, in the activities in our Nikani Awtiken Summer Camp for youth, our many partnerships such as the Bras d'Or Lakes Collaborative Planning Initiative, Pitu'paq, and so many more.

Think about how much more you can see with both eyes wide open!

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The mosquitos and blackflies were in full force for our annual Malikewe'j Clean-up. Things have been steadily improving and there was much less garbage to clean up this year. UINR's Shelley Denny, Karlee Johnson, Lisa Young, and Emma Garden prepare for the ditch clean-up

Step-By-Step Smolt Processing

Every morning throughout the spring, you can find UINR staff at Middle River doing its best to ignore the mosquitos and blackflies, cold drizzle, and chill winds. **Shelley Denny, Angela Denny, Emma Garden, and Tyson Paul** are a hardy lot, and there's not much that they haven't experienced over their six years processing Atlantic Salmon smolt. They didn't nickname themselves "Team Murphy" for nothing! :)

Arriving early in the morning, their first chore is to gear up and launch the inflatable boat to check out the day's capture. We put together this step-by-step guide to show the process.



1 Retrieve salmon from fish bin on smolt wheel. Other fish species are counted and returned to the water.



2 Put all smolt in buckets filled with fresh river water. Oxygenate water with battery-powered air pumps.



3 Take smolt back to shore and set up processing station. Number slides and envelopes.



4 Fill a wash basin with fresh water from river and add 5-6 drops of clove oil.



5 Immerse 4 to 5 smolt in water and clove oil mixture to calm fish for processing. Work in small batches to ensure fish are not unconscious for long periods and recover quickly.



6 Once fish are calm, process fish quickly (30 seconds.)



7 Assign number to fish.



8 Determine if fish are wild or from a hatchery. Hatchery fish have a clipped adipose fin.



9 Identify life stage (parr, pre-smolt, smolt.)



10



Measure length of fish (millimeters.)

11



Measure weight of fish (in grams.)

12



Gently collect scales from the area slightly behind and below the dorsal fin by using the edge of a knife.

13



Place scales on a slide, de-clump, secure in place with a slide cover, and tape edges.

14



Clip upper caudal fin for smolt only.

15



Place tissue from fin clip in DNA vial (smolt only)

16



Place processed fish in recovery buckets. Parr are placed in a separate bucket for release downstream of the smolt wheel. Clipped smolt are transported up river.

17



Wait until fish are fully recovered (energetic) before carefully returning to the river.

18



Fish that are re-captured are re-processed for weight and length (not scales) and are kept in a separate bucket (the parr bucket) for release downstream of the smolt wheel.

New Interpretive Panels Unveiled

The Mi'kmaw flag flies proudly at the Alexander Graham Bell National Historic Park, standing guard over the new set of interpretive panels that were developed in collaboration with UINR to share and celebrate Mi'kmaw culture in Unama'ki.

The process started with Charlie Dennis and grew to include others including Nadine LeFort, Annie Johnson, Lisa Young and Weldon Bona, as well as several Parks Canada team members. UINR developed the text, illustrations are by Leonard Paul, and Barbara Sylliboy did the Mi'kmaw translations.

Madeline Harvey, National Historic Site and Visitor Experience Manager, had this to say, "We, at Parks Canada, are privileged to have such a close relationship with the Unama'ki Institute of Natural Resources. Through this relationship we have learned about the Mi'kmaw community's close ties to nature. Their natural resource management connects people with plants, animals, and the environment as a whole."

There was a full house of community members, students, and tourists on hand to witness the official unveiling by UINR's Lisa Young and Clifford Paul. After the unveiling Lisa talked about the importance of the event to her.



Lisa accepts a gift of a framed print by Leonard Paul.

"When Parks Canada approached us to assist in the creation of the panels we were more than happy to oblige. Over the years UINR has developed a great working relationship with Parks Canada and they have assisted us with a number of great projects—from our Nikani Awtiken Youth Camp to booklets and videos—so we were happy to return the favour.

