
**Recreational Fisheries Advisory Council
Minutes of the 2015 RFAC Meeting**

Area 4

Date Prepared: January 5, 2016

Digby, Yarmouth, Shelburne and Queens Counties

The RFAC meeting for Area 4 was held on November 2nd, 2015 at the Lions Club Community Center, Liverpool, Nova Scotia. Nova Scotia Department of Fisheries and Aquaculture, Inland Fisheries Division Staff present were Alan McNeill, Manager, Fisheries Management, Mike McNeil, Supervisor of the McGowan Lake Fish Hatchery, Jason LeBlanc, Fisheries Biologist, and Andrew Lowles, Sportfish Development Officer. There were nine people in attendance. The meeting was chaired by Jason LeBlanc.

Licencing Update

Al provided licence sales data for 2014 and past years. Total general fishing licence sales in 2014 were 64,126 which was a four percent decrease from 2013 and an increase of over 28% of 2005 sales. Salmon licences were down slightly in 2014 at 2,067. Salmon licence sales have been very consistent between 2,000 and 2,500 since 1998, reflecting the popularity of this fishery in spite of the fact that many rivers are currently closed to angling.

2015 Regulation Changes and Proposed Changes for 2016

Al reviewed the 2015 regulation changes from page 3 in the Angler's Handbook. Al also reviewed the proposed changes for 2016 on page 5.

The following lakes were identified as possible Special Bass Management Areas: Banook, Micmac, Morris and Porters Lakes, Halifax County, West Horseshoe Lake, Shelburne County, Ponhook and Molega Lakes, Queens County and Kemptback Lake, Yarmouth County.

Jason identified only Morris and Kemptback Lakes were suitable for Special Bass Management Areas status. The following regulations were implemented for 2105: Season: Apr 1 to Dec 31, bag Limit 3 bass, maximum length 35cm (13.8 in.), except from May 1 to June 15, when no smallmouth bass may be retained.

Vinal Smith asked if Ten Mile Lake should be included. Jason replied it used to be but the lake is somewhat anomalous.

David Dagley asked if the Division is still transferring \$100K to DNR enforcement. Al commented that enforcement is now with the Department of the Environment and we are reviewing it.

Upper Medway and Mersey Rivers: Reduce bag limit for trout on waters within the land formerly owned by Bowater-Mersey Inc. In RFA 4 and RFA5 include regions of the upper Medway and upper Mersey

Rivers. Insufficient data have been collected in this large area to consider changes to regulations. Work continues on access issues, lake surveys were done on Crocker and Hendry Lakes.

Sportfish Habitat Fund Report

The Nova Scotia Sportfish Habitat Fund received a budget of \$303,458 in 2015, based on 2014 licence revenues. Twenty-four community groups were involved in 2015. Total funds to Adopt-a-Stream were \$280,000 in addition to \$100,000 in funding from the Nova Scotia Liquor Commission. Two other projects received funding in 2015; \$16,000 to the West River Sheet Harbour Lime doser project, and the Medway River Salmon Association received \$1,227 to repair two trout incubation boxes and fix a headpond dam which supplies water to the incubation boxes. Al reminded those present that the Sportfish Habitat Fund provides money to projects that improve angler access to the resource such as boat ramps and fishing piers, and encouraged anglers to review the on-line application and consider submitting projects before the March 1 deadline.

Horace Macpherson spoke about the project completed by the Medway salmon Association, rebuilding the salmon incubation boxes and re-planking the headpond dam.

Al also provided the names of the eight groups which qualified for funding under the 2015 Atlantic Salmon Conservation Fund for Nova Scotia. The call for proposals for 2016 closes on Dec 18, 2015. The Fund has done well in recent years, and as a result, Nova Scotia's share of available funding for 2016 is \$77,225. This is a reduction from 2014 as there are several multi-year projects initiated in 2014.

Interested groups can visit the website: www.salmonconservation.ca for details and to find out which projects were funded in 2015 and earlier.

