



## Message from the President

The cold weather has finally arrived and with it the chance to hit the ice. I first drafted this message in mid-December when there was only about 5-13 cm of ice on northern Lake of the Woods but little on its southern half lake and nothing to speak of in southern Ontario. My original President's message was cautiously optimistic about the state of ice this winter in Ontario. However, the weather has taken a harsh turn to bitterly cold temperatures and heavy snow. It goes without saying that this change in the weather is great news for winter sports

enthusiasts. This is also great news for our Annual Meeting & Conference where we can often enjoy some free time to get out onto the lake for world-class ice fishing opportunities. If you don't already know, this year's meeting will be held February 25-27 at [Geneva Park](#) (YMCA of Simcoe/Muskoka) on the shores of Lake Couchiching (more information is available in this Newsletter). Our meetings are always excellent and this one will be no exception, with special guest speaker Dr. Henry Regier, a great line up of posters and talks, and fun social networking events. To top it off, there is often a reasonable amount of ice on the lake to give our resident ice anglers an opportunity to try their luck during the designated free time.

Hope to see you all at the AGM!

Lee Gutowsky  
[president@afs-oc.org](mailto:president@afs-oc.org)

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### Recommended Minimum Ice Thickness (Rough Guidelines for New Clear Ice Only)

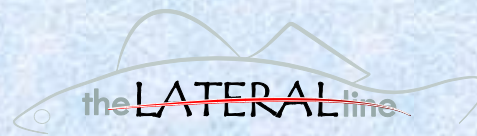
**2" or less**  
**STAY OFF!!**

**4 Inches**  
Ice Fishing

**5 Inches**  
Snowmobile  
or ATV

**8 - 12 Inches**  
Car or  
Small Pickup

**12 - 15 Inches**  
Medium Truck



# 2016 AFS-OC Annual General Meeting



## Annual General Meeting & Conference February 25th – 27th, Geneva Park, Orillia, ON

Join us for our 2016 Annual Meeting and Conference at the YMCA Geneva Park Conference Center, on the shores of Lake Couchiching in Orillia

***“Celebrating Evidence-Based Decision Making in Ontario and Abroad”***

Just a few reasons we hope to see you there:

**Keynote speaker** - CARS Legend of Canadian Fisheries Science and Management – Dr. Henry Reir!

Students are eligible for the E.J. Crossman Award for best student oral presentation.

The OBN Award for best student poster and Outstanding Mentor Award will also be presented.

AFS-OC Mentorship Program "Doing science, being relevant, earning employment".

You will make connections with great like-minded (fish) people!

Ice fishing opportunity.

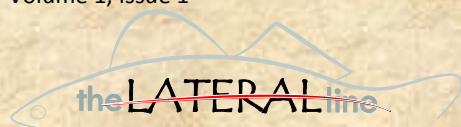
Discounted rates and a travel bursary for members and students!

**Registration is available through our [Online Store!](#)**

View additional details including the Annual Meeting Program at [www.afs-oc.org](http://www.afs-oc.org).







# AFS-OC Social—Women in Biology

It was a dark and stormy night... I could smell trepidation in the air.... the quizzical look on the faces of the 35 attendees at the Ashburnham Ale House in Peterborough confirmed what I had already deduced – that no one was **exactly** sure what they were getting into by showing up at the inaugural Women in Biology Social. (And that went double for the young fellas in the crowd....)

Your erstwhile AFS-OC hostesses – Sarah Hogg, Kim LeBrun, Kelly McLean and Ann Rocchi – leapt fearlessly into the fray. Introductions were made, beer was poured and nerves were soothed as the projector hummed into life for our Special Guest Lecture. Dr. Cindy Chu, MNRF, regaled us with modelling results in her cutting edge presentation “Dam Climate Change – The Invasion Risk Associated with Warming Habitats, Stream Connectivity and Dams.” She also provided completely unsolicited and unorchestrated kudos for the AFS-OC, noting particularly the great advantage to first time presenters of speaking at our friendly and unthreatening

Annual Meeting and Conference. Cindy finished her lecture the proud new owner of an AFS-OC buff.

