

## **2011 Eastern Lake Superior Management Unit Newsletter**

### **Newberry Operations Service Center, Newberry, MI**

Once again, spring finds us finishing our analyses of fish growth, population dynamics, and management options for last summer's survey waters, working on net and other equipment repairs, and attending management and training meetings. We are still without a unit manager, with Steve Scott, Lake Superior Basin Coordinator, also acting as unit manager for now. Our economic situation is challenging, and projected to continue to be challenging in the future. Most travel is curtailed, with many meetings now being attended electronically. In addition, the operating budget for materials and equipment was also reduced.

As a reminder, a map showing current Upper Peninsula management unit boundaries can be found on the Department of Natural Resources and Environment (DNRE) website under the Fisheries section, and also at the end of this newsletter. The three units collectively managing the EUP are Eastern Lake Superior Management Unit (ELSMU), Northern Lake Huron Management Unit (NLHMU), and Northern Lake Michigan Management Unit (NLMMU).

#### **New Department**

We were the merged Department of Natural Resources and Department of Environmental Quality (DNRE) for only one year. One of the first things that Gov. Snyder did in January was to order the DNRE split back into two departments, DNR and DEQ. Last year's extensive analysis had found some redundancies and ways to streamline operations between the two divisions a bit, and several of those will likely remain despite the new split. For the crew in Newberry, very little changed last year in the way we conducted business, and we plan to continue the same work we have been doing in the past.

#### **Supervisory Re-Districting / Employee Transfer**

Frank Kolson transferred to the Wolf Lake Fish Hatchery near Kalamazoo last year. We are in the process of hiring a new technician soon. Jim Waybrant will be retiring on April 1, 2011. So we will soon begin the process of hiring a new biologist as well.

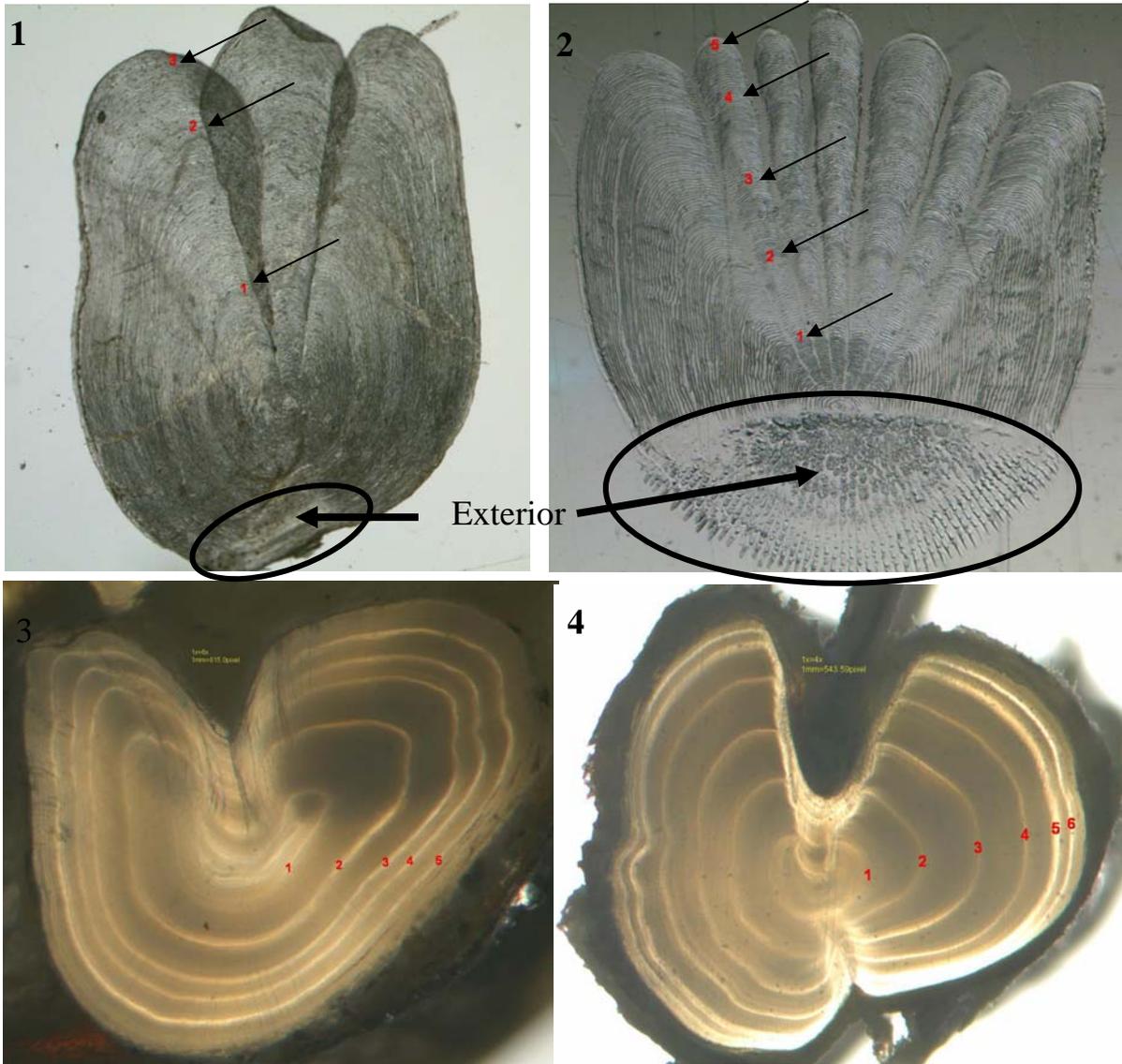
#### **“How'd They Do That?”**

Age and growth determinations: Scale and spine reading.