Review of 2015 Programs and Field Work

Hatchery Report / Trout & Salmon Enhancement

Mike McNeil, Supervisor of the McGowan Lake Fish Hatchery, gave a brief overview of the provincial fisheries enhancement programs. The Dept. of Fisheries & Aquaculture operates three hatcheries; Fraser's Mills Hatchery in Antigonish Co., McGowan Lake Hatchery in Queens Co., and Margaree Hatchery in Inverness County. Spring and fall stocking lists were made available and Steve noted they are both on the Departmental web site, <http://novascotia.ca/fish/sportfishing/hatchery-stocking/>

In an effort to sustain the very popular recreational trout fishery, each spring the hatcheries stock approximately 200 lakes across Nova Scotia. Most of these are stocked with brook trout; additionally, over 20 lakes are provided with Rainbow trout from the Fraser's Mills Hatchery. In recent years much of this stocking activity has been directed to lakes in populated centers, providing recreational angling opportunities to an increasingly urban population and helping to maintain an important sportfishing industry. There are now over 25 wheelchair accessible, barrier-free facilities in Nova Scotia. Most are located on sites that receive trout from the hatcheries. Last year trout were made available to support 63 of the Department's Learn to Fish projects. As well, approximately 50 trout fishing derbies, sponsored by volunteer organizations, received trout from the hatcheries.

Fall Trout Stocking

Trout stocking with finger-sized juvenile trout is carried out in October and November. Lakes stocked in the fall are typically more remote than the spring-stocked lakes, but still have significant fishing pressure. These fish are presumed to grow for a season before becoming large enough to contribute to the creel. Approximately 175 lakes receive brook trout in the fall. Most brown trout stocking takes place at this time of year. The majority of brown trout stocking takes place in rivers where the fingerlings have access to estuaries where they can grow quickly.

Winter Trout Stocking

Nova Scotians are encouraged to remain active all year and many do so by getting out and enjoying time ice fishing for trout. Twenty lakes, including the Bras d'Or Lakes, are stocked with either rainbow or speckled trout in November and December, in anticipation of the winter season. Several other lakes which are stocked in the spring remain open year round, as well.

Atlantic Salmon Enhancement Program

2015 was the ninth year that the Department of Fisheries & Aquaculture has been working to support the Atlantic salmon and enhance the fishery. On Cape Breton Island, the Margaree Hatchery provided fall parr for Margaree River, Baddeck River and Middle River. It is unlikely that the fall salmon season on the Middle River and Baddeck River (both stocked 2010-2015) would have been permissible without the stocking program. On the mainland, Fraser's Mills Hatchery provided fry and fall parr for West River Antigonish. With assistance from many volunteers, successful broodstock collections took place on for West River Antigonish, West River Pictou (Fish Friends), Middle River, Baddeck River, Mabou River and Margaree River. In addition to providing brook trout for local watersheds and selected sites on Cape Breton Island, the Margaree hatchery typically supplies 130,000-160,000 parr each fall and 30,000-40,000 Atlantic salmon smolt in the spring, for the Margaree River.

Broodstock salmon from Baddeck River, Middle River, Mabou River as well as the Margaree River are now held at Margaree Hatchery to provide eggs for next year's production. Broodstock from West River Antigonish and West River Pictou (Fish Friends) are held at Fraser's Mills Hatchery.

Mike thanked the Bluenose Coastal Action Foundation for their help. An angler asked if we have ever checked the survival rates of stocked trout. Mike replied no, we depend anglers to report on the success of the stocking program.

Horace asked if we are at full production capacity at all of our hatcheries. Mike replied yes, McGowan Lake brings in 1.5 million eggs each year.

Dave Dagley asked about the size of rainbow trout in Hidden Hills Lake. Mike replied about ten inches. He also asked if we are still stocking sea trout in the Jordan River. Mike said we are. Dave thought we were wasting our time feeding the pickerel.

Mike asked for opinions from others on the issue, the department stocks about 6000 – 8000 trout there.

Mike also said we stock 6000 brown trout in the Mersey and Victoria Lake from adults we spawn at McGowan Lake.

