



Message from the President

Hello Ontario Chapter Members!

As I compose this President's message, the first of my term, I am currently in snowy northwestern Ontario contemplating why a supposedly rational person would choose to spend their vacation time sitting outside for hours at a time in temperatures around minus 20 degrees. Meanwhile, back home in southern Ontario the temperature is hovering around zero. The arrival of winter means two things are not far behind: ice fishing season and the Annual General Meeting of the Ontario Chapter of AFS. If you have never attended the annual conference, I strongly encourage you to consider coming out this year. If you have attended the conference recently, you already know what a great event this is and I am looking forward to seeing you again this year!

The conference is a great opportunity to meet and network with fellow fisheries professionals and to listen to interesting presentations on research, restoration projects, and other topics relevant to Ontario fisheries. The meeting also provides a mentorship session, which is a great opportunity for students to learn about the industry.

Aside from the annual meeting, your chapter Executive Committee is working hard to organize engaging events for chapter members. Upcoming events range from guest lectures to social events and tours of research facilities. I urge you to take advantage of these opportunities and let myself or any of the chapter executives know if there is a particular event or opportunity that you would like to see and we will do our best to bring it to fruition.

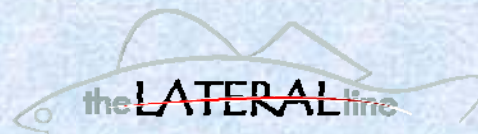
In the meantime, enjoy the winter and I will see you in Orillia!

William Glass, AFS-OC President

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2018 AFS-OC Annual General Meeting



On February 22-24, the Ontario Chapter of the American Fisheries Society will host their 2018 Annual General Meeting at the YMCA—Geneva Park in Orillia, Ontario.

This year's conference theme is **"Re-naturalization, Restoration and Sustainability of Ontario Fisheries"** and we have a great lineup of oral and poster presentations, a talk from the Keynote Speaker, and one special event.

Our Keynote speaker for this year's AGM is Dr. Trevor Pitcher, Interim Director for Research & Development (ORIS) and Associate Professor for the Department of Biological Sciences & Great Lakes Institute for Environmental Research at the University of Windsor. Dr. Pitcher will be speaking to **"Restoring Aquatic Biodiversity in the Anthropocene:**

Developing the Science of Reintroduction Biology".

This year's special event will include a Fish ID test similar to what is provided by the MNRF through the OSAP training for Ontario fishes. Scott Gibson from the MNRF will provide a brief presentation regarding the course offered, and then all interested parties can take the Fish ID test, and if you pass will receive a certification indicating your success.

We will also be hosting a mentoring session and social on Friday night, as well as a trade show throughout the weekend.

The Executive Committee looks forward to seeing you there!

Meet our new Assistant Webmaster—Steve Burgin

Born and raised in Lindsay, Steve attended Fleming College where he received his Fish & Wildlife Technician diploma in 2008 before heading to Trent University for his B.Sc (Honours) degree in 2010. Steve started his fisheries career with the Algonquin Fisheries Assessment Unit, living and working in the park during the summers of 2008 and 2009. Next he worked as an Electrofishing Technician for Credit Valley Conservation during the summer of 2010. Since then, he has been employed by Natural Resource Solutions Inc. as an Aquatic Project Biologist. In this position he manages and contributes to a broad range of projects including fish community assessments, benthic monitoring, and detailed aquatic habitat characterizations for Environmental Impact Studies, municipal Class Environmental Assessments and multi-year monitoring projects. In his spare time he volunteers on rehabilitation activities for Trout Unlimited and is also currently involved with the *Bringing Back Brookies* initiative occurring within the Upper Credit River Conservation Area.

Steve has been keenly interested in the aquatic environment since he was young and has cultivated a passion for fisheries conservation over the years through school, work, volunteer experience, and many, many hours spent fishing across Ontario. Steve lives near the Grand River in Elora with his wife and baby boy and still manages to get out with his fly rod whenever he can. He hopes to foster this same passion in his son and plans to introduce him to fishing as soon as possible.



Fish Focus: Sand Shiner (*Notropis stramineus*)

Description: The Sand Shiner is an elongated small, silvery minnow with larger scales and 7 anal rays. The body is silvery with a pale amber body. A pair of dark spots or dashes can be seen along the lateral line, and the belly is silvery white in colour. The males will develop small nuptial tubercles on their heads during spawning. The anus has little to no pigment, contrary to their look alike, the Mimic Shiner who has black pigment around the anus. Mimic Shiner and Ghost Shiner can be mistaken for the Sand Shiner, but both these species tend to have 8 anal rays. The Ghost Shiner also has a very faint mid-dorsal stripe whereas the Sand Shiner has a distinct mid-dorsal stripe in front of the dorsal fin.

