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Where are the Salmon?

As you are driving down the dirt road you notice the sun begin to rise above the top of the treeline. It is the morning you have been waiting for, the first weekend of July; prime time of the Atlantic salmon run. You hop out of your truck, strap on your olive green waders and carefully select the fly you will be using to pursue your trophy. As you make your way towards the top of the pool, you feel at home, you tell yourself that this is the morning. Cast after cast you lengthen your line until you have reached the maximum amount of line you can throw. About half way through the pool, it happens. The gleaming silver body of a beautiful fish breaks the surface of the water and takes your fly. The fight is on. After 10 agonizing minutes of playing the fish, you finally bring it to the beach; in my opinion the best feeling in the world.

But wouldn’t you find it alarming to hear that all of this is in jeopardy? “Back in the mid-1970’s the total population of Atlantic salmon in North America was close to 1.8 million, it is now roughly one third of that” (Burke). These numbers are very alarming. In just 40 years the Atlantic salmon population has dropped to just one third, so what will happen in another 40 years? “The Miramichi requires about 40 000 spawners [sexually mature, adult salmon that return to home rivers to lay eggs] to meet conservation requirements and returns of adults can range from a low of 22 000 in 2012 to a high of 75 000 in 2011” (Hambrook). Many factors have contributed to the decline of the Atlantic salmon population including commercial fishery, over population of predator fish and climate change.

Back in the 1950’s vast swarms of Atlantic salmon were discovered off the coast of Greenland feasting on sand eels and shrimp, fattening up for their long journeys back to their home rivers, which in most cases are thousands of miles away. 80% of these fish come from North American rivers (Burke). This discovery could arguably be the worst thing that has ever happened to the Atlantic salmon. This discovery caused waves of Greenland commercial fishermen to engage in an all-out slaughter on the salmon using long lines and nets. “At the peak of the Greenland harvest, Greenlanders were taking 600 000 large Atlantic salmon per year (Burke),” roughly one third of the North American population at that time per year. Even with populations in serious decline, Greenlanders were still harvesting 300 000 large salmon annually. Last year Greenlanders took 20 metric tons of Atlantic salmon, a very small number compared to previous years. When a higher number of 800 000 fish returned to North American rivers, the Greenlanders upped the quota to 75 metric tons, which is roughly 35 000 large salmon. With the upped quotas, the number of returning Atlantic salmon to North American rivers decreased by 200 000 fish; thus only three fourths the number of Atlantic salmon returned to North American rivers. That year only 22 000 Atlantic salmon returned to the Miramichi system. Obviously, these numbers coincide with the larger Greenland take (Burke).

Over the last five years, numbers of striped bass have boomed on the Miramichi River. Striped bass are known to eat anything and everything that will fit into its mouth; thus making it the most dangerous predator fish on the Miramichi River. It just so happens that during the time the bass are most active due to spawning, baby salmon smolts are heading out to sea through the feeding frenzies of bass. The approximate number of smolts in the Miramichi system heading to sea at this time is between 1.2 and 1.5 million and even the smallest bass is capable of eating up to five small fish per day. With there being an upwards of 250 000 striped bass in the Miramichi system, if each bass only ate 3 smolts in its lifetime, that would be enough to wipe out over half of the population of salmon smolts. Thankfully, there are also millions of smelts, chubs and other small species of fish that the bass feed on, which takes some of the heat off of the salmon smolts. “DFO [Department of Fisheries and Oceans] at the March 19, 2013 meeting stated that the recovery of the striped bass population could be mostly attributed to the closure of the commercial fishery” (Hambrook). This takes us back to the issue of the commercial salmon fishery. Is it possible that the closure of the commercial salmon fishery could cause the Atlantic salmon population to rebound like the bass population?

There is yet another problem that the salmon are facing; climate change. As the earth warms up due to global warming, water temperatures also rise. The increase in water temperature causes many problems for the Atlantic salmon. Atlantic salmon prefer a temperature of around 60oF. Over the past few summers, water temperatures have soared up to 80oF-85oF. As the water gets warmer, it also gets lower. As the water gets low and warm, it causes oxygen levels to decrease in the water. When this happens, Atlantic salmon must find a cold water brook or stream and “lay” (rest) at the mouth of the cold water (where a cold water brook or stream meets the river). This allows the salmon to receive the oxygen they need to survive. The problem is that most of these places are very close to the bank of the river and are in shallow water. This makes the salmon very vulnerable to predators and poaching. Of course, there is very little we can do about climate change except reduce our carbon footprint and our greenhouse gas emissions.

A “Buffer Zone” can be defined as a 30 meter zone on each side of a body of water that cannot be deforested. The problem is, most logging companies do not follow the law and harvest in these zones anyway and in some cases are granted permission to harvest trees in these areas. For example, Irving just signed a multimillion dollar contract to be granted permission to harvest trees in a specific area of protected forest. This has a dramatic effect on the water quality, temperature of the water and habitat for all aquatic species. By cutting in the buffer zones, it eliminates the canopy over streams causing them to be exposed to the sun and warm up. This causes a domino effect because once the water in cold water streams has been heated, then the baby salmon and all other species of fish in the stream begin to die and it also reduces the amount of precious cold water flowing into rivers that the salmon need once the water gets warm in the heat of the summer. Cutting in buffer zones also causes much habitat destruction. As trees are harvested, the roots start to give away causing erosion of soil, rocks and other debris into the water. This causes habitat destruction for Atlantic salmon and all other species of fish because as more and more rock and soil erodes into the water, salmon pools (very deep slow flowing spots in the river where salmon usually lay) start to fill in making there much less habitat for the salmon. As the river gets shallower, it still has to hold and carry the same volume of water downstream as before thus causing the water to overflow the banks of the river and over time causing the river to run wider, faster and shallower. I have personally experienced this happen to many salmon pools on many different rivers. As the river loses its salmon pools, it results in more vulnerability to predators and too much heat and sun exposure during the summer months. All of the erosion into the water also makes for very poor water quality. (Fitzherbert).

You quickly pop the hook out of the fish’s mouth, snap a picture, revive it, and release it back into the river. You feel a sense of pride as you watch it head back out into the river, knowing that it will spawn this year and that maybe someday you will be fortunate enough to catch one of its offspring. Doesn’t it sound great? A world where you are able to do this, the most amazing thing in the world we know as salmon fishing? I do, and with a few changes we can preserve our salmon population for many generations to come!

Works Cited

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