Community Based Enhancement Facilities

A number of community-based fishery organizations operate small scale hatcheries or incubation boxes. Trout eggs are delivered to these in late winter. The fry hatch in early spring and when they have developed to the point where they are able to begin feeding on their own, they are released. This usually takes place in early to mid-May. Over the last few years there were operations in New Waterford, Port Morien, Coxheath, Isle Madame, Mulgrave and Tatamagouche.

Fish Friends

Fish Friends is an educational program, sponsored by the Nova Scotia Salmon Association and maintained through the hard work of many dedicated volunteer organizations. Aquarium units are set up in participating school classrooms and teachers are provided with educational material about the trout and salmon life cycle. Children get to watch the eggs hatch, and the fry develop. They feed them for a few weeks and then release them into a local stream. Last year the hatcheries were able to provide eggs to approximately 70 Fish Friend projects.

Promotion and Development Programs

Sportfish Development Officer, Andrew Lowles reviewed a number of provincial programs in place to promote fishing within Nova Scotia. There are two demographics that are underrepresented in Nova Scotia's recreational angling community: young people and women; and are targeted through the delivery of two programs. The Learn to Fish (L2F) Program focuses on exposing young anglers across the province to recreational angling. This year was the largest year ever for the Learn to Fish Program, seeing more than 2,300 students, 500 more students than previous years. The program was delivered in school classrooms, but has been extended to include high school students. Again this year, Andrew visited IWK Children's Hospital, Scouts and Guides Canada, and 4-H groups. As last season's effort was lacking representation from certain areas of the province, additional effort was made to more evenly spread across the province this year. This was successfully achieved with increased representation from RFA 1 (Cape Breton) and RFA 4 (Digby, Yarmouth, Shelburne and Queens)

Andrew wants to thank the provincial hatcheries; Frasers Mills and McGowan Lake, for their efforts in meeting the increased stocking demands associated with the growth of the program. Andrew also wants to thank the Hants West Wildlife Association and Mark Weare, along with his volunteers for their continued support of the program.

Becoming and Outdoor Woman (BOW) was again a great success. Andrew, Along with Hatchery Technicians, Marielle Turner and Rebecca Blank, instructed a number of modules at the fall BOW program. Andrew was the key speaker on Saturday evening, presenting "Fishing Across Nova Scotia" to an enthusiastic audience. Andrew thanked Don Taylor for his continued support of the program and volunteering his time. In February 2016, Winter BOW will happen on Cape Breton. The Ice Fishing portion of the program will be increased to include a 3rd session as well as Saturday evening Fly Tying.

Andrew has worked on a number of promotional programs and projects this year. The provincial fisheries website has been updated. The Inland Fisheries Division was represented at the Sport and RV Show in Halifax and at the Truro Agricultural Expo. In the spring of 2016, the Department is considering attending the Toronto Sportsman Show. Andrew has taken over the Sportfish Registry and intends to simplify the submission process and create a visible online records page.

A review of licence structure for all Canadian provinces was completed. From the review the Department is considering a number of options for future licences in Nova Scotia. Proposed changes would include an increased minimum age from 16 to 18 years at which a licence is required. The proposal of a family licence has been considered. This would enable two adults to purchase a licence at a reduced rate in efforts of promoting a more family friendly recreational activity.

Andrew attended the Canadian Council for Safe Boating in Halifax in September. The conference was very well done with worldwide representation. Given the number of drowning fatalities in the Maritimes this year already, a strong approach to messaging needs to be actively taken. There are five messages that need to be spread (taken from CSBC): Wear a PFD or Lifejacket, Don't Drink and Boat, Take a Boating course, Be Prepared, Both You and Your Vessel and Be Wary of the Dangers of Cold Water Immersion.

A ten minute condensed version of the video "Cold Water Boot Camp" was shown.

An angler asked if any L2F events were held in Queens County. Andrew said one was held at Wickwire Academy.

