

# The Status of Adult Steelhead Populations in North Western Lake Superior

By Jon George

A healthy Lake Superior steelhead population exhibits a wide diversity of life history characteristics (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 the recruitment of juveniles and maintain the resiliency of localized adaptations. (Swanson 1985, Clarkson and Jones 1997).

Environmental variables (i.e. flow, water temperature and winter severity), also play an important role in year class survival.

From 2007 to 2014, 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 in 2013 and 2014. In spite of these environmental variables, adult steelhead populations in Thunder Bay and Nipigon to Marathon appear healthy (Table 1) and express a wide variety of life history strategies. The 2008, 2009 and 2011 strong year classes have recruited large numbers of juveniles into their adult spawning populations.

Applying Swanson's (1985) repeat spawning index of 50% to the nine tributaries (Thunder Bay to Marathon) listed in Table 1, all average greater than this percentage over the past four years. Each Lake Superior basin (Thunder Bay, Black Bay and Nipigon Bay) also have at least one estimate of actual adult population size (Table 1). All exceed 1000 adults with

Portage Creek in Black Bay been the only exception.

Black Bay tributaries (Wolf, Coldwater, Black Sturgeon and Portage) have high repeat spawning rates but poor recruitment of juveniles. Interaction with a large perch and walleye (supplementary stocked starting in 2003) population since the mid 2000's appears to have reduced young steelhead survival in Black Bay during their early life.

### 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)	60%	40%	10%	
Neebing R. (Thunder Bay)	57%	43%	13%	1400
McIntyre R. (Thunder Bay)	59%	41%	11%	2000
McVicar Cr. (Thunder Bay)	55%	45%	15%	1000
Wild Goose Cr. (Thunder Bay)	50%	50%	20%	
Portage Cr. (Black Bay)	75%	26%	2%	400
Jackpine R. (Nipigon Bay)	52%	48%	18%	
Cypress R. (Nipigon Bay)	57%	43%	13%	1800
Prairie R. (Nipigon Bay)	69%	31%	1%	

\* Four year average

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

\*\*\* Adult spawning population size based on Petersen mark/recapture calculations

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# NORTH SHORE Steelhead REPORT

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## Investing in the Future

By Keith Ailey



Brooke Ailey shows off a nice steelhead and the pure joy provided by fishing.

A fishing trip is like a rollercoaster of emotions for a child. It starts with anticipation and cycles through everything from boredom, to frustration, to elation. Hopefully, by the end of the trip there is a sense of satisfaction. Throughout the day, there are many lessons to be learned, like patience: waiting for the bobber to go down; perseverance: untangling knots; respect: packing out our garbage; and conservation: releasing the largest fish to sustain the resource into the future. When one considers everything involved in taking a child fishing, the importance of bringing out our sons, daughters, and neighbours becomes very clear.

**Keeping that in mind, there are five key things I always try to be conscious of whenever I'm fishing with kids:**

**1 Be picky.** The chosen fishing spot should encourage a hookup relatively quickly and easily. I always take my daughters to my best secret spots and save the exploring for days when I'm fishing with my buddies.

**2 Be patient.** Don't sweat it when the kids lose focus. It is natural that a child will lose interest while waiting for the fish to bite. I say, let them explore and play. When you hook a fish, let them reel it in so they can feel some of the excitement. Eventually, they will come to appreciate the fishing even more than the bugs, the mud, the bait, and all those other distractions.

**3 Be understanding.** Quitting is tough. Especially when the fish are biting and you want to keep fishing. However, most kids have a limited tolerance for angling, especially when it is cold, raining, or the bugs are bad. Forcing a child to keep fishing when they don't want to is counter-productive to the long-term goal. Hard as it may be, know when to pack it in and then try again on another day.

