

Owasco Lake 2009

The graph below provides a picture of the species composition of angler diary cooperator catches of legal sized trout species and walleye since 1984 (Figure 1). Note that the trout and salmon catches are based on all trips targeting cold water species and are meant to provide an idea of relative abundance of the trout species in the catches. The walleye catches, however, are based on angler trips targeting warm water species. As a result, the walleye catches provide a time reference for when legal sized walleye became abundant in the catches and subsequently declined but should not be interpreted as their abundance relative to the trout species. Lake trout and walleye became the dominate species in the catches during the early to mid-2000s and brown trout and rainbow trout essentially disappeared. We believe that this occurred due to predation on stocked fish by lake trout and walleye.

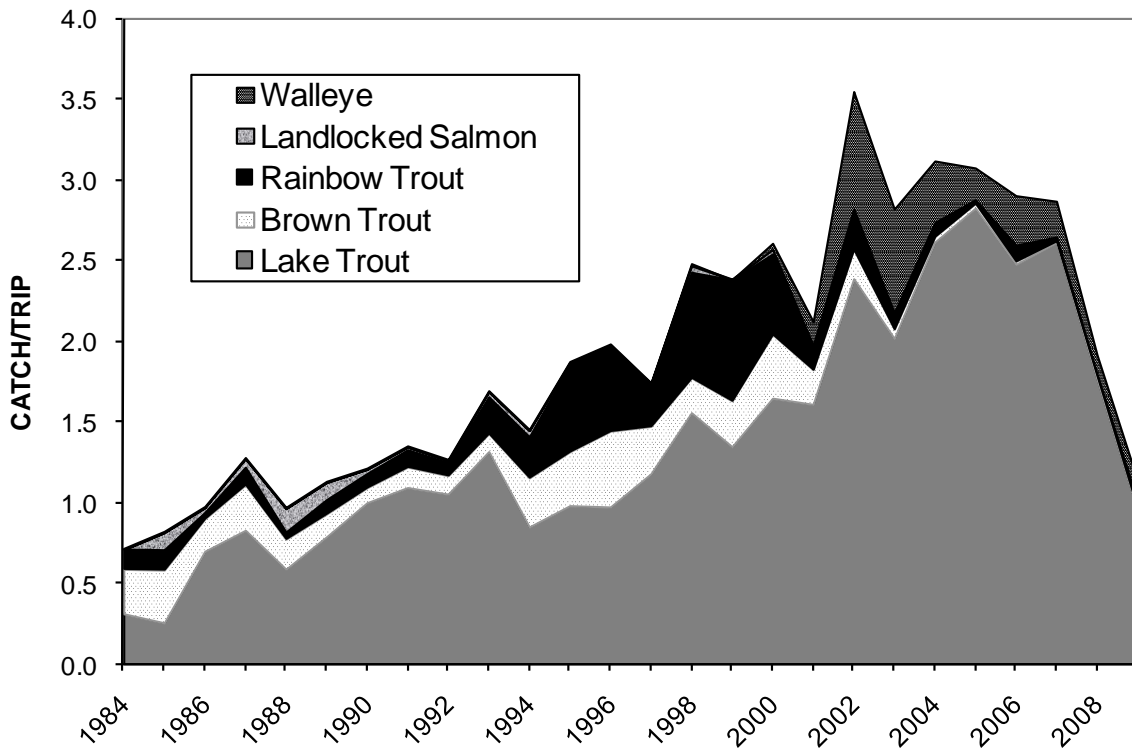


Figure 1. Angler diary cooperator catches (number per trip) of legal sized trout, salmon and walleye for Owasco Lake 1984-2009.