Warmwater Fisheries and Aquatic Invasive Species Initiatives

Fisheries Biologist, Jason LeBlanc provided an overview of aquatic invasive species (AIS) initiatives and field projects in the area. Aquatic invasive species initiatives generally fall into the following four categories: (1) outreach and education, (2) legislation and enforcement, (3) research and monitoring, and (4) collaborations with other agencies and organizations.

The Department utilizes various means to educate and inform the public about AIS issues such as the Anglers Handbook and our website. Additionally, simple messaging is incorporated into youth programs such as Learn to Fish.

Several pieces of legislation are in place or have been implemented in recent years to minimize the incidence of illegal introductions of AIS in Nova Scotia (eg. Nova Scotia Live Fish Possession Regulations <https://www.novascotia.ca/just/regulations/regs/fclivefish.htm> , the Maritime Provinces Fishery Regulations). Now, the newly passed Federal AIS Regulations provide additional capacity to manage species which are listed in these regulations. The regulations provide a suite of tools to prevent new introductions and/or manage their spread. They are designed to be "enabling" and the focus will be on high risk species and geographic areas. These tools provide federal/provincial/territorial governments authority to act to address AIS in jurisdictions where they manage the fishery. These new regulations can be found at <http://www.dfo-mpo.gc.ca/science/environmental-environnement/ais-eae/AISRegulations-eng.asp>

Research and monitoring activities play a key role in understanding and documenting the negative impacts AIS can have on native fish communities. Several projects have been completed in recent years including two funded by the Freshwater Fisheries Research Cooperative. The first documented trophic changes resulting from introductions of smallmouth bass and chain pickerel which shows that both species, following introductions to new lakes, occupy the highest position in the food chain. The second project took place in eastern Nova Scotia and focused on changes in fish diversity resulting from introductions of chain pickerel. Additional field work took place in the Jordan River watershed where chain pickerel are now well established and have profoundly impacted the trout fishery. A mitigation

project continued on Cannon Lake, Queens County in collaboration with Kejimikujik National Park. This project is an investigation into the population status of smallmouth bass (and resident native species) in the lake as well as assess the threat of smallmouth bass to the freshwater ecosystem of Cannon Lake and evaluate the risk of invasion to Kejimikujik National Park and Upper Mersey River watershed. An electrofishing boat in combination with fyke nets and angling have removed approximately 232 smallmouth bass thus far. Preliminary data suggests that species richness has thus far remained constant and that continuing removals of smallmouth bass will be important. The project is scheduled to continue in 2016. Another AIS control project utilizing the electrofishing boat is underway on Hebb Lake, Lunenburg County in conjunction with the Bluenose Coastal Action Foundation and the Atlantic Whitefish Conservation and Recovery Team. This project focusses on removing smallmouth bass which are well established in the lake and newly introduced chain pickerel. Both species drastically reduce the recovery potential of endangered Atlantic whitefish. The feasibility and efficiency of targeted removals and multiple pass depletion estimates using the electrofishing boat are being assessed as part of this project and work will continue into 2016.

Tournament angling for smallmouth bass continues to be popular and provides an excellent opportunity to collect data on bass population characteristics, angler catch rates and effectiveness of special management areas where they have been implemented. Fifty-one events were permitted under the Competitive Fishing Policy in 2015 of which four tournaments were sampled by Department staff this field season. The sampled lake were Vaughan Lake, Yarmouth County, Raynards Lake, Yarmouth County, Panuke Lake, Hants County, and Shortts Lake, Colchester County.

An angler asked if we can kill all the pickerel in the Jordan River. Jason said it was not possible; there are too many and they are spread throughout the system. There are no pickerel in Jordan Lake yet as far as we know, but the risk is high for someone to throw a pickerel over the dam into Jordan Lake.

Dave Dagley asked what dates were sampled for bass in Cannon Lake? Jason replied June and September. Dave though the trout may have vacated the lake during those months.

