



WORKING TOGETHER TO PROMOTE A QUALITY FISHERY

Great Fishing at Rogers City in 2010 and Many Fishery Projects Occurring to Improve Fishing in Lake Huron

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Fishing Success Rate off Rogers City as Good in 2010 as during the Peak Salmon Years

The fishing during 2010 was excellent in many regions of Lake Huron. What is not widely known is that after the alewife crashed in 2003 and the salmon fishery declined, fishing in much of the Lake is currently as good as it was during the peak nearly 10 years ago. In 2010, rainbow trout (steelhead) became a very important component of the fishery and the waters off Presque Isle County experienced excellent catch rates. Since the loss of alewife, there has been much less bait fish in the mid waters for the salmon and trout to eat but the fish are beginning to adapt. Research has shown that the successful rainbow trout has learned to feed on the surface for terrestrial insects, in the mid waters for smelt and on the bottom for goby. Lake trout, which is also becoming a very important part of the catch, developed similar feeding habits by swimming back and forth from the bottom to the surface searching for food. Chinook continue to be important in the catch and along with rainbow trout, lake trout, Coho salmon, walleye, brown trout, catfish and Atlantic salmon they make up an excellent diverse fishery. During last season when all the catch rates from the fish mentioned above are considered together, the fishing in 2010 was comparable to the best years. In other words, anglers fishing last year in this area had as much of a chance to catch fish as an angler fishing here during the peak years.

Not only was fishing excellent but also the fish were caught close to shore and near the surface which makes the experience more enjoyable. For example, the best fishing from April through August was in water less than 70 feet deep with most fish being caught in the upper half of the water column. In fact, fish were consistently caught from the surface to only 30 feet down and along Presque Isle County water less than 70 feet deep is usually encountered within a mile of shore.

Why did the Alewife Crash and Food web Change Dramatically in 2003?

The food web starts with energy from the sun which is absorbed by tiny one-cell plants known as algae or phytoplankton. Very small animals about 1/100 to 1/2 inch in length that are known as zooplankton eat the algae and become food for small fish like smelt and goby which are eaten by larger fish like trout and salmon. Generally, lakes with more algae produce more food for fish. When the zebra and quagga mussels were introduced during the 1990s they eventually spread to the deep waters of Lake Huron where they efficiently filtered the mid waters and consumed much of the algae. As a result, the zooplankton numbers decreased dramatically causing the alewife and smelt to decline to record low levels because of lack of food. Since the mussels trapped the food as they filtered the water, the area around the mussels on the bottom became rich with nutrients and bottom dwelling fish like goby survived very well. After the food web changed there was much less food in the mid waters but there was still a concentration of food on the surface as terrestrial insects and an increase in food on the bottom. Lake Huron is beginning to rebound and smelt are recovering in the mid waters but alewife remain scarce.

Some Species of Fish have Benefited Since the Alewife Crashed

After the alewife crashed in 2003, it became apparent that alewife greatly reduced wild reproduction of several fish including walleye, yellow perch, lake trout, smallmouth bass and emerald shiners. Walleye and perch responded immediately with record wild year classes. The walleye are near record levels in Lake Huron and stocking of them is no longer needed. Yellow perch and smallmouth bass fishing has improved greatly in many areas. Lake trout have been stocked in Lake Huron since 1974 but significant natural reproduction did not become established until the alewife crashed during 2003. Since the alewife disappeared, over 50% of the lake trout produced have been wild. The largest of these wild lake trout weigh 3 to 5 pounds and they can be identified by the absence of fin clips.

Chinook Salmon Struggling with the Alewife-Crash

Chinook salmon are stubborn and insist on feeding in the mid waters but with the lack of alewife and smelt this made it difficult for them to survive. Unlike several of the other species, Chinook would not swim from the surface to the bottom looking for food. Another problem is that Chinook remain close to shore for the first summer where they are eaten in large numbers by lake trout and walleye. When alewife were plentiful they buffered the newly stocked Chinook from the larger fish but after the alewife crashed the small Chinook stood out in the water and were readily consumed. The Chinook are beginning to adapt and over 80% of them are wild so, hopefully their numbers will increase. Research shows that stocking Chinook salmon has little impact on improving the fishery in Lake Huron.

MDNR Fishery Projects Started after the Food Web Change to Improve Fishing

1) Brown Trout Pilot Study Stocks Extra Large Yearlings

Brown trout populations have nearly collapsed since 2004 in Lake Huron and during 2008, it was estimated that less than 150 were caught in Michigan waters. Evidence showed that the brown trout were being eaten by birds, walleye, lake trout and other predators immediately after they were planted. With low numbers of smelt and alewife near shore, the brown trout stood out after stocking and were easily consumed. In addition, most other trout and salmon have a strong urge to move off shore once they are planted but brown trout remain near shore for many weeks where they are very vulnerable. The goal of the 3-year pilot study, which began in 2009, is to raise the fish in the hatchery to a much larger size and to stock them in the fall when birds and larger fish are not in the area. Instead of planting the fish in the spring they were maintained in the hatchery for an additional 5 months which increased their weight by about 4 times. The average weight of each fish was near a pound. The fish were large enough that even the larger predators should not bother them. Approximately 5,000 browns were planted at Roger City each fall during 2009 and 2010 and these fish should start showing up in the catch in good numbers this spring. The program will be evaluated in 2012 and the goal is for at least 5% of the stocked fish to be caught by anglers otherwise the program will be discontinued and the hatchery effort will be switched to Atlantic salmon or rainbow trout. So far the returns at the 6 stocked ports have been lighter than expected.