Lake trout catches in the sport fishery peaked in the mid-2000s but gill net catches suggest that this occurred after actual abundance peaked in the mid (and perhaps) late 1990s (Figure 2). More frequent gill nettings would have provided a clearer picture but we will do the best we can with what we have to work with. Growth of lake trout was relatively poor when the catches peaked (Figure 3) and the forage base (smelt and alewife) appeared to be depressed (Figure 4). We acknowledge that gill nets are probably not the best method of assessing smelt and alewife abundance; these data are what we have so take it for what it's worth. The result was a bunch of hungry fish in the lake during the mid-2000s that were relatively vulnerable to fishing. It is also of interest that the lake trout catches have declined sharply over the past 2 years but abundance has actually increased according to the gill nets. Not coincidentally, growth of lake trout has

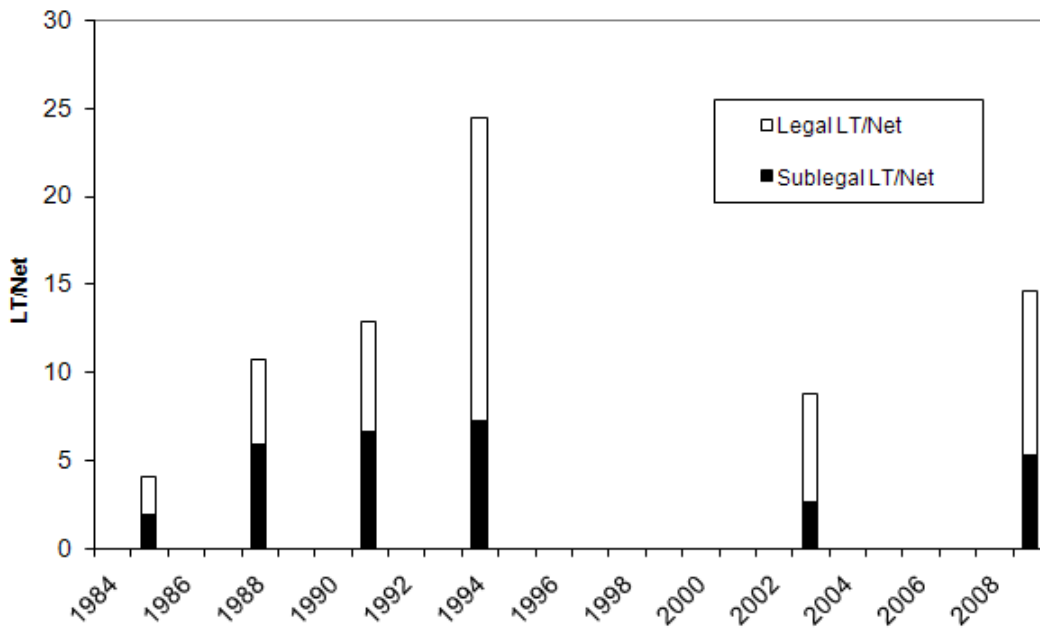


Figure 2. Catches of sublegal and legal sized lake trout (LT) per net in 1985, 1988, 1991, 1994, 2003 and 2009.