Four different varieties of delicious thin crust pizza arrived during the intermission while the chairs were rearranged into a conversation circle for the Two-Minute Mentoring portion of the evening.

During the break, the younger participants had been invited to write down any burning questions they had regarding career choices, undertaking further schooling, workplace difficulties, etc., and submit them, unsigned, for discussion. Veteran professional bios and AFS-OC members (Warren Dunlop, Helen Ball, Bev Ritchie, Cindy Chu) were



**Ann Rocchi**—Introducing the Mentoring Panel and “rules of engagement” of panel members in mentoring discussions



**Special Guest Lecturer—Dr. Cindy Chu, MNRF**

*“Dam Climate Change—The Invasion Risk Associated with Warming Habitats, Stream Connectivity and Dams”*

“voluntold” to be our Mentoring Panel and they graciously provided pearls of wisdom from their own careers as professional biologists. To the organizers’ great surprise and supreme satisfaction, a distinct change occurred in the room about halfway through the session, whereby the “Old Guard” answered fewer and fewer questions because the Young Contenders felt comfortable enough to start adding their own insights to the mix.

Thanks were given to the Mentoring Panel with an AFS-OC Dancing Trout pin, draw prizes of organic apple cider were rewarded and drinks drained as the evening wound down with a final mix and mingle. Those opening quizzical looks were but a dim memory as requests were made for more evening socials in the near future. Overall, a job well done and a good time had by all!

As always, we would like to thank the very generous support of our sponsor – the AFS Ontario Chapter!

***If anyone would like to run a similar event in a different part of Ontario, feel free to contact any of the organizers and we will provide our winning formula! (Mostly hospitality, munchies and CH<sub>3</sub>CH<sub>2</sub>OH).***

Ann Rocchi



# AFS-OC Student Subunit

## Student Success Workshop

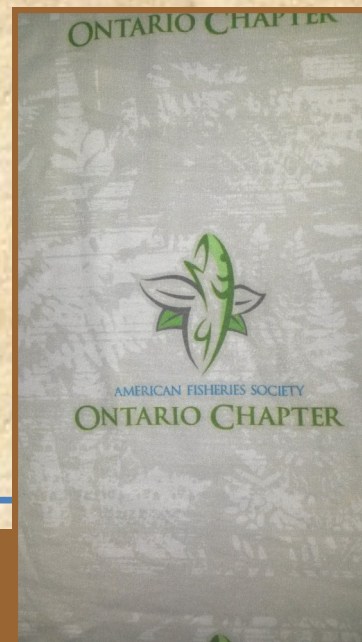
The Student Subunit of the American Fisheries Society Ontario Chapter organized a Student Success Workshop held on December 4, 2015 in Ottawa. The workshop included a data analysis session at Carleton University, which helped students to develop key analytical skills for their schooling and careers in biology. The workshop continued at Lieutenants Pump, where government employees Marie-Ange Gravel (Environment Canada), Tara Redpath (City of Ottawa), non-government organization employees Nick Lapointe (Nature Conservancy of Canada),

Lauren Stoot (Canadian Wildlife Federation), academic post-doctoral fellow Chris Elvidge (Carleton University), and consultant Charles Hatry (Kilgour and Associates) delivered talks that covered information on their lines of work, how to be successful in school, network with potential employers, build your resume, and find meaningful employment. A clear message emerged from the speakers, which conveyed the challenges of finding employment in biology after completing a university degree, and the importance of extra-circulars and networking for making key connections that ultimately

lead to employment in the field. A mentoring mixer followed the speakers, which enabled the students to engage with mentors one on one and ask specific questions of interest to them. With over 80 students attending, the Student Subunit of AFS-OC is proud to have provided an opportunity for so many students to gain knowledge and experience that will aid them to become more successful students and professionals. This would not have been possible without the hard work of AFS-OC Student Subunit Committee members Jake Brownscombe, Vivian

Nguyen, and Jacqueline Chapman, as well as the many mentors that volunteered their time for younger generations of biologists.