2) Rainbow Trout Pen Culture to Help Increase Survival

There is evidence from Lake Ontario that rainbow trout survival may increase if the fish are held in pens at the stocking site for up to two weeks before releasing the fish. Fish become stressed and exited when being transported and usually the water temperature and chemistry are different at the release site. The pens allow the fish to become adjusted to the new conditions so they can more readily escape predators when they are freed. The rainbow trout acclimation study which begins this spring (2011), will stock 15,000 steelhead in net pens with another 15,000 stocked as a control group directly into the Lake at Harrisville and Harbor Beach, with an increase at Oscoda to 20,000 stocked each in pens and directly in the Lake. All of these rainbow trout will be tagged with specific coded wire tags to determine if the fish maintained in the pens survive better than fish stocked directly into the Lake. If the results show that pens significantly increased survival then efforts will be made to use this technique at other sites.

3) *The MDNR is Attempting to Expand the Atlantic Salmon Program*

Atlantic salmon are surviving better than all other salmon and trout planted in Lake Huron so the DNR is studying the possibility of expanding the program. For example, Atlantics survive 5 times better than the next best species including rainbow trout and lake trout and over 70 times better than Chinook salmon. Approximately 25,000 Atlantic salmon are stocked each year and during 2010 about 1,360 were harvested by anglers while 1,470,000 Chinook salmon have been stocked annually and during 2010 only 1,100 Hatchery reared Chinook were harvested. In the past, all Atlantic salmon that were planted in Lake Huron were raised by Roger Greil and his students at Lake Superior State University. The 20 years of research conducted at the University has resulted in much new knowledge on culture techniques. During the last two years MDNR biologists have moved surplus fingerlings from the University Hatchery to the State's Platte River Hatchery to determine if it is feasible to raise the fish in larger numbers. The MDNR is committed to trying to expand the Atlantic salmon program in Lake Huron.

4) *Work has Started to Reestablish the Native Cisco (Lake Herring) Throughout Lake Huron*

a) Why attempt to reestablish cisco (lake herring) throughout Lake Huron?

Cisco is a native recreational fish with catches as high as 180,000 fish annually during the last 5 years in the St. Marys River/Cedarville area. Historically, cisco recreational fisheries were found along many shoreline areas and ports from above Drummond Island to below Saginaw Bay. Cisco were a very important baitfish for lake trout, walleye and other predators and enormous numbers of cisco were harvested commercially. Cisco live in the midwater above the bottom like alewife and the cisco might help fill the baitfish void left by the collapse of alewife. There is evidence from Lake Superior that lake trout, Chinook salmon and rainbow trout feed on cisco. Having a larger population of cisco could help maintain alewife at low numbers resulting in the continuation of very successful wild reproduction of other native fish including walleye, lake trout and yellow perch. It is becoming apparent that before the alewife collapsed they suppressed successful natural reproduction of these native species. Finally, since walleye eat cisco there is research that shows that cisco could possibly provide a buffer between walleye and perch resulting in fewer perch being eaten by walleye in areas like Saginaw Bay. This may result in significantly better yellow perch fisheries.

2) Since there is a population of Cisco in Northern Lake Huron above the Straits of Mackinaw why is the cisco not spreading down the Lake?

Cisco appear to have a strong homing tendency so most fish return to the same locations each year at spawning time instead of migrating to new spawning locations. Cisco can live for over 20 years but often there are several years between successful spawning. These factors could be contributing to the slow establishment of cisco throughout the Lake. Stocking would increase the chances of providing a good fingerling year class annually at the primary historic nurseries of Thunder Bay and Saginaw Bay. Currently, with the alewife population at record low levels and the smelt at moderate levels, there is a window of opportunity to increase stocking since cisco would encounter much less competition. Dense populations of alewife and smelt are often cited as a major obstacle for successful reproduction of cisco. Finally, cisco is a native species that has been adapting to the Great Lakes for thousands of years and if it is reestablished throughout Lake Huron it is likely that the young will become a stable midwater baitfish while the adults may provide new recreational fishing opportunities. Even though the Cisco Rehabilitation Plan states that success is far from certain, it mentions that the benefits are great enough that such efforts are easily justified. Stocking cisco would only be temporary until the fish become established or the plan is unsuccessful.

So with the fishing rebounding and several new projects in progress the outlook for Lake Huron is very good.

I am always interested in your comments, questions or suggestions so do not hesitate to contact me.

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