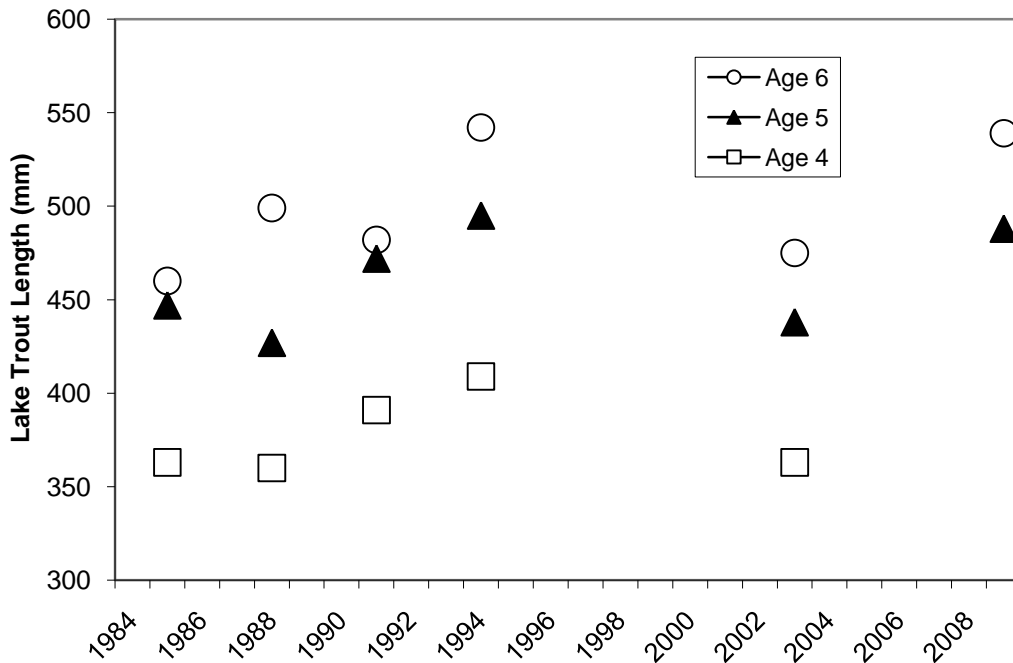


Figure 3. Mean lengths of age 4, 5 and 6 lake trout from gillnets in 1985, 1988, 1991, 1994, 2003 and 2009 (381 mm = 15 inches). (Note that there were no age 4 fish in 2009 because that stocking was diverted to Lake Ontario due to a shortage of lake trout in the Federal system).

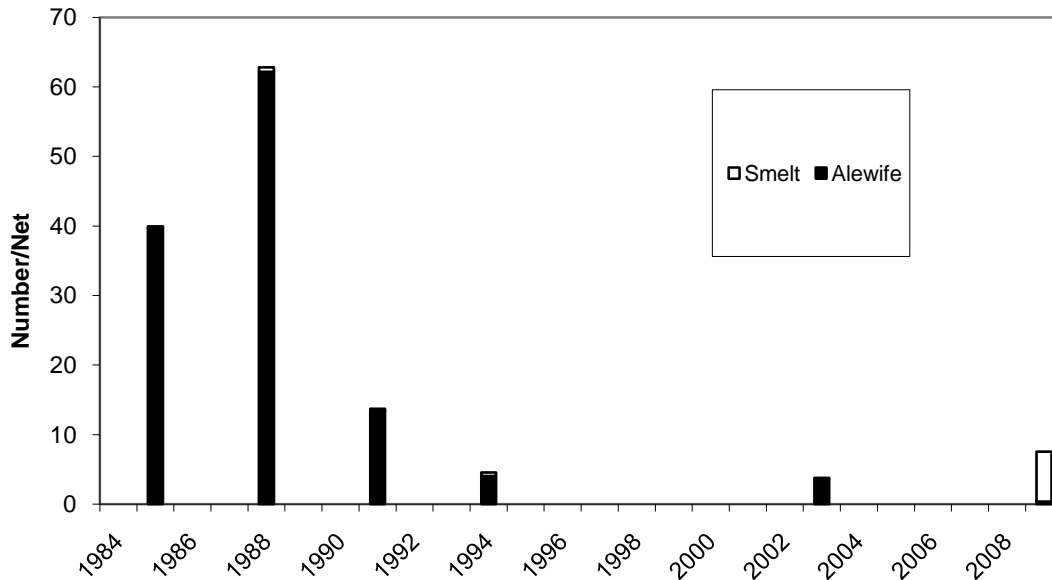


Figure 4. Numbers of smelt and alewives caught per net in 1985, 1988, 1991, 1994, 2003 and 2009.

rebounded in 2009 suggesting that these fish may not have been quite as hungry and were less vulnerable to the sport fishery than they were during the mid-2000s. Alewives still appear to be very depressed but smelt were at an all time high in the 2009 nets. Again, we don't have great confidence in prey fish assessments based on gill net catches but the evidence does suggest that alewives are far less abundant than they were in the 1980s and we don't have a good explanation for why smelt showed up so well in the 2009 catch. It is possible that ecological changes (i.e., zebra mussels, water fleas, etc.) in the lake over the time period have altered prey fish distribution and changed vulnerability to the nets. It is also possible that there are younger alewives present that are too small to be captured by the nets. We simply do not know.