Habitat: The Sand Shiner prefers the slow-moving warm waters of streams and lakes which contain bottoms of sand and gravel. They are often found in shallow sandy areas of the Great Lakes. Sand Shiners are widespread from the central US to southern Canada.

Reproduction: Spawning begins in late spring to the middle of the summer months when the water temperature reaches above 21 degrees Celsius, with spawning occurring between 21 and 27 degrees Celsius. Adults spawn and release eggs and sperm over vegetation or sandy substrates. Since this species is a broadcast spawner, there is no protection or care given to the eggs and young.

Prey: The Sand Shiner forages on a variety of creatures, from benthic invertebrates and crustaceans, to algae and plants.

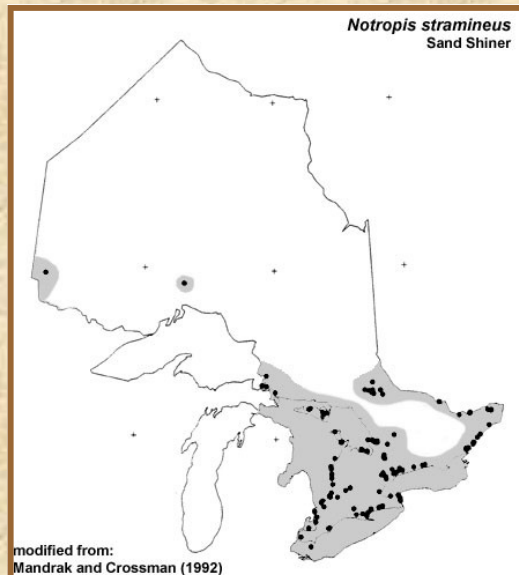
Maximum Age: 3

Ontario Record: 8.5 cm (3.3 in) TL

Ontario Average: 6.5 cm (2.6 in) TL

DID YOU KNOW?

The sand shiner gets its Latin name from the colour of its body. The body is silvery with a pale amber colouring. In Latin, *stramineus* means "of straw"!



STUDENT SUBUNIT UPDATE

On Tuesday February 27, 2017 the Student Subunit hosted an event at McMaster University.

This event was attended by approximately 20 student, faculty and community members.

The theme for the series hosted at McMaster University was “Fishy February”, wherein fisheries related research conducted in Ontario was presented, highlighting McMaster’s research on water.



The event featured two guest speakers:

- 1) Dan Weller, a PhD student in the Department of Biology at McMaster University, present on his topic related to researching types of spawning habitat and habitat fidelity of Muskellunge in the Georgian Bay.
- 2) Post-Doctoral researcher Erin McCallum, of the Department of Psychology, Neuroscience and Behavior, presented on her research fish communities downstream of a wastewater treatment plant.



Fleming College Hosts Dr. Mandrak

On Thursday, November 16th, 2017 in the Auk’s Lodge of Fleming College, an appearance by Biologist and Great Lake’s Fisheries expert Dr. Nicholas Mandrak had united the scrupulous minds and eyes of Students and Professors alike. Dr. Mandrak, whose career studying Freshwater Fishes of the Great Lakes has lasted for over 30 years, drew our undivided attention to some of the countless milestones that have since marked his career, and many of the paths that resulted in his becoming a Biologist. An immigrant from Britain, and a fish-fanatic from an early age, Dr. Mandrak’s story was as unique as it was admirable. He spoke of his first fish, which he caught at as a child from the Credit River, and all the excitement and ecstatic sentiment which followed; a white sucker. Having such grand appreciation for a species so universally-loathed by anglers, it was evident that Nick was born with an innate passion for the natural world. From here, into adolescence and his teenage years, this unexplainable fascination with the slimy, scaly creatures that inhabit the innumerable rivers, lakes and ponds of Ontario began to grow into something much, much greater. Nick surrounded himself with literature pertaining to the study of fishes, and had even set his future career goal as an Ichthyologist. However impractical and rash this may have seemed to his peers, and to his parents, it was an end he was determined to meet. In 1986, as a pupil of the revered Dr. William Beverly Scott, Nick received his Bachelor of Science from the University of Toronto, and later his PhD. Nick has traveled around the globe to study the habits and evolutionary peculiarities of countless fishes, many found in obscure and largely uninhabited corners of the world. Today, he passes on his knowledge to his students, in the department of Biological Sciences at the University of Toronto, where he is an Associate Professor. He is currently researching prevention methods and environmental impacts surrounding the migration of the Asian Carps, species which pose an imminent threat to the biodiversity of the Great Lakes.