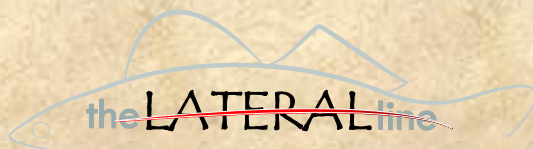
*Jake Brownscombe*



### AFS-OC Buffs

These promotional Buffs are sporting the AFS-OC logo, and are High UV protected.

Purchase them through AFS-OC's Online Store at: <http://www.afs-oc.org/shop/>



**WORLD FISH MIGRATION DAY**

May 21<sup>st</sup>, 2016

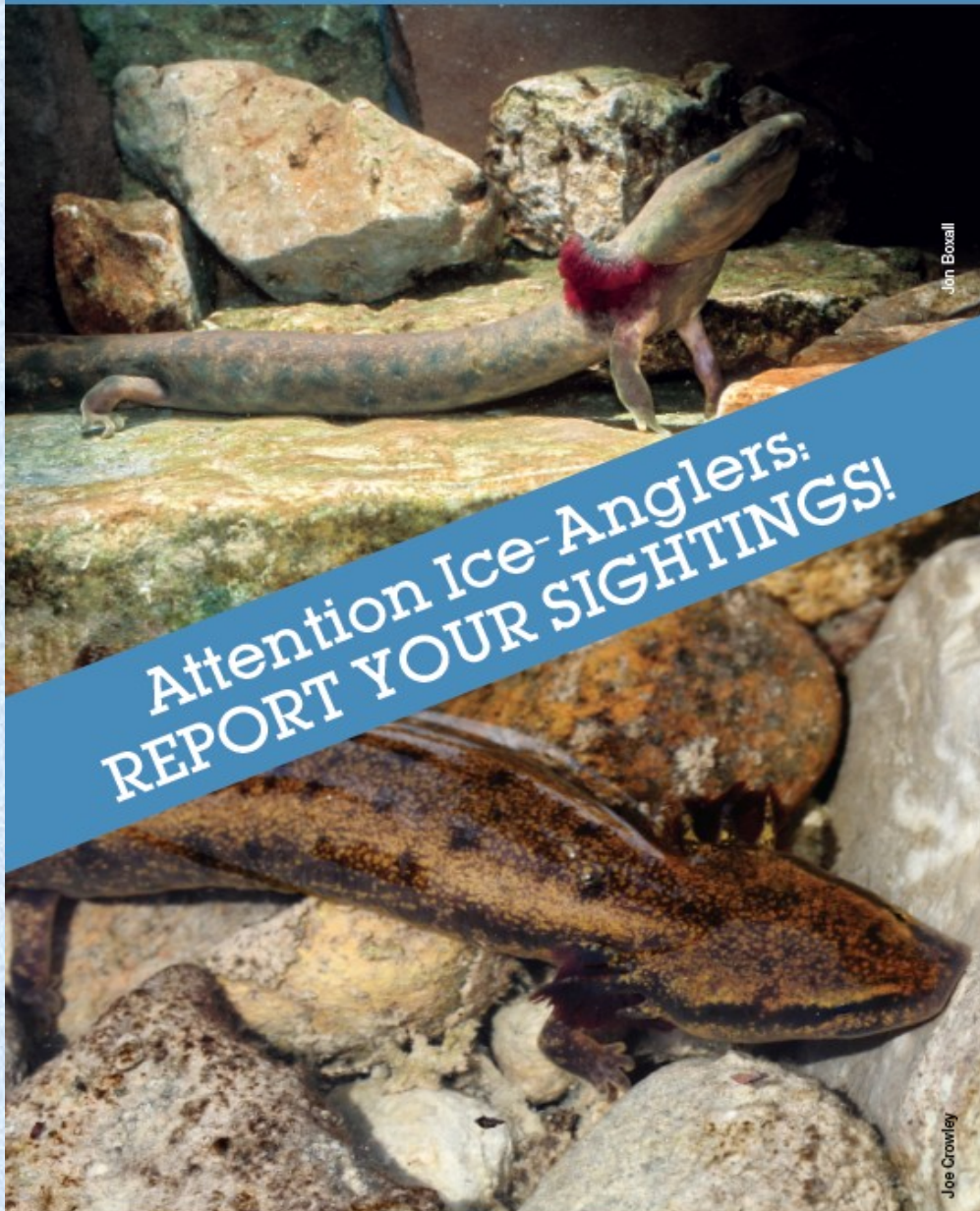
**World Fish Migration Day**  
Connecting fish, rivers and people