Coldwater Fisheries

Al McNeill, Manager, provided an update on the 2015 field activities related to speckled trout. Assessments were conducted to evaluate angler catches in two sea run trout fisheries on the East River of Pictou. A creel survey was also conducted in the upper Mersey watershed and this survey. Staff assisted researchers involved in Freshwater Fisheries Research Cooperative Projects. License stub data has been collected since 1966 and has been used to evaluate trends in total catches of different species. Since the implementation of Special Trout Management Areas a trend that reflects an increase in catch has occurred. Special Management Areas commonly include regulations to restrict harvest and require anglers to practice catch and release. The promotion of catch and release is believed to have benefitted the trout fishery and more anglers are releasing more of their catch than ever before. A concern that have been raised by anglers is the diverse set on regulations on some of the sea trout fisheries under Special Management. The Inland Fisheries Division plans to provide a more consistent approach to some of the sea trout fisheries under Special Management. These will be included in the 2016 anglers handbook at the following link: http://novascotia.ca/fish/documents/Anglers_Handbook_2016.pdf

The Pictou County River Association recommended that special regulation be implemented for the East River of Pictou to improve the catches of sea run speckled trout. This system is under a delayed opening

and with the assistance of many volunteers a total of 80 trout were tagged prior to the opening of the angling season on 15 May. Between 15 May and 8 June, anglers were counted and interviewed to measure activity and their catch at popular angling sites. Estimated total angler effort spent on the East River was 2013 hours and resulted in the harvest of 122 speckled trout. The population estimate for sea run speckled trout was about 500 fish. Minimum exploitation rate was estimated at 30% for the season. Twenty-nine percent of the angler catch of speckled trout was longer than 35cm in East River. In comparison the percentage of large trout (>35cm) caught in a regulated fishery in Antigonish Harbour was 64% in 2006 and 53% in 2007. The percentage of large (>34cm) sea trout caught in River Denys Basin was 17 in 2008 and 20 in 2010 prior to regulatory changes to reduce harvest. Differences in catchability of brown trout and speckled trout indicate that brown trout are much more difficult to catch than speckled trout and the population of brown trout in the East River is increasing. This study or a creel survey will be repeated in 2015. Reports on the East River of Pictou are available at the following link: http://novascotia.ca/fish/documents/special-management-areas-reports/East_River_Pictou_Sea_Trout_Fishery_2014.pdf

Colin Buhariwalla, has studied striped bass on the Mira River over the past two years and is now conducting a similar project on the East River of Pictou and Pictou Harbour. Striped bass in Northumberland Strait are located at the Northern end of their North American Distribution that extends as far South as Florida. In order to survive bass must seek out warmer waters in winter and that usually requires stripers to move into freshwater locations as saltwater cools to below zero to temperatures that are lethal to stripers. The Nova Scotia Power Trenton Plant produces a warm water outflow that discharges directly into the estuary of East River Pictou. Many striped bass inhabit this location during the cold winter months. A shut down of the Trenton plant in January 2013 resulted in the death of many striped bass from cold shock. Approximately 100 bass were collected and sent for genetic analysis. The purpose of the current research project is to determine if an additional spawning population of striped bass is present in the Northumberland Strait. The report on the fish kill associated with the Trenton Power Plan is available at the following link: http://novascotia.ca/fish/documents/Striped_bass_mortality.pdf

Concerns were raised at three RFAC meetings in 2012-14 regarding the potential removal of gates that reduced vehicle access to lands formerly controlled by Bowater-Mersey. A recommendation was made to reduce the bag limit on trout so that the potential increased in angler effort would not result in over-harvest of the trout resource. Information on the trout resource in this region is limited and in response the Inland Fisheries Division initiated efforts to collect baseline data on this fishery. Preliminary assessments using a creel were limited due to access as some of the gates/barriers were still in place. Access may be improved in the near future and as a result plans are to work with the Mersey Research Tobiotic Institute to undertake future assessments to evaluate the fishery in this region. Another objective will be to increase awareness about the importance of reducing the spread of invasive species, smallmouth bass and chain pickerel.