By Luigi Richardson

Ontario's Adfluvial Smallmouth Bass

N. Jones Ontario Ministry of Natural Resources and Forestry, B. Morrison Ganaraska Region Conservation Authority

Fish exploit opportunities within aquatic ecosystems to increase their likelihood of survival, growth, and reproduction. To maximize these opportunities, many fishes make long migrations or movements. For example, in river systems fish may need to move to spawning areas, their young may rely on warmer backwater areas and side channels for first year growth (Baldock et al. 2016), in winter they might make extensive movements to overwintering areas such as deep pools or lakes (Northcote 1978; Bunt et al. 2002). Some fish such as tuna exploit temperature gradients in oceans by making seasonal movements north and south at different times of year. But not all animals migrate. Some find all their needs met at one location. Populations of animals may comprise both resident and migratory individuals, which is known as partial migration (e.g., geese, robins). A species may be a partial migrant in one part of its range but be a complete migrant in another. Numerous species of fish are partial migrants and this has been well documented for salmonids.

*Bass are on the move! Climate change and **ILLEGAL** introductions have led to an expanding range north in many lakes and rivers.*

Smallmouth Bass (*Micropterus dolomieu*) live at the edge of their northern range in Ontario. The main limitation is water temperature and the ability to grow to sufficient size during their first year of life. Too small

and they may not have the energy reserves to make it through a long Canadian winter (Shuter et al. 1980; Biro et al. 2004). Many bass populations around the Great Lake shorelines and some large inland lakes are limited by cold temperatures (Gerber 1987). In large lakes, seiches can quickly lower temperatures forcing bass to move, sometimes while trying to guard young on nests (Gerber 1987). Some of these bass, however, have found a way to make the most of their environment by moving to more favourable habitats during portions of their life history.

While many consider Smallmouth Bass to be sedentary, many individuals are known to make seasonal and daily movements in lakes and rivers. Adfluvial Smallmouth Bass are individuals that make spawning migrations from lakes into tributaries to spawn. After a period of time the adults and young return to the lake. Robbins and MacCrimmon (1977) first described the adfluvial

The evolutionary history of smallmouth bass suggests that they are more at home in rivers than lakes. Only recently, since last glaciation, have they had access to warm lakes.

migration behaviour in a tributary of Lake Simcoe (Pefferlaw Brook), where both sexes migrated from Lake Simcoe upstream starting in May until mid-late June to spawn. All fish emigrated back to Lake Simcoe over the course of the summer. It was demonstrated that there was a high level of nest site fidelity (Robbins and MacCrimmon 1977; Ridgway et al. 1991), potentially indicating that each tributary hosted a genetically unique population. It was also noted that repeat spawning individuals comprised 19% of the spawning populations, of which 65% were females. Anecdotally, this behaviour has been observed on numerous Great Lakes tributaries.



Exploding Ordinances in Georgian Bay

On July 7, 2017, the AFS-OC was made aware of a serious situation that occurred on June 30, 2017, by the Georgian Bay Association (GBA). We have re-posted the following publication from the GBA to inform all AFS-OC members of the potential for danger on our open waters.

We are sending this bulletin to you to make sure you and your members are informed about a very unusual and troubling incident that took place last Friday (June 30). In the early afternoon of that day a Madawaska Club cottager was paddling near her cottage at the outer reaches of Go Home Bay when she came across a floating canister. Upon closer inspection, she noticed a label that said: ***"If you find this call the Canadian Armed Forces"***.

She decided instead to call 911.

The OPP came immediately followed closely by the Armed Forces. It turns out that what she had come across was a **"test" bomb that the Armed Forces had fired in the winter over Georgian Bay**, which had not detonated and had floated to the eastern shore of the Bay. The Armed Forces determined that the best way to deal with this bomb was to detonate it on the spot. Windows rattled and the ground shook throughout the wider Go Home community, re-

sulting in a flurry of posts on Facebook as cottagers tried to find out what the boom was all about.

Needless to say, this incident has raised a number of questions. Why does the Armed Forces use Georgian Bay to test its armaments? Do they not account for all of the bombs they deploy? What would have happened if a boat travelling at speed had hit this unexploded bomb?

We will follow up with the authorities to get some answers for the safety of us all, post the information on our website and include it in the next eUpdate.

Since the rumor mill may be working overtime on this incident you may wish to consider getting this information out to your board and members.

On a related note Peter Koetsier reminded us that Sandy Phillips of Sans Souci had a similar experience in 2009 out on the Umbrella Islands.