[www.worldfishmigrationday.com](http://www.worldfishmigrationday.com)

© Michele Roggo /WWF Canon



## Mudpuppy



Jon Boxall

Joe Crowley

Attention Ice-Anglers:  
REPORT YOUR SIGHTINGS!

**Does the “fish” you just caught have legs?**  
If so, it may be a mudpuppy - Ontario's largest salamander.

Report your sightings to the Ontario Reptile and Amphibian Atlas by taking a photo and sending it to [atlas@ontarionature.org](mailto:atlas@ontarionature.org). Even better, download the atlas app at [ontarionature.org/app](http://ontarionature.org/app) to quickly and easily report all your species sightings.

**Ontario Nature**  
A registered charity protecting Ontario's wild species and spaces since 1931  
[ontarionature.org](http://ontarionature.org)

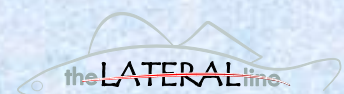
### MUDPUPPY SALAMANDER (*Necturus maculosus*)

#### FUN FACTS:

- other common names include common mudpuppy and waterdog
- It is the only completely aquatic salamander in Canada
- They are grey to rusty brown on top, spotted blue with a grey underbelly.
- Have feathery red external gills growing from the widest part of their heads
- Can grow to a length of ~50 cm (including tail)
- Inhabit lakes, rivers, streams and larger bodies of water.
- Usually hide under rocks during the day, and breed in the spring (May or June)
- There are few natural enemies known to the adult mudpuppy

Visit Ontario Nature's Website to learn more about this interesting little individual:

[http://www.ontarionature.org/protect/species/reptiles\\_and\\_amphibians/mudpuppy.php](http://www.ontarionature.org/protect/species/reptiles_and_amphibians/mudpuppy.php)





# SERIES: Fish Species Complexity—Highlighting Diversity in Ontario

## Lake Trout Diversity in Lake Superior: Dog River Lake Trout

Nick Jones, Research Scientist | Aquatic Research and Monitoring | Ontario Ministry of Natural Resources and Forestry

Lake Trout (*Salvelinus namaycush*) are one of the most diverse species in Canada. Fishes can diversify into new forms (i.e., adaptive radiation), particularly when a change in the environment makes new resources available, creates new challenges, and opens environmental niches. Glacial advancement and retreat created conditions for Lake Trout to colonize and radiate across North America. While aquatic ecosystems in cold northern latitudes such as Canada might not have many fish species they certainly have many morphs within species.

