NORTH SHORE
Steelhead
REPORT

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The First One

By Keith Ailey

Photo: Keith Ailey & his daughter Charlotte with her first steelhead.

Inside This Issue

It is May 1984, and I am fishing for the small rainbow trout that inhabit the creek near my house. I am dunking worms, working an undercut bank on the outside of a deep bend in the river where I always seem to catch a few. The rainbow that inhabit these waters barely average six inches in length but they are willing biters. Some days I can catch dozens of them. I don't keep any and I'm quite sure I am catching the same fish often, but this is my favourite thing to do. Sometimes I use flies, sometimes spinners, but after a rain, nothing beats a can of garden worms. I have already caught and released a handful of these tiny fish when I get caught up on the roots that hang into the run well below the surface of the water. I know the feel. Unlike the tap-tap-tap of the trout, the roots always give a bit and then pull back with the current. The result is always the same… I have to grab the line, snap it, and retie. I bet there are a dozen of my hooks on that root wad. This time, as I start to wrap the line around my hand in order to break it, it suddenly shoots upstream and a huge fish leaps clear of the water, breaking my line and leaving me in shock. What the heck was that? Shaking so much I can barely thread the line through a new hook I eventually get retied and back in the water.
Again my line goes tight, but now I instinctively pull back, ready to haul out one of those big fish. Unfortunately, the result is the same. With my drag set too tight, I am helpless as a second giant fish snaps my line with just the slightest effort. I spend the rest of the day waiting for one more chance, but it doesn't come.

I know I'll never be interested in those baby rainbow trout again. Now that I've had a taste, all I can think about is these new river monsters. I spend my days drawing pictures of giant trout instead of taking notes at school. Every afternoon, when the final bell rings, I run home, grab my fishing gear and head back to the same spot on the river. But the water is low and clear now and days go by without any sign of those big fish. Days turn into weeks and I search in vain but remain determined. Then it rains. The river gets dirty again and the water level rises.

When the showers pass, I am again headed back to the bend where I encountered the first two big ones. I have been telling tales of the giant fish I discovered in the small creek and I have convinced a couple friends to fish with me now, but I know they don't really believe my story. I'm still not exactly sure what we are chasing but we figure they are the big mommas of all our little rainbow and we call them "spawners." I want to hook one more just so my buddies know I'm not lying. Then it happens, and pure chaos ensues.

Finally, I have hooked into a giant fish and this time I have witnesses. There is yelling and running, jumping and splashing. I have my drag set too loose this time and the fight goes on for seemingly forever. My friends are absolutely losing their minds. One is knee-deep in the river chasing the fish while the other is grabbing my line near the tip of my rod because I'm not bringing the fish to shore fast enough. It is pure pandemonium. Somehow, we do not lose this fish. It hits the shore and we pounce on it like three bears. I have finally caught a steelhead and with it, a fever that is still with me to this day.

That was my first steelhead season. Dozens of days on the water and just a single fish. So I certainly understand exactly how those young kids feel when they see us battling migratory steelhead down at the local river but they struggle to hook a fish. I always do my best to offer some tips and maybe share some tackle because, once they eventually hook a steelhead, they'll remember that first one for life.

About the author: *Keith Ailey is a Visual Arts teacher at Superior Collegiate & Vocational Institute where he volunteers his time with the Outdoors Club and Travel Club as well as the cycling, skiing and XC running teams.*

2019 Film Festival

The North Shore Steelhead Association proudly presented the annual Fly Fishing Film Tour at the Thunder Bay Community Auditorium on Saturday, February 16, 2019. With 175 showings across 8 countries to over 50,000 enthusiasts, this event caters to all anglers and fly-fishing enthusiasts, conservationists, nature lovers, film buffs, and anyone suffering from winter fever.

The films showcased a "bucket list" of locations from Alaska salmon fishing, B.C. steel heading and tropical adventures on the Great Barrier Reef to a female guide's quest to realize her dreams on a tranquil stream in the American mid West.

Many thanks to Al Muir and his committee of Terry Kosolowski, Sean Murray, Jim Donaldson, Russ Desjardine, Dave Nuttall, Neil Pettigrew and Wes Bender for a job well done. Also, thanks to Gord Ellis for being the Master of Ceremonies.

