



NORTH SHORE Steelhead REPORT

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The Getaway

By Keith Ailey



Keith Ailey battles with a big brookie hiding under a massive log jam. (Photo by Terry Kosolowski)

For many of us, life in the twentieth century is crowded with so many obligations that it can be tough to slow down and appreciate life's simple pleasures. Between our family activities, career responsibilities and all those other little things

that fill up each day, indulgences like fishing are often put on the sidelines while we rush through life. That is why the weekend getaway is so important. We must make a conscious effort to carve out a little time to spend in nature for our mental, physical and spiritual health.

Spring is the season I tend to indulge the most and spend some extra time outside. My favourite activity is exploring North Shore rivers in search of steelhead on their migratory journey from Lake Superior. The harsh reality however, is that most of the time I invest is a patchwork of opportunistic interludes before work in the morning or between errands on the weekends. That's why, when the chance to get away and spend a few uninterrupted days on the river presents itself, I never hesitate.

Late last spring, a full weekend miraculously opened up on my calendar, providing the chance for one final steelhead adventure before the summer weather chased the last trout back to Lake Superior. A plan was formed and I joined my old friend Terry Kosolowski for a weekend visit to our favourite rivers east of Nipigon. We had rented a cabin just minutes from where we planned to fish, the forecast was favourable, and our cooler was stocked with refreshments. We had both been too busy to fish over the

previous week and had really built up quite a bit of anticipation for this expedition.

We left town on Friday after work and, as we passed several popular rivers along the highway, we couldn't help but notice that the usual parking spots favoured by steelheaders were oddly vacant. This was not a good sign. The first stop we made revealed why we had the entire north shore to ourselves...the water was low, warm, and the fish appeared to be gone. Even the suckers had moved out. Uh oh.

While we realize that there is so much more to these weekend getaways than just catching fish, the idea of getting skunked is still disheartening. However, on Saturday morning we awoke with fresh enthusiasm and determination to find some fish. We put some big miles on the wading boots and, by chance, we did find a few straggler steelhead hanging around, but nothing special. Late in the morning, we decided to explore a section of lower river we had not previously been able to access when the water was higher, and that's when things got unexpectedly exciting.

Scouring the deep holes tucked away below a series of massive log jams we found a pleasant surprise. Mixed in with the few dark steelies dropping back in this lower river were several silvery coaster brook trout, obviously fresh from the lake, taking refuge in the log jams. It was a thrilling discovery and we caught several beautiful fish before retiring for lunch. Eager to continue catching these surprise spring coaster brookies, I returned to the log jams after dinner, but the fish had vanished.

By Sunday, there was no denying summer had arrived. It was hot and sunny early in the morning but we were still willing to try our luck, hoping to find ourselves in the right place at the right time just as we had the day before. We packed up our gear, paid for our accommodations, and decided to make one quick stop on our way home. It was so hot we didn't bother with waders and just fished in shorts and t-shirts. The trout didn't mind, and, fully recovered from the rigors of spawning, several dark bucks obliged us with some gravity-defying aerials and epic battles. The final steelhead of 2016 were released, and, content with our successful weekend, we drove back to Thunder Bay already looking forward to the first getaway of 2017.

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Co-op Angler Program Update

The Co-op Angler program involves volunteer anglers biologically sampling their daily steelhead catches. It is a partnership between the Upper Great Lakes Management Unit of the Ontario Ministry of Natural Resources and Forestry (OMNRF) and the North Shore Steelhead Association (NSSA). The purpose of the program is to collect annual life history and population information on wild steelhead populations in tributary streams of Lake Superior. The science collected can be applied to managing wild steelhead stocks now and in the future.

Each participant receives a sampling kit (measuring tape, knife, scale envelopes and instruction sheet) along with a Scientific Collectors permit issued by OMNR. Steelhead anglers record the length, sex, and take a scale sample from each fish. In addition, steelhead in six tributaries are fin clipped and tagged. The fin clipping allows us to estimate the population size (mark / recapture or Petersen estimate). Tagging monitors movement patterns, stray rates, harvest and ageing accuracy. The sampling program is conducted in the spring (April to June) on mature adult steelhead in Lake Superior tributary streams. At the end of the season the data is collected by the NSSA. Life history strategies (stream years, lake years, age at maturity, number of spawning events and total age) are extracted from the scale samples. Data is then analysed and a report is published on the NSSA web site. The OMNRF and NSSA share the data and the cost for the program.

In the past, the sampling has been confined to tributary streams from Thunder Bay to Marathon. This year the program will include the Sault Ste Marie area.

Black Sturgeon River - Camp 43 Dam

The concern of the NSSA Executive continues to be the potential negative effects of allowing access for Sea Lamprey and other 'exotic' species to the vast Black Sturgeon River Drainage. As much as this issue has been debated, we remain concerned about the negative consequences that Dam removal may bring to fisheries in the Black Sturgeon drainage, Black Bay and Lake Superior.