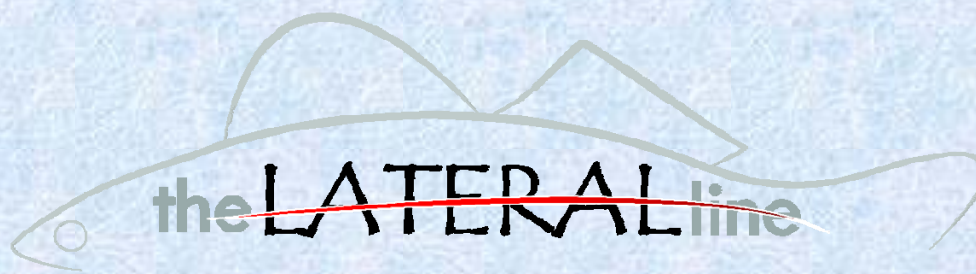
This event was written up by Sandy and published in the fall 2009 edition of GBLT Landscript.

Many thanks.

Best Regards,

Rupert

georgianbay.ca



Women in Biology Lecture Series



Continuing on in AFS-OC's lecture series featuring "Women in Biology", the Executive Committee hosted a presentation by Deborah Martin-Downs, CAO of the Credit Valley Conservation Authority (CVC) on May 17th, 2017. The Meet and Greet was held at CVC's head office in Mississauga, and Ms. Martin-Downs spoke about her career beginning from school and field biologist to where she sits now as the CAO of the CVC.

The social saw a relatively small crowd, but it was commented on by one of the participants as a comfortable sized group that made it easy for people to talk more openly and honestly about working in the environmental field, especially in regards to contract work, having a work life balance, and knowing your worth.

Participants included a great group of people from different perspectives (including employees of Conservation Authorities, consulting and engineering firms, etc., displaying a variety of work experiences (from students to 20+ years of experience).

Keep an eye open for future speaking and social events sponsored by your AFS-OC in 2018.

"On the Hook!"

"A mutant, all-female crayfish that has been found to clone itself and is taking over Europe."

<https://www.thestar.com/news/world/2018/02/06/this-mutant-all-female-crayfish-clones-itself-its-daughters-are-taking-over-europe>

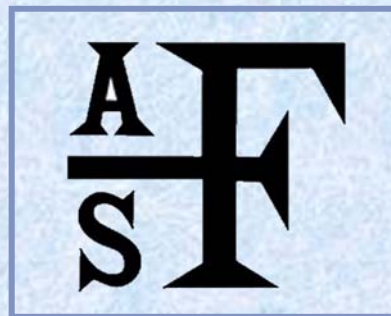


<http://www.artthesystem.com/2016/01/drone-captures-alaskan-sockeye-salmon-run-from-above.html?m=1>

Alaska Salmon Program release their drone video of spawning Sockeye salmon along Lake Iliamna.

<https://fisheries.org/2017/08/afs-journals-to-be-published-by-wiley/>

AFS joins forces with new publisher; members can now get online access to all 5 AFS journals starting January 2018.



<https://www.youtube.com/watch?v=RrHA1MxA4Hw>

"Behold the Water Wolf"

"State of Emergency in Frontenac islands due to Flooding".

<http://www.cbc.ca/news/canada/ottawa/frontenac-township-flood-preparation-1.4122139>





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Ontario's Adfluvial Smallmouth Bass

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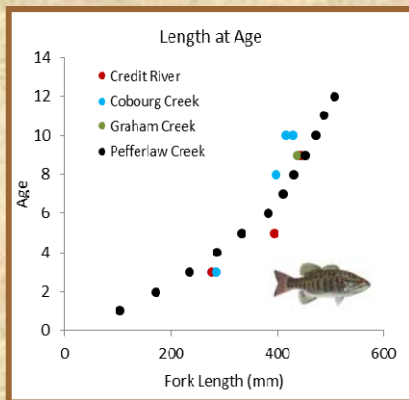


Figure 1. Length at age for adfluvial Smallmouth Bass. Pefferlaw Creek data is average total length at age (Robbins and MacCrimmon 1977). Credit River, Cobourg Creek and Graham Creek data is fork length at age (B. Morrison unpublished data).

concern. Many barriers block passage (e.g., dams), while others facilitate passage of jumping species. Consideration for non-jumping species has only recently become of interest as resources managers try to balance the negative aspects of fragmentation and invasive species with the benefits of connectivity for biodiversity, resiliency, and resource subsidies.

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ies as well (e.g. Bronte Creek, Credit River, Ganaraska River, Maitland River, and Sauble River). Migratory bass range from 3 to 12 years old and range from 277mm – 508mm (Figure 1).