**4 Be positive.** Fishing with kids can be almost as much of a learning experience for you as for the children. Snags, lost lures, knotted line, spilled tackle boxes, broken gear- there are bound to be obstacles. The key is to positively reinforce the youngster's attempt to learn to fish, and to shake off the setbacks. If a child senses your frustration, they're likely to pick up on it. Stay positive and encouraging.

**5 Be a teacher.** Children are naturally curious. Take every opportunity to explain things as they present themselves. Tying knots, handling fish, survival skills, weather patterns, the food chain, good conservation practices... the opportunities are endless.

Investing time with a young person who is interested in fishing can be very rewarding for both the adult and the child. The chance to learn about nature and experience angling with an adult who is patient, understanding and positive will make for an exceptionally enjoyable day- one the child will want to experience again.

**About the author:** Keith Ailey is the father of two young fisher-girls and a teacher at Superior Collegiate. He invests his time in the youth of Thunder Bay by volunteering with the school's Outdoors Club as well as the skiing, running, and mountain biking teams.



Brooke gently releases a Lake Superior steelhead.



## Time to Get Ready



Photo courtesy of Darren Wright, Steelhead House, Terrace BC

A look at the calendar reminds me that spring is close upon us, and it's time to blow the dust off the steelhead fishing gear in preparation for another year on the river. I'm pretty good at putting stuff away, "ready" for the next spring, so this should be a snap. So, why is it that everywhere I look, there appears to be something steelhead related?

I just nicely tripped over a wayward wading boot in the back room downstairs, and I am in the midst of trying to locate its mate. Why is it loose in the first place, I wonder? I seem to remember digging it out from the back seat of the truck at the end of waterfowl season, and setting it inside the door. I must've forgotten about it, until now. I'm pretty sure the other is somewhere here, but I'll first need to relocate these 2 pairs of waders (which I'd hung to dry sometime last summer), before I can conduct a proper search. They look dry now, many months later, so I'd best fold them up and pack them in the wader duffel ... if only I could find the silly thing, which I last recall using for my duck

hunting waders on a late season mallard shoot. No problem; I'm sure it will turn up.

In the meantime, I'd best hang these camo clothes back in the closet, as well as the blaze orange deer hunting jackets and wool pants. Seems like December and deer were only a few weeks ago...which reminds me; where did I last see my fleece pullovers and underwear? I think they may be in with the hunting gear I use for those late season visits to the deer stand: that's where I last saw them, anyway. I'll need those for the cold waters of spring so, once I find them, I'll put them right over here where I keep the wind-stopper jackets and rain gear... which, it now appears, are not here! Okay ... I guess they're still packed in the bow of the boat since that cruise out on Superior, the last warm day in October. Oh well; I KNOW the boat is in the garage, so those should be easy enough to locate.

The fly rods are all resting nicely in the corner ... but, where is the new 7 weight? I haven't seen that since I used it to cast some streamers for smallmouths at the cottage, last August. Pretty

sure I brought it back to town ... it's probably in the rack upstairs. There's a reel is with it, I think ... but which one? I'm really going to have to track those down. While I'm at it, I should find that box of spoons I use to cast the shoreline in early spring. Did I throw them in with the Lake Trout gear? Best have a look for those, as well as that box of streamer flies and nymphs I threw in with the Brook Trout flies, during the peak of the bite, last June. I should probably clean up the fly tying bench, also ... right after I locate those long casting rods, which (I think) were last used for planer board fishing for salmon, sometime last summer. Did I hang them in the garage, and where are the reels to go with them? I think they're still in with the walleye rods, since the summer fish-fry season. Or maybe they're in with the ice fishing gear ... some of them are, anyway. I need to find those, and maybe change the line as well ... right after I sort out this stack of fly lines, and match them up with the correct reels for spring. No time like the present ... except, I really need to start tying some 'secret' flies for the coming season. How many do I have left from last year, anyway?

Maybe I'm not quite as prepared as I thought, and getting ready for the season is starting to look a little daunting. I'll have to get on that, soon. Spring, and Steelhead, are only a few short sleeps away...