Particularly, we remain concerned about the Sea Lamprey question. The Black Sturgeon River is a huge drainage with the potential to produce untold numbers of juvenile lamprey. Despite the established objective of "Protecting Great Lakes fisheries and inland waterways and meeting international obligations through continued sea lamprey control in the Black Sturgeon watershed", we remain concerned that now, and at any time in the future, provisions for lamprey control and monitoring will not be guaranteed. Without iron clad guarantees, this leaves a clear and present risk of a lamprey boom in Black Bay and, subsequently, the north shore of Lake Superior. Given that the Camp 43 dam currently provides a barrier to lamprey migration, removal will ensure the requirement for permanent sea lamprey control in all tributaries below the next upstream barrier on the Black Sturgeon River (likely the proposed replacement weir at Eskwanonwatin Lake). Additional costs will certainly be incurred if it is determined that lamprey weirs are required on tributaries, both in dollars for installation and maintenance, as well as the additional disruption of current fish movement between the main stem of the Black Sturgeon River and tributaries.

Additionally, there are other species in the current Lake Superior fish community which will migrate upriver and forever alter the existing fish community of the Black Sturgeon watershed. Any other introduced species in future (such as the looming threat of Asian Carp) will have the opportunity to migrate and breed beyond the Camp 43 Dam, once it is removed. As well, the proposed 'low head weir/velocity barrier' to be installed at the outlet of Eskwanonwatin Lake (to block migration of 'exotics' beyond this point, approx. 60 km upriver) may not prove to be a barrier in periods of high water. The risk to the watershed and to Lake Superior, and potentially Lake Nipigon, cannot be known to a certainty, but it is certainly present and real.

Until these issues are adequately addressed, the N.S.S.A. continues to have serious concerns with the proposed removal of the Camp 43 Dam on the Black Sturgeon River, and cannot endorse the current proposal for Dam removal. On balance, a 'trap and sort' fishway wherein desirable fish are moved upriver, and non-desired species are turned back, remains our preferred option.



Tom Whalley, President,
North Shore Steelhead Association

2017 Film Festival

The 3rd annual Fly Fishing Film Festival held on February 11th was yet another success for the NSSA. This year's event featured films from F3T and was attended by close to 400 people indicating that the event is continuing to grow. The host for the night was Gord Ellis who did a masterful job of introducing each film and entertaining the crowd. The Film Festival committee is already looking forward to next year, and hopes to see you all at the Thunder Bay Community Auditorium.



Birch Beach Riparian Planting Project

This unnamed creek, (referred to as Birch Beach Creek) is a cold-water stream which flows into Lake Superior approximately 35Km west of Thunder Bay, Ontario. The project site is located in the Township of Shuniah and flows under Birch Beach road and Hwy 11/17.

The Ministry of Transportation had completed the realignment of the creek during the construction of the new 4 lane highway and had made some effort to create a riparian zone. This project rehabilitated the final 100 meters of the old highway area where the roadway and culvert used to be. This project was done on Ministry of Transportation property and a permit and permission was obtained. Previous fish assessment done for the MTO indicated there were substantial number (~300) of Rainbow Trout Fry inhabiting the old crossing area. During the Superior Streams assessment electrofishing was only done upstream at the hydro line where 2 Brook Trout, 1 RBT yearling, and 10 RBT Juveniles were observed.

With the removal of both the old highway culvert and the vegetation along the streambanks where the new highway is located there was a loss of overhead cover and an increase potentially in predation and temperature increases. The objective of this project was to assist with revegetation and stabilizing the stream bank area.

Tom Jones Contracting was hired to move 120 cubic yards of topsoil onto the stream banks to a depth of approximately 6 inches. Volunteers then planted 150 dogwood species and seeded the banks with Northland Supreme #2 seed. Curlex net-free erosion blanket along with straw was applied to the banks to prevent erosion.

This project would not have been accomplished without the help of the following volunteers who came out on a dreary misty day to work on this project; Alan Sparkes, Dave Nuttall, Frank Edgson, Tom Kleinboeck, and Steve Wall.

McIntyre River Bank Stabilization Project

It has been noted that the plantings done on the banks of the McIntyre river are not doing as well as was originally hoped and that additional plantings should be considered. It was recognised right from the start that it might take several years and repeated plantings to get a fully planted bank. There are several challenges for the planting survival such as the lack of irrigation, deer browsing, lack of fencing, poor soil conditions, grass cutting and damage done by anglers in the spring. In an effort to resolve some of these issues the NSSA has asked the Thunder Bay Country Club for their assistance.

Boulevard Lake

The rehabilitation of migratory fish populations in the Current River has been challenging. With the City of Thunder Bay now acknowledging its responsibility to the fishery and doing a better job of managing water flows, the NSSA is more optimistic going forward. We know from our own research, and experiences such as the McIntyre River and Portage Creek, that when allowed, Rainbow trout populations rebound relatively quickly. There is evidence of a naturalized steelhead population in the Current River. By maintaining optimal water flows over the Ladder, the Current River can support a world class fishery with an associated positive economic impact for the City.