The buildup of the lake trout population into the mid-1990s, and perhaps a little beyond, resulted from a high stocking rate that was in effect from 1980 until 1992 when stocking was reduced by 50%. The stocking reduction was an attempt to prevent lake trout from becoming abundant to the point where recruitment of brown trout and rainbow trout would be impaired. Unfortunately, we also stocked some surplus lake trout during the late 1990s which probably didn't help matters (that won't happen again). Understand that lake trout are long lived and it takes several years to see the effects of stocking changes. Enter large walleye as a major predator in the lake during the early to mid-2000s and the stage was set to apply excessive pressure on the forage base, reduce growth of lake trout and severely reduce recruitment of brown trout and rainbow trout to the point that the fisheries for them have essentially disappeared.

There was some fear within DEC that a walleye stocking program could be harmful to the trout fisheries but the decision was made to go forward. The walleye population that developed was largely the result of efforts by well meaning and highly successful volunteers who raised fry in private ponds to a size which allowed them to survive after stocking. We won't attempt to apportion the "blame" for the subsequent declines in the brown trout and rainbow trout fisheries between walleye and lake trout but it is abundantly clear that both are effective predators on

freshly stocked brown trout and rainbow trout as well as being cannibalistic. No doubt both also contributed to putting a substantial dent in the forage base. Freshly stocked trout are also at heightened risk to predation when alternate food sources for predators (i.e., alewives) are depressed thus exacerbating the situation. Thus, the high catches of lake trout and walleye seen in the early to mid-2000s were not sustainable because of the impact on the forage base and increased predation on all species of stocked trout and walleye.

While walleye are understandably a very desirable sport fish species, the loss of the fisheries for brown trout and rainbow trout were never discussed as an acceptable consequence of the walleye program. Owasco Lake is only 12 miles long and whatever mix of species we choose to manage it for must be compatible with one and other. It is now clear that we cannot manage it for everything and lots of it. If we could, we would.

Fortunately, Owasco Lake is in an area that is richly diverse in fisheries resources. The nearby Seneca River system and Otisco Lake offer quality walleye fisheries. Look a little farther to the east and we could include Oneida Lake in the discussion. Otisco Lake cannot provide a diverse cold water fishery making it an ideal lake for a walleye program. Owasco Lake has a history of providing a diverse cold water fishery including the opportunity to catch 15+ lb brown trout. That is very rare in inland lakes. Nearby Cayuga Lake is somewhat impaired in its trophy brown trout potential by the presence of sea lamprey. Skaneateles Lake lacks a smelt or alewife forage base and is a superb rainbow trout fishery. Attempts to develop a brown trout fishery there have resulted in poor recruitment and growth.

The fact that there are anglers who would prefer to catch walleye and couldn't care less about trout, and that the opposite is also true won't get a debate here. Since we cannot continue to manage the lake for everything and lots of it, we have recently taken some steps in an attempt to re-establish the fisheries for brown trout and rainbow trout at the expense of walleye and lake trout. We diverted the entire 2005 year class and the 2009 yearling lake trout stockings to Lake Ontario to help with shortages in the Federal system. We also turned down an opportunity to stock DEC reared walleye fingerlings in the lake in 2009 and will not stock walleye into the foreseeable future.

Although we haven't seen resurgence of the fisheries for brown trout or rainbow trout yet, we did see some positive signs in 2009. Growth of lake trout has improved (Figure 3) and the catch per trip (Figure 1) was at a level (around 1 lake trout per trip) similar to what we saw in the 1990s when we had productive and diverse fisheries for trout. If the steps we have taken fail, the next logical thing to try is further cuts in the lake trout stocking. Failing that, if we then decided that ecological changes in the lake made it no longer suitable for brown trout and rainbow trout; we could stop stocking them and stock walleye again. There are a lot of options here but one thing is certain; we cannot have everything and lots of it in any sort of sustainable way.

As always, we thank you for your cooperation in the program and welcome your input. Obviously, information provided by angler diary cooperators is a huge part of what we know about the lake.