Adfluvial Smallmouth Bass are underappreciated, yet an important life history variant supporting population biodiversity in Ontario. In large lake systems, adfluvial bass populations might be widespread and likely represent genetically distinct populations. As noted for more well-known salmonids species, fragmentation of habitat is a major



NWO-AFS (Northwestern Ontario Chapter) Flashback

AMERICAN FISHERIES SOCIETY, NORTHWESTERN ONTARIO CHAPTER

WISDOM: PERSPECTIVES OF A FISHERY BIOLOGIST
TOWARD EDUCATIONEggs, Apples and Fish - A
Biologist's Opinion

Tim Goeman
Minnesota Department
of Natural Resources
AFS Illinois Chapter Newsletter
Volume 7, Number 1 May 10 1993.

The fisheries manager watches the irate resort owner drive away from his office. The last two hours have not been pleasant. The resorter wanted walleye stocked in his lake. The manager's best efforts at explaining adequate natural reproduction, exploitation, harvest, year class variability, and recruitment seemed to fall on deaf ears. Finally, the resorter stormed out with a threat of going to the Governor. The manager wondered at the lack of progress fisheries professionals have made in communicating sound fisheries principles to the fishing public.

The manager's best efforts at explaining adequate natural reproduction, exploitation, harvest, year class variability, and recruitment seemed to fall on deaf ears.

Meanwhile, in a separate building only 100 yards away, the assistant fisheries manager has begun his fourth hatchery tour of the afternoon for school children. The batteries of eggs always intrigue the wide-eyed youngsters. The egg-take has been good this year. The hatchery is running at near-full capacity. Soon, millions of fry will emerge.

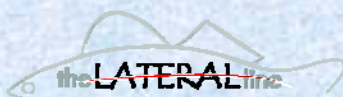
These scenarios are guaranteed to continue until fisheries professionals begin realistically assessing the long-term costs of the way we do business. What has the fisheries manager really com-

municated to his clientele when the most significant public relations effort of the year is the hatchery tour? The message conveyed is 1) that fish come from hatcheries, 2) that habitat degradation is so severe that naturally spawning populations are inadequate or no longer exist, and 3) that the long-term health of the fishery resource depends on hatchery technology. Fisheries professionals are quick to pontificate about the value of habitat protection, watershed management, and preserving genetic integrity of fish stocks. But when was the last time a school group was guided on a tour that emphasized habitat and the importance of this ecological component?

It's so easy to give a hatchery tour. It's convenient for everyone. It always gets rave reviews and it helps give fisheries program some visibility. The long-term costs, however, reach far beyond the mere dollars and cents of a cost/benefit analysis. I am convinced the real cost shows up year later when the child has taken ownership of his parent's resort, a poor year of fishing starts cutting into his profits, and he remembers his third grade field trip of years earlier. Is it really so amazing that the resorter will not believe the fishery manager's reasoning for not stocking fish?

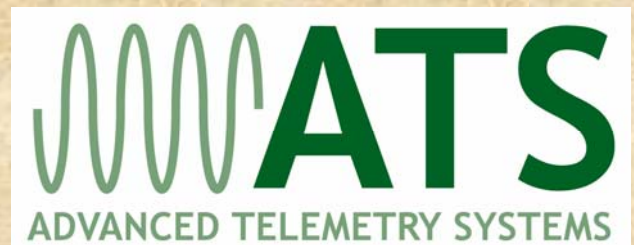
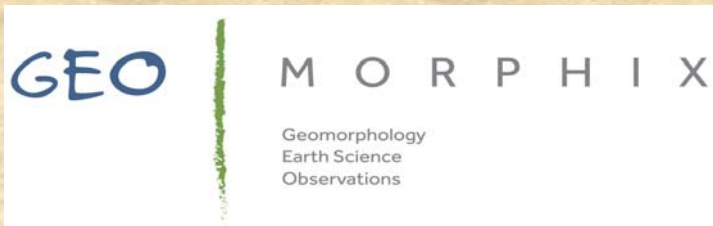
Well-managed hatchery and stocking programs do have a place in fisheries management, but only as they fit within a sound ecological plan that has fully considered the long-term integrity of the resource. Hatchery and stocking programs are not an excuse for habitat loss and poor fisheries management. Such programs merely serve as treatments for symptoms rather than remedies for the real problems.

At least three times during my short fisheries career of about 15 years, Leopold's land ethic has emerged in an effort to give new life to natural resource management. One reason his thoughts are still valid today is that most people are urban dwellers with little practical appreciation for natural and wild processes. The fact is, for most people, eggs come from the dairy case, apples from the produce aisle, and fish from the hatchery. The fisheries manager can change some this thinking, if we change the way we do business.



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