In Lake Superior alone at least four different Lake Trout 'morphs' have been described including leans, siscowets, redfins and humpers which spawn at over 250 different locations in the lake (Goodier 1981). Each morph has unique adaptations to exploit different niches inshore, offshore, benthic, pelagic, piscivorous, and planktivorous. Leans were the most sought by fishermen whom recognized thirty-six

different 'breeds' or forms related to coloration (e.g., yellowfins, salmon trout, grays), body shape and size, and behavioral differences including seasonal movements and spawning habits. For instance, Lake Trout have been documented to spawn in or near 16% of rivers in Lake Superior. According to Loftus (1958) notable river spawning populations of Lake Trout occurred in the Montreal, Dog, Pukaskwa, Eagle, Michipicoten, and Steel Rivers. Lake Trout from the Dog River also spawn quite early (~Sept 20<sup>th</sup>) compared to Lake Trout of other origins which spawn closer to October 20<sup>th</sup>.

When the first Europeans entered the Superior region in the middle 1600s they noted that the Ojibway were heavily dependent upon fish for food. Explorers commented on the great abundance of fish the First Nations would dipnet within rapids (Thomas 1987). The supply of fish appeared limitless in the vast lake. However, much of the harvest was taken during times or at places of fish concentration (e.g., rivers, shoals), giving the misconception of infinite resource. The 17<sup>th</sup> and 18<sup>th</sup> century saw the rapid expansion of commercial fishing. Advancement in fishing technology



allowed greater catches from further afield. In addition to commercial fishing, poaching was also rampant. One man was reported to take 85 kegs of salted fish and a ton of fresh fish over six days from the Dog River. The Montreal River was also a famous location for poachers (Goodier 1982). From 1920 to 1950 Lake Trout supported the commercial harvest of 2 million kg a year. Commercial harvest declined sharply in the 1950s as Lake Trout stocks collapsed from overfishing and Sea Lamprey (*Petromyzon marinus*) predation. At the same time, spawning populations in the Dog and Montreal

rivers declined from over 2,000 fish in 1952 to only a few fish in 1955 (Loftus 1958).

In acknowledging the uniqueness of the river spawning Lake Trout, the Ontario government made an effort to establish a refuge or type of captive breeding program that could be used as a source for stocking back into the Great Lakes. In 1955 eggs were collected from the Dog River and stocked into the Mishibishu Lake chain which is the headwaters of the Dog River. From 1956 to 1973 roughly 400,000 Mishibishu

**Fun Fact:** OMNRF stocked the Mishibishu strain annually into Lake Ontario from 1996 to 2006 totalling over 700,000 fish. The propensity of this strain to spawn in rivers was noted when the Mishibishu fish returned in large numbers to tributaries around Lake Ontario, especially the Ganaraska River.

Continued on Page 8





## Introducing

# HENRY REGIER

*2016 AFS-OC AGM KEYNOTE SPEAKER*

I trace my awareness of some personal ecosystemic themes to 1936, say, when I was six years old picking up branches and pulling out roots while helping in a small way to clear virgin bush on our homestead in the Peace River Country of Alberta. My father's six-horse 'breaking plow' liberated mouldy though pleasant odors that may have been imprinted in me. Beaverlodge Creek with its jackfish drained nearby Preston Lake and skirted the pasture on our farm. Our one-room elementary school, built by community volunteers under my father's supervision, was called Preston Lake School.

A neighbour broke sod following what he thought was his purchase of land and farming rights from Danezaan Crees of the nearby Horse Lake Indian Reservation. The next night the Crees turned back the cut ribbons of sod to re-fill the furrows. My father explained why they did so. My personal experiences with Ontario's fish and fisheries began in 1943 when our family moved to Ontario's Niagara Region. First we lived about one km from the Lake Ontario shore and noted the countless dead alewife on the beach in early summer. Then we bought and rehabilitated a derelict farm that straddled historic Four-Mile Creek 3 km upstream from the lake shore and encountered large snapping turtles near a pioneer cemetery on our property. I was flooded with proto-ecogenic perceptions and learnings.

I note in retrospect that in my formal education, through five levels, my interests related mostly to emerging scientific and mathematical methods and inferences related to 'ecogeny', i.e. to autogenous evolutionary phenomena usually subsumed under ecology, economics, ekistics, and other eco-specializations.