The event has grown to over 500 people entertained by the F3T videos, vendor displays and even some local video content. To increase attendance and highlight North Western Ontario, the NSSA film committee announced "The Reel Video Contest". Interested videographers are encouraged to submit a short video featuring NWO fishing or adventure with the winning entry shown at next year's film night and receiving a $1,000 prize. For more information and contest rules, visit our NSSA site.

Proceeds go to the North Shore Steelhead Association's creek, fish and habitat restoration projects. (McIntyre bank stabilization project at Central Ave., Birch Beach Creek, McVicar's Creek, George Creek, and the Rainbow Trout assessment projects) The Film Festival committee is already looking forward to next year, and hopes to see you all at the Thunder Bay Community Auditorium on February 15th 2020.

Black Bay Fishery

Rainbow trout (AKA Steelhead) were introduced into the Lake Superior ecosystem in the late 1800's. Since the 1920's, rainbow trout have been documented as established and naturalized in Black Bay tributary streams, and have supported popular stream fisheries for generations of anglers. Populations of rainbow trout in Black Bay streams such as the Wolf River, Black Sturgeon River, Portage Creek and Coldwater River/Spring Creek have supported healthy populations of wild rainbow trout for over 100 years, as well as high levels of angler participation in these fisheries. Rainbow Trout remain a popular gamefish throughout its' range in Lake Superior and tributaries, populations in the Canadian waters of Lake Superior are entirely wild and self-sustaining. Until recently, Co-operative Angler data and angler reports demonstrated that rainbow trout populations in Black Bay were healthy, and angler satisfaction with these fisheries was considered to be very good. In recent years, populations of rainbow trout in Black Bay streams have fallen dramatically. Angler reports and Co-operative Angler data indicate that number of fish caught has dropped greatly. Streams that once produced large populations of rainbow trout have seen dramatic drops in population. Our goal is to take steps that will aid in the recovery of these fisheries.

There are 2 problems that need to be addressed for a recovery of Black Bay rainbow trout:

- Low numbers of adult rainbow trout remain in the spawning population of streams which drain into Black Bay
- Low number of rainbow trout smolts are surviving in Black Bay and returning as adults to the streams that enter Black Bay (from smolting and leaving their stream habitats for Black Bay, primarily at age 2 years, until returning to these streams as adults on their first spawning migration

How can we help improve this situation ? First, we must limit harvest pressure on the remaining stock of adults, to ensure they remain in the fishery and spawning population. Second, we must ensure juvenile production is maximized so that larger numbers of young rainbow trout emigrate to Black Bay. This can be achieved by ensuring the maximum possible number of adults survive to spawn and produce young of the year. 2 years after being born, juveniles that have survived their stream perils will smolt and leave their stream habitats to enter Black Bay. Higher numbers of smolts will translate into proportionally higher numbers of surviving adults that return to spawn, building the total number of adults in the spawning population. Both these goals can be achieved by a change in current harvest regulations!

Currently, all Black Bay Streams have a harvest regulation for rainbow trout of 1 fish (of any size) per day and in possession. In the McIntyre and Neebing river systems of Thunder Bay, severely degraded fisheries were rehabilitated by the application of a minimum harvest size restriction of 69 centimeters (27.1 inches). Only 1 fish greater than this size may be possessed at any time. Through life history information collected by anglers (scale sample age analysis and life history determination), it was determined that this size restriction allows most adult rainbow trout to spawn at least once before being eligible for harvest. The vast majority of adults can spawn multiple times before either attaining this size (they grow very slowly after spawning the first time) or dying naturally due to age or injury, before reaching this size. This regulation was applied to the Neebing and McIntyre rivers in Thunder Bay, and the recovery of rainbow trout populations has been spectacular.

Our Proposal: A change in regulation has proven very successful in rehabilitating stressed populations in the Neebing and McIntyre river systems in Thunder Bay. We propose the extension of this regulation (harvest of 1 fish greater than 69 cm, daily and possession) to all streams which drain into Black Bay, as an initial step in securing the recovery of rainbow trout in Black Bay tributary streams.

The time to act is NOW. Please help us by supporting a change in regulations for Black Bay rainbow trout.