Dam Refurbishment

It would appear that the proposed restoration work on the Boulevard Lake Dam, to be done by the City of Thunder Bay, will not get underway until at least the summer of 2018, or longer, if the City has issues meeting environmental requirements as set by the Ministry of the Environment and Climate Change. The current plans include the installation of manual hydraulic gates to control the flows, which will eliminate the need for a crew of 4 to manually adjust the stop logs, which has proven to be an issue. The NSSA has encouraged the City to upgrade the hydraulic gates to be electronically controlled, thereby allowing the flows to be adjusted in a timelier and cost effective manner, and has offered to apply for funding to assist with this upgrade. The NSSA has also requested that the City include the installation of a proper fish screen on the hydro intake, as required by the Federal Fisheries Act. Further discussions with the City regarding the possibility of the installation of a fisheries assessment 'trap' on the fish ladder, when the dam is refurbished, will occur in the coming months.



Fish Ladder



Dam Refurbishment

There are a couple of things worthy of note:

- Current River fisheries are protected under the Federal Fisheries Act. This applies to all naturalized and indigenous species.
- While there are provincial requirements/regulations that may apply, these authorities are provided by (and subordinate to) the Federal Fisheries Act (Regulations, plans, permits etc. issued by the Province cannot contravene the Federal Law).
- As owner of the Boulevard Lake Dam (and the fish ladder), the City of Thunder Bay is obligated to ensure affected fish/fisheries are not harmed.
- The previous plans, permits, and management pursuant to the Boulevard Lake Dam clearly did not meet minimum requirements to prevent harm to fish.



The Status of Adult Steelhead Populations in Western Lake Superior Tributaries

By Jon George (jgeorge@tbaytel.net)

A healthy Lake Superior Steelhead population exhibits a wide diversity of life history characteristics such as stream life, lake life, spawning timing and migration patterns, and a repeat spawning rate of > 50% over one generation (four years). Having these characteristics enables a wild population to maximize recruitment of juveniles and maintain the integrity of localized adaptations (Swanson 1985, Clarkson and Jones 1997).

Environmental variables such as flow, water temperature and winter severity all play an important role in the survival of juvenile steelhead.

From 2009 to 2016, Lake Superior tributary streams and rivers have undergone a wide variety of environmental conditions including drought (2010), flooding, high flows (2012, 2013 and 2014) and very late spring spawning (2013 and 2014). In spite of these environmental variables, most adult steelhead populations in Thunder Bay and Nipigon areas appear healthy (Table 1) and express a wide variety of life history strategies. The 2009, 2011 and 2013 year classes, which have a high abundance of young steelhead, were especially strong in Thunder Bay tributaries. In turn, the Nipigon Bay tributaries from 2009, 2010 and 2011, have recruited large numbers of juveniles into their adult spawning populations.

Applying Swanson's repeat spawning index of > 50% to the nine tributaries listed in Table 1, most average greater than this percentage over the past four years. The exception being small tributaries on Lake Shore Drive, Thunder Bay. Each Lake Superior basins of Thunder Bay, Black Bay and Nipigon Bay have at least one estimate of actual adult population size (Table 1). All of them exceed 1000 adults, with the exception of Portage Creek in Black Bay.

Black Bay tributaries (Wolf R. Coldwater R., Black Sturgeon R. and Portage Cr.) express high repeat spawning rates but poor recruitment of juveniles when using Portage Creek data as an index stream. Interaction with an increased perch and walleye populations since the mid 2000's may be responsible for the reduced steelhead survival in Black Bay during their early life in the lake.

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.

Table 1. Repeat Spawning, Mortality and Population Size

Tributary	Repeat Spawning*	Total Mortality	Harvest Rate**	Population Size***
Whitefish R. (Thunder Bay)	52%	48%	18%	
Neebing R. (Thunder Bay)	58%	42%	12%	930
McIntyre R. (Thunder Bay)	59%	41%	11%	1457
McVicar Cr. (Thunder Bay)	63%	37%	17%	1181
Lake Shore Drive tribs. (Thunder Bay)	42%	58%	28%	
MacKenzie R. (Thunder Bay)	61%	39%	19%	900
Portage Cr. (Black Bay)	73%	27%	N/A	275
Jackpine R. (Nipigon Bay)	66%	34%	14%	
Cypress R. (Nipigon Bay)	61%	39%	19%	1600
Prairie R. (Nipigon Bay)	81%	19%	N/A	

* Four year average

** Based on 30% natural mortality (Swanson 1985)

*** Adult spawning population size for 2015 based on 2016 recaptures (Petersen estimate)

Note: Population estimate on the Neebing River is only for the north branch. Fishing mortality rates on Portage Creek and the Prairie River could not be obtained using the repeat spawning index.

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