Several over-lapping emphases in what I now recognize as an ecogenic mindscape were prominent in my elementary, secondary and university education all the way to a doctorate and a post-doctoral fellowship. The will o' the wisp challenge of numeralizing inferences about apparently recurring features of living things has intrigued me. In our families we lived our lives as practically informed by relevant family traditions, our formal education and cultural influences. So with respect to pragmatic ecogeny: been there, done that.



## Lake Trout Diversity in Lake Superior: Dog River Lake Trout—*cont.*

strain lake trout were planted in at the mouth of the Dog River. Fieldwork in 1977 confirmed ripe fish in the Dog River. Recent tissue and egg sampling in the Dog River and subsequent genetic data indicate that river spawning lake trout have successfully re-established in the Dog River. Further research will consider other historical runs for re-establishment.

### REFERENCES:

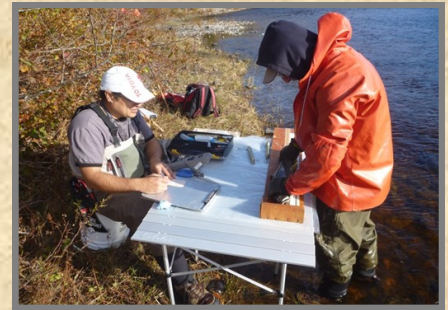
Goodier JL. 1981. Native lake trout win the Canadian waters of Lake Superior prior to 1955. Master Thesis at the University of Toronto. pp 201.

Goodier JL. 1981. Native lake trout (*Salvelinus Namaycush*) Stocks in the Canadian waters of Lake Superior prior to 1955. Can. J. Fish. Aquat. Sci. 38: 1724-1737.

Hansen MJ. 1996. A lake trout restoration plan for Lake Superior. Great Lakes Fish. Comm. pp 34.

Loftus KH. 1958. Studies on river-spawning populations of lake trout in eastern Lake Superior. Trans. Am. Fish. Soc. 87: 259-277.

Waters TF. 1987. The Superior North Shore. University of Minnesota Press, Minneapolis, Minnesota. pp. 361.



## Fish Focus: **RAINBOW DARTER** (*Etheostoma caeruleum*)

Rainbow Darters are, without a doubt, one of the most colourful fish in Ontario. Some say minnow, but beware!

These small fish are NOT part of the Cyprinid family. They are part of the Percidae (Perches and Darters) family, which also includes Walleye, Sauger and the non-native Ruffe.

Rainbow Darters, like all darters, lack a swim bladder. This helps them to stay situated in their preferred benthic habitat. Since the Rainbow Darter prefers the shallow gravelly bottoms of streams, they feed upon benthic invertebrates, molluscs and small crustaceans. They spawn in riffles during the spring when the water temperature reaches around 15°C.

Rainbow Darters are a deep bodied fish with a pointed snout. They lack a continuous groove between the upper lip and snout. They have 3-11 back saddles, 2-3 of which are most visible. The side of the Rainbow Darter also have bars-which encircle the entire body (distinctive feature). The bars are blue and red in males-but these colours are more brown/yellow in females. During spawning season, males are bright blue, green, and orange (see photo).

Similar species include: Fantail Darter, Greenside Darter, Iowa Darter, Johnny Darter, Least Darter and Tessellated Darter.





## “On the Hook!”

Recent articles published in the news.



‘Hundreds of mysterious eels have washed up on shore near the mouth of the Nottawasaga River’

<http://barrie.ctvnews.ca/mysterious-eels-wash-up-on-wasaga-beach-shore-1.2559457>



‘Three Asian Grass Carp have been found in the waters around the Toronto Islands, bringing the total number of the invasive fish found in Toronto this summer to five.’