*Tom Whalley*

Tom Whalley, President, North Shore Steelhead Association



## Co-op Angler Program Update

The Co-op angler program will be up and running again this spring. The NSSA values this program and the guiding science it provides. General population trends as well as the effects of climatic change are two of the fundamental findings we are able to document through this program. This year, key population information will be from the Cypress River, McIntyre River, Portage and, McVicar Creeks.

We will be asking for volunteers to collect biological samples (length, sex and scale samples) from their catch while fishing Lake Superior rivers and streams throughout Northwestern Ontario.

This 25 year program has been funded by CFWIP funding in the past, on a hit and miss arrangement however, that funding program no longer exists. This year we are fortunate to have secured 50% of the operating costs from the Upper Great Lakes Management Unit of the MNRF.

A similar volunteer based program is being introduced in the Sault St. Marie area by Kyle Rogers with the MNRF, with the hopes that a cross section of rivers and streams from the Sault to Thunder Bay will have some data collected.



## George Creek Restoration Project Part 2

This past year the NSSA completed the restoration of a small cold water stream within Centennial Park. This stream was barely identifiable, as over the years the channel had in-filled and become spread out without any defined pools or riffles being evident. It resembled a ditch when in reality it harboured a small and self sustaining population of Brook Trout. This was a typical Brook Trout nursery stream similar to many others in Northwestern Ontario that helps to maintain the population of Brook Trout.

With the assistance of funding from the Great Lakes Sustainability Fund, the NSSA along with our partners, the Thunder Bay District Stewardship Council and the City of Thunder

Bay developed a restoration plan. A natural channel design was provided by Hatch Mott MacDonald and Tom Jones Company was contracted to perform the rehab work. The stream rehabilitation work involved the creation of four pool/riffle sequences over the final 20 meters of the stream prior to flowing into the Current River. To complete the project an open bottom wooden bridge replaced the existing steel culvert and volunteers provided the labour to replant the disturbed area. This project was completed in 8 days in late October.

It is the hope of the NSSA that this stream will become a little Brook Trout factory and continue to contribute to the fishery in the Current River.



## Boulevard Lake Dam Restoration

The City of Thunder Bay is hopeful of securing a contractor to start the long awaited restoration of the Boulevard Lake Dam.

This will involve draining the lake after June 15th of 2015 to allow for the work on the concrete foundation to be started. The current plan would be to reinstate the gates and logs once the 2015 work is complete. The City is currently in discussion with the MNRF regarding fish passage. In 2016, the dam would operate as normal with winter and summer settings as the remaining work would largely be on top of the structure.

When the NSSA first met with the City and the consultant hired to develop the retrofit the NSSA was hopeful that the plans would have seen the old and leaky stop logs currently in place replaced with hydraulic gates, operated either manually or better yet electrically, which would have allowed for a quicker and less time consuming means of adjusting the water flows through the fish ladder. Mike Vogrig from City Engineering stated that "the City has had to find some savings with respect to the concrete work, and 2 of the 3 mechanical gates. The fish ladder gate (S1), and one of the two sluiceway gates (S3 and S4) will only be included if budget permits. The gates are mechanical, and the current plan is to operate them manually. They could be automated in the future, but that is outside of the scope of work we are completing for this project"

Lastly the MOE and the City of Thunder Bay are attempting to establish a new Permit to Take Water which will ensure that there will be a certain flow of water provided through the dam 365 days a year. This guaranteed flow may be facilitated by means of three (3) approximately 12" tubes controlled by manual knife gates located in the bottom of the Sluiceway 1 (fish ladder) which will ensure a constant flow under drought conditions such as the spring and summer of 2010, or anytime the lake is drawn down. The water would flow under and around the foundation of the existing fish ladder. (See diagram).

The NSSA will continue to advocate for the right of water for the purpose of maintaining corridors for migratory species on the Current River.