"The best part of the day for me was to see the inclusion of so many Mi'kmaw youth at the unveiling. I think

that it must be a very uplifting for our youth to see their communities and culture both welcomed and celebrated at such a prominent place as the Bell Museum. We look forward to collaborating with Parks Canada on many other projects in the future."

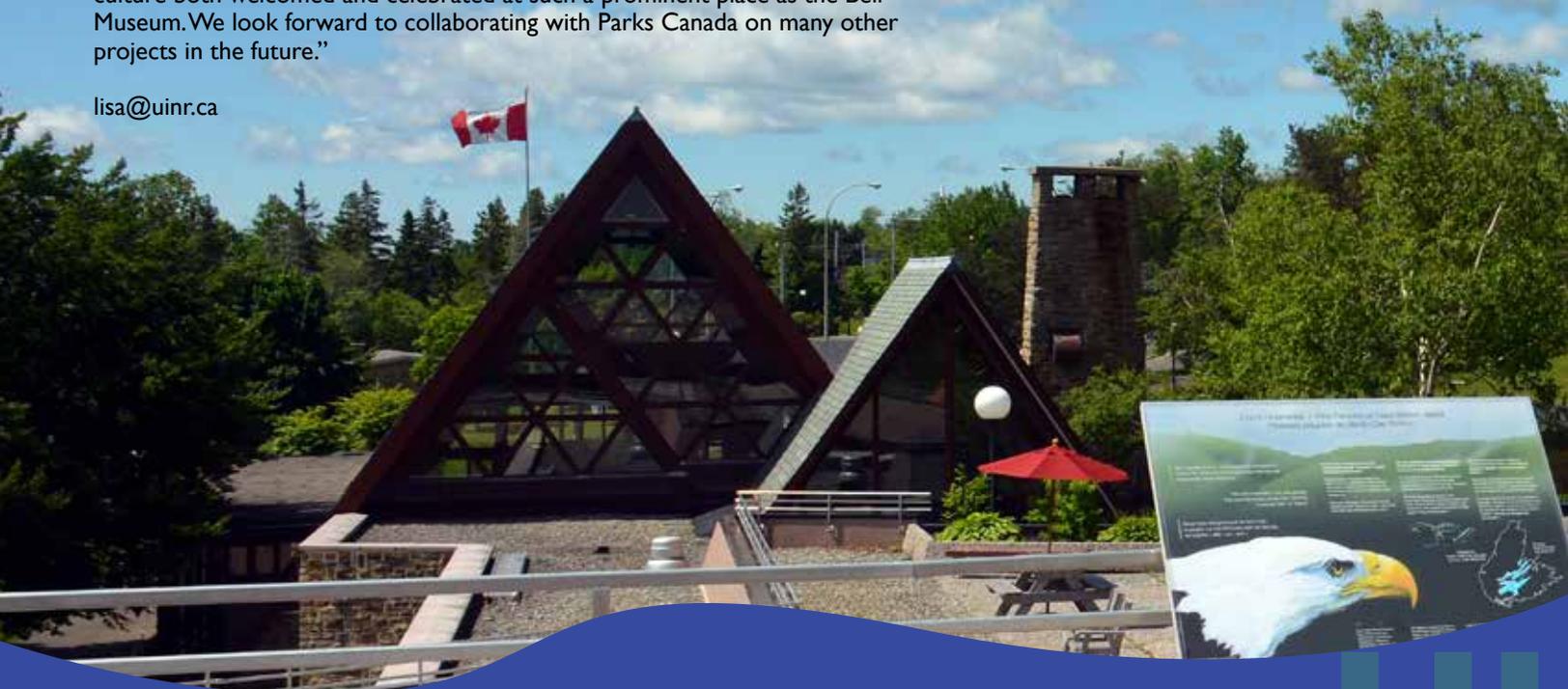
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UINR's Clifford Paul, Parks Canada's Madeline Harvey, UINR's Lisa Young with Parks Canada's Nadine Lefort and her children.



Drumming and chanting welcomed the attendants.





and Annie Johnson,



UINR's Clifford Paul and Lisa Young unveil the panels.