<http://canadajournal.net/science/three-more-asian-carp-found-in-lake-ontario-32199-2015/>

‘It examined the cumulative effects of hydroelectric dams on the eels and projected that only 2.8 out of every 100 eels would survive passing through them as they traveled through the Mississippi and Ottawa rivers to the Upper St. Lawrence River.’

<http://greatlakesecho.org/2015/10/20/study-less-than-3-percent-of-eels-survive-ontario-dams/>



### Behind the Scenes Tour of the ROM Lab



On Thursday January 14, 2016, twenty AFS-OC members got a behind the scenes tour at the ROM’s offsite lab, guided by the one and only Erling Holm (Assistant Curator of Ichthyology). As you can imagine, this was EXTREMELY exciting to us ‘fish heads.’ There were jars upon jars of fish specimens (some of which have been collected by AFS-OC members). Many were from afar, but there were also various specimens from across Canada. One of the highlights of the tour was visiting the ‘coffin room.’ In this room, lies the world record Lake Trout (*Salvelinus namaycush*). This specific fish was from 1961, caught in a gill net in Lake Athabasca (Alberta), weighting in at a whopping 102lbs! The Lake Trout was a sterile female, thought to be somewhere from 20-26 years old upon capture.

Other highlights from the trip included a coelacanth (*Latimeria chalumnae*) specimen (prehistoric fish species), several different shark species (heads and fins), Pinook (Pink Salmon X Chinook Salmon hybrid), Cisco X Lake Whitefish hybrid, Black Buffalo, and a Silver Carp. Besides all the exquisite jars of fish, there were many other specimens of frogs, lizards, bats, rats, and the list goes on and on. There were also large cases with mammals inside such as polar bears, deer, and even a Great Dane!

Some historically important specimens included a Cutthroat Trout collected from British Columbia by Bill Ricker in 1936 and some Atlantic Salmon specimens collected by Scott and Crossman, from Newfoundland in the 1960’s.

The tour was followed by a fun-filled social hour located at a nearby pub, the Abby Arms.

If you have an idea for a future fish-type social event, please pass along to any member of the AFS-OC Executive Committee!



# Photo Theme of the Issue— Fishing and Family



Photo taken by Ann Rocchi  
Ann's daughter Claire  
assisting on the Cobourg  
Creek Stocking project, 2013

Photo taken by—Kim  
LeBrun, Seymore Lake,  
Ontario

Thanksgiving 2015— So  
thankful for cousins to  
fish with.

In Photo—Kalea Horne  
and Lyla LeBrun

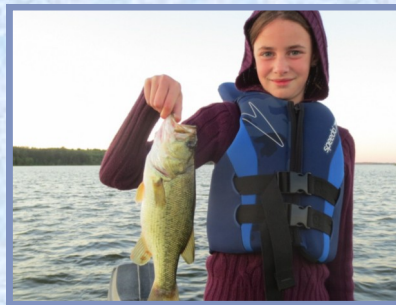


Photo taken by Ann Rocchi  
Ann's middle daughter Natalie  
with a Balsam Lake  
Largemouth Bass

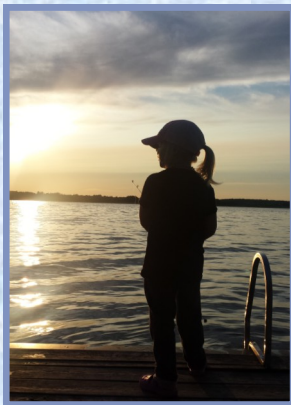


Photo taken by—  
Khrista Horne. —  
Daughter  
enjoying a few  
casts at dusk  
In Photo—Kalea  
Horne.

Photo taken by Ann  
Rocchi

Ann's daughter  
Miranda assisting  
on the Cobourg  
Creek Stocking  
project, 2004



## Next Issue's Theme—Fishing at Work

Photo taken by—Courtney Malcolm, MMM Group

You know it is going to be a great day at work  
when these beauties start showing up at your  
sampling  
site.