In conclusion, trout populations have been impacted by habitat stresses, increased competition, & over fishing. Special Management Areas are one way of improving and sustaining the trout resource in some areas. Variation in regulations is an issue and a more consistent approach has been presented and will appear in Anglers Handbook 2016. The Inland Fisheries Division will strive to: maintain and improve license sales and the value of the sport fishery, improve catch rates and size of catch in Special

Management Areas, and increase opportunities for anglers (i.e., winter fisheries for specked trout). We hope to continue to improve our community/angler involvement and support for fishery initiatives.

Freshwater Fisheries Research Cooperative

The Freshwater Fisheries Research Cooperative (FFRC) was established several years ago to facilitate applied research with universities. This initiative was set up to address fisheries management questions and address the research interests of anglers and the Inland Fisheries Division. In 2015, a total cash investment of 42k dollars was made toward FFRC projects and a total in-kind was 107k dollars. In-kind contributions were associated with labour, supervisory, and equipment from partners. In 2015, the following four FFRC partnerships received funding: 1) Evaluation of stream restoration, Kris Hunter, St FX University, 2) Impacts of Aluminum toxicity on salmon and trout, Dr. Shannon Sterling, Dalhousie University, 3) Striped Bass tracking in Pictou Harbour River, Colin Buhariwalla and Dr. Mike Dadswell, Acadia University, and 4) Evaluation of DNA of speckled trout in small streams in Annapolis Valley, Dr. Daniel Ruzzante, Dalhousie University.

Kris Hunter, Saint Xavier University, 2015 was year five of a ten year study on water chemistry, habitat and electrofishing results was be assessed to evaluate the impacts of commonly used in-stream restoration initiatives to improve habitat for trout and salmon. For the first five years the eight sites were monitored on an annual basis to assess habitat and fish populations. In year six (2016), three of the eight sites will be restored and monitoring will continue for another five years post-restoration. Long term studies are needed to evaluate annual natural fluctuations in order to obtain a true picture of the impacts of restoration.

Dr. David Cone, St Mary's University, was formerly funded under the FFRC and continues to collect information from anglers and produce brochures on common sportfish parasites that inhabit lakes and rivers throughout Nova Scotia. Five brochures on the black spot, gill maggot, Diphyllbothriasis (gut parasite), gyrodactylids (external parasites), and the yellow grub parasite have been developed. Brochures are used to inform and facilitate the collected of information from anglers on the distribution of common parasites. Brochures are available at the following link:
<http://novascotia.ca/fish/sportfishing/resource-management/publications/>

Colin Buhariwalla and Dr. Mike Dadswell, are undertaking a striped bass tracking project in Pictou Harbour and Northumberland Strait. This project is a part of the much larger Ocean Tracking Network.

Dr. Daniel Ruzzante, Dalhousie University, DNA of speckled trout from 16 sites in 14 streams on North Mountain, Annapolis Valley, was assessed. The purpose will be to evaluate populations upstream and downstream from barriers and assess the how different populations are based on their proximity from one another. Another aspect of this project was to compare the estimates of the number of brook trout in streams using electrofishing census and DNA techniques. Report is available at the following link:
http://novascotia.ca/fish/documents/Trout_genetics_study.pdf

Dr. Shannon Sterling, Dalhousie University is evaluating the toxicity levels of Aluminum and PH in a number of streams in the Southern Uplands of Nova Scotia. The information to be produced by this survey is important for planning the initiatives to restore wild salmonid populations, such as terrestrial liming, habitat restoration and increasing habitat connectivity. The purpose is to identify streams in the Southern Upland regions that have high aluminium levels during the spring and summer - key months

for sensitive life stages of salmon and trout. This projects is part of the West River Sheet Harbour Project where a lime doser is in place to improve water quality and acidity levels.

John indicated that the Pony Lakes had good fishing with large fish. Dave Dagley said catches on Five Mile River are high in April after it is stocked.

Discussion/Agenda Items from the Floor

There was some discussion about electronic licences. Al indicated we would be able to collect better data than the current voluntary mail-in system. Horace MacPherson indicated he would still like to see anglers coming in to the store to purchase a licence.

The meeting adjourned at 8:45pm.