There was a full house for the event including youth, tourists, and community members.



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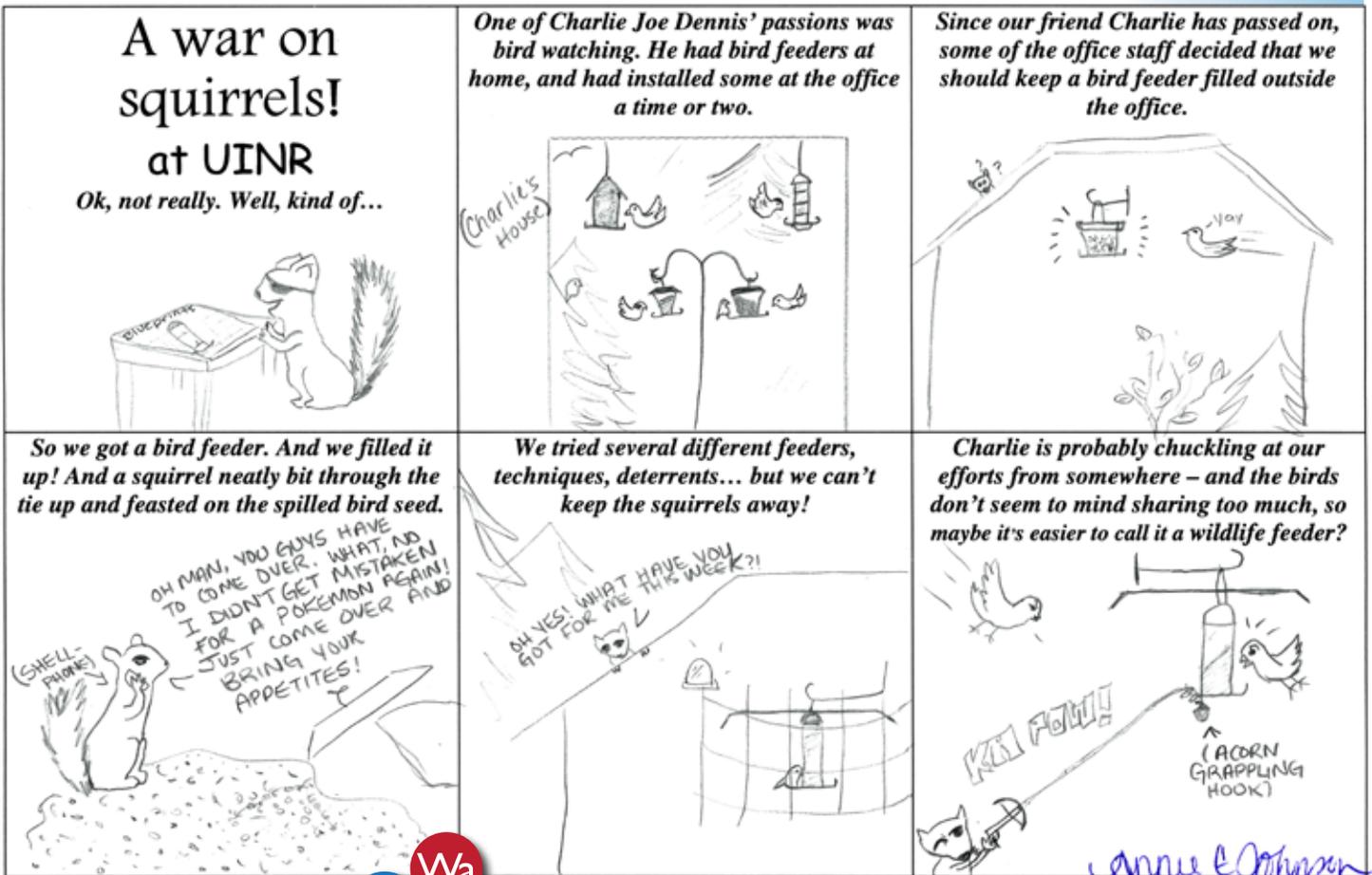
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