Tom Whalley

Tom Whalley, *President, North Shore Steelhead Association*

Using the Percent of Repeat Spawning as a Method to Evaluate the Status of Steelhead Populations in Ontario Tributaries of Western Lake Superior (2018)

By Jon George (jgeorge@tbaytel.net)

A healthy wild steelhead population in Ontario waters of Lake Superior exhibits a wide variety of life history characteristics (number of stream and lake years, age at maturity, migration patterns and spawning time) plus maintains a repeat spawning rate of > 50% over one generation (four years). This enables individual tributary populations to maximize recruitment of juveniles and maintain the integrity of localized adaptations.

The "Swanson Index" uses the repeat spawning rate to index the annual mortality and an angler harvest rate from an adult steelhead population. A 50% repeat spawning (survival rate) = 50% total mortality. Annual natural mortality in Lake Superior has been calculated at 30%, therefore fishing mortality would be 20%. It is recommended that fisheries managers maintain harvest levels at or below 20%. (Swanson 1885, Clarkson and Jones 1997)

Applying Swanson's repeat spawning index to the ten tributaries listed in Table 1, most populations are well below the acceptable harvest levels. The exception being small tributary streams on Lake Shore Drive.

Thunder Bay tributaries (Neebing and McIntyre Rivers and McVicar Creek) not only have low harvest but an estimated adult population size greater than 2000. (Table 1) This is mainly the result of multiple repeat spawners and the high survival of the 2013-year class of juveniles.

Adult steelhead populations in Nipigon Bay had a high repeat spawning rate over the past four years. This in combination with multi-year survival of adults and sufficient annual recruitment of juveniles indicates a low angler harvest and healthy steelhead populations.

Black Bay tributaries (Wolf R., Coldwater R., Black Sturgeon R. and Portage Cr.) express high repeat spawning rates but have poor recruitment of juveniles. If we use Portage Creek as a Black Bay "index stream" there has been a 90% decline of adult steelhead over the past ten years. Changes in the Black Bay fish community are likely responsible.

Literature Cited

Clarkson, J. and M.L. Jones.1997. A method to estimate an Index of Mortality based on proportion of repeat spawners in rainbow trout (Oncorhynchus mykiss) population.

Swanson, B. 1985. Pikes Creek/Lake Superior: population dynamics, fishery and management alternatives. Wisconsin DNR. Management Report 125, 29p.

Collecting data, Portage Creek

Table 1. Repeat Spawning, Mortality and Population Size

Tributary	Repeat Spawning*	Total Mortality	Harvest Rate**	Population Size***
Whitefish R. (Thunder Bay)	58%	42%	12%	
Neebing R. (Thunder Bay)	59%	41%	11%	2330+-1504
McIntyre R. (Thunder Bay)	63%	37%	7%	3035+-1655
McVicar Cr. (Thunder Bay)	66%	34%	4%	2484+-1519
Lake Shore Drive tribs. (Thunder Bay)	41%	59%	29%	
MacKenzie R. (Thunder Bay)	56%	44%	14%	700
Portage Cr. (Black Bay)	63%	37%	7%	144+-87
Jackpine R. (Nipigon Bay)	77%	23%	N/A	
Cypress R. (Nipigon Bay)	72%	28%	N/A	1600
Big Gravel R. (Nipigon Bay)	74%	26%	N/A	

* Four year average
** Based on 30% natural mortality (Swanson 1985)
*** Adult spawning population size for 2017 based on 2018 recaptures (Petersen estimate)

Note: Population estimate on the Neebing River is for the north branch only. The population estimate for the MacKenzie and the Cypress Rivers are from 2016. On the Jackpine, Cypress and Gravel Rivers the harvest rate is low and cannot be detected using this method.

Birch Beach Creek - Update

Rock pool installation

The NSSA continues to explore the opportunity to eliminate a perched culvert on the small stream located 35km east of Thunder Bay locally known as Birch Beach Creek. The remediation of this martial barrier will re-establish connectivity within the stream and provide better access to in-stream habitat.

Temperature monitoring indicated that this system has a year long temperature regime suitable for trout. Electrofishing done by the UGLMU of the Ministry of Natural Resources found 70 YOY in 30 meters of stream confirming the productivity of this small stream. A survey has been done and detailed drawings will be completed prior to obtaining approvals and permits.

This project is estimated to cost approximately 20,000.00 and to be done in the summer of 2019. It is hoped that a suitable funding agency can be found to reduce the cost of the NSSA.

Birch Beach Creek rock pool

Boulevard Lake - Current River

The NSSA is currently working with the City of Thunder Bay as it prepares for the rehabilitation of the Boulevard Lake dam, a revised Permit to Take Water, and a renewed operations plan that ensures the City's obligations under the Federal Fisheries Act are met.

The Executive of the NSSA is concurrently developing a Request for Proposals which will be used to solicit proposals from qualified companies to develop a strategic plan for the Current River that is composed of two parts:

Part 1. An action plan to accelerate the recovery of the cold-water fishery, included in which are fish passage issues, mortality rates, and recommendations for improvement which may or may not include the current fish ladder.

Part 2. An estimate of the potential economic impacts of the successful implementation of the Current River Urban Sport Fishery, identify community and corporate sponsors, and establish a budget and funding plan.

Meetings held with the City of Thunder Bay, and the MNRF have been productive and indicate that both willing to work with the NSSA to develop the Current River as an urban sport fishery.

The NSSA hopes to have the RFP completed by May 31, 2019.

NORTH SHORE Steelhead ASSOCIATION

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The NSSA welcomes your contributions, opinions and ideas.

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Causes and Consequences of Population Changes in Black Bay Steelhead

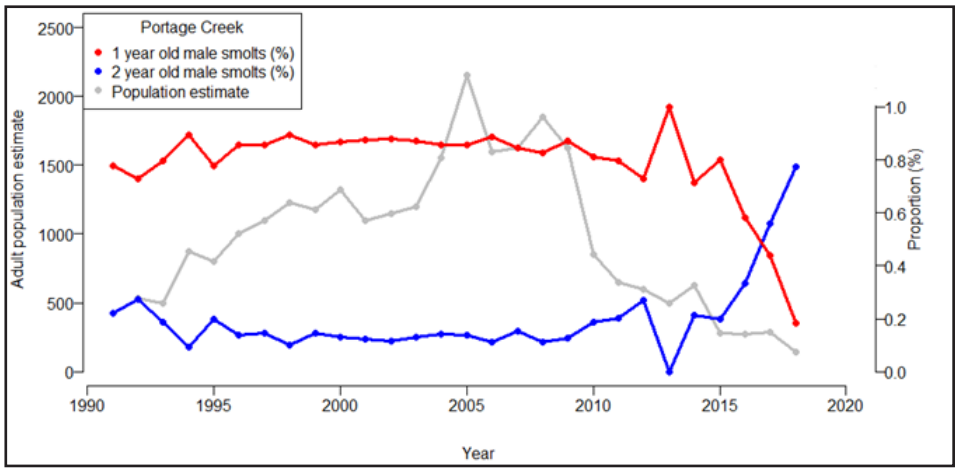
Steelhead have been present in the Great Lakes since their introduction in the late 1800's. Localized adaptations have allowed for each population to thrive, given the natural conditions with which they are presented. When faced with ecological change, a population may alter life history strategies to better adapt to new conditions.

We compared local adaptations from Steelhead in three of Lake Superior's North Shore tributaries and evaluated how life history strategies have changed in a population that has experienced significant ecological changes to better understand why certain life histories strategies are selected for given a particular set of ecological conditions.

Steelhead were angled, sampled and released during their annual spawning migration on the McIntyre River, Portage Creek, and the Jackpine River over multiple spawning seasons. Individual Steelhead were then categorized based on similar life history traits.

Portage Creek Steelhead life histories shifted after the closure of the fishery in 1994 from age 1 smolts with later maturation to age 1 smolts with earlier maturation. In 2007, the Portage Creek Steelhead population began to collapse, associated with a shift in life history towards age 2 smolts with delayed maturation.

By comparison, the McIntyre and Jackpine River life histories and population densities have stayed relatively stable over a similar time period. We are continuing to investigate the hypothesis that the Portage Creek population collapse and subsequent shift in life histories may be a consequence of changes in the Black Bay fish community which may have led to increased predation mortality of smaller (younger) Steelhead smolts leaving Portage Creek.




Norm Stieh


Ron Korkola

In Memory of Norm "Butch" Stieh & Ron Korkola

The NSSA will miss the participation of both of these fine fellows.

Mr. Norm Stieh was tireless in collecting scale samples from the McVicar creek which help establish the population estimate.

Mr. Ron Korkola was a current member of the Executive of the NSSA at the time of his passing. He was always ready to provide his insight and opinion on matters and freely took part in discussions.

Rest in Peace.

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