Many people over the years have been surprised when they saw us take and save scales from some of the fish we catch during our surveys. Lately, we have also been taking 2-3 spines from the fin on the top of the larger fish (dorsal fin) of each species. Reading the scales and spines allows us to determine the fish's age. When the age of the fish is combined with its length at capture, the combination allows us to determine growth rate, which we can then compare with the state average growth database. An unusually fast or slow growth helps us determine how that species is doing the lake or stream. Growth too slow could be from either not enough food or else too many fish in the population. The age data also allows us to determine the annual mortality, or percent of that population that dies each year.

The mortality estimate does not tell us the proportions of natural death versus angling harvest. But combining the estimate with a graph of the number of fish at each inch-length can tell us more about the extent of angling impact. For example, a population with 86 five-inch and 63 six-inch perch, but only 6 seven-inch and 4 eight-inch perch tells us that something has caused a serious decline in perch numbers as they reach the seven-inch size. The large drop in numbers of larger perch may signal either significant angling harvest, some other predator targeting only large perch, or poor spawning success in certain years. Other age/growth data uses include determining whether a species is stunted.

So, how do we age the scales and spines? The internal portion of the bony scale is comprised of hundreds of concentric rings called circuli. The circuli that are put down in late fall and again in late spring show definite changes that signal a slow-growing winter period. Counting those special circuli, called annuli, gives the number of winter periods, and the age of that fish. Pictures 1, northern pike, & 2, bluegill, show the rings in the upper (internal) portion. The lower portions are what are visible as one looks at the live fish. Pictures 3, northern pike, and 4, walleye, show cross-sections of a dorsal fin spine. Spines are much easier to age, but the preparation before aging is much more time-consuming.





Scales are read simply pressing the bony “raw” scale into plastic and reading the ridges in a microfiche. Although much quicker, scale reading has always been “90% training and experience, 10% artistic license!” Even so, two experts working separately will produce a very high data correlation. Spines are more definitive to read, but spine preparation takes many more steps and time. They have to be cut into very thin slices. The apparatus shown on the left includes a discharge fan to keep down noxious gas and dust from the plastic when the rotary tool cuts thin slices. The slice is then observed under a microscope, on the right. The microscope shown has a camera attached for keeping permanent records.

### **Fish Rearing**

Due to Viral Hemorrhagic Septicemia (VHS) fish health concerns, we did not raise any walleyes or other fish species within the unit from 2007 to 2010. Recent research has shown that walleyes eggs are relatively easy to disinfect, and that VHS transfer is from fish to fish rather than from female to her eggs. For that reason, we will begin again this summer to raise and stock walleye fingerlings. The time lag from stocking means that we will stock all of our walleye waters in both 2011 and 2012, before separating them into odd and even years. The back-to-back stocking will be an attempt to jump-start the fisheries that have lapsed due to no stocking.

During normal years, members of the Newberry crew drive hatchery trucks in the spring to help the state wide stocking effort. However, we did not drive trucks during the 2010 spring season. Spring came early, and waters warmed up fast enough that the hatchery stocking was completed before the weeks we were scheduled to drive. We are again scheduled for hatchery duty this coming spring.

### **Creel Survey**

Creel census clerks in the EUP were employed last summer and fall at Grand Marais, Munising, the St. Marys River and Cedarville. Another clerk splits time between Detour and St. Ignace. Carl Christiansen, Fisheries creel census lead worker, works out of the Newberry Office. Even so, he is gone much of the summer, filling in for or otherwise helping the several clerks. Data generated by all the clerks will be analyzed by personnel at Charlevoix. For each of those areas, we will see estimates of fishing pressure, species harvested, and catch per effort. In general, however, it seems that 2010 was pretty much an “off year” everywhere due to rain, colder temperatures and strong, variable winds. We also performed a spring netting survey on Indian Lake along with a year long creel census to assess the fishery. Once all the data is collected from the winter survey and compiled with summer data the results will be analyzed by biologists to help with management of the lake. The DNR/Fishing website has a link at the bottom of the page for sports harvest at individual ports.

## **Surveys of Interest**

The ELSMU survey schedule was reduced somewhat due to our staff helping out with surveys in both Lake Michigan and Lake Huron watersheds. Even so, we conducted more surveys during 2010 than in 2009, most of which are highlighted below. More details from every survey are available by contacting Jim Waybrant at the Newberry Operations Service Center.

### Ackerman Lake, Alger County

Ackerman Lake is a small 15 acre trout lake 2.5 mi east of the Au Train Basin. Ackerman has been stocked with rainbow trout for many decades, and is generally surveyed by U.S. Forest Service fisheries personnel. This survey documented good first-winter rainbow trout survival in Ackerman Lake. In addition, the age 2 fish were growing 1.8 inches faster than state average. Ackerman was stocked last year with 13 excess lake trout brood stock, as well as the usual rainbow trout. The current rainbow trout stocking program should be maintained.

### Deer Lake, Shelter Bay, Alger County

Northern pike were the only species growing faster than state average, while smallmouth bass were growing considerably slower than state average. There were not enough black crappies to generate a growth index, but the few fish sampled appeared to be growing faster than in 2004. Rock bass also were growing faster, but the top predators, smallmouth bass and northern pike, were both growing considerably slower than in 2004. Very little forage for the predators was documented in this survey. For that reason, predators' slower growth rates may be the result of a declining, and still hidden, forage base. Species numbers and growth rates do not yet indicate a positive change resulting from the previous tree drop efforts to enhance phytoplankton and periphyton communities. Perhaps there has not been enough time lapse for the biota to respond, or perhaps the darkly stained water precludes successful habitat manipulation to enhance the productivity. Time will tell, but productivity is critical, as it drives and supports the fish community. Walleye natural reproduction was not documented in this survey. We captured one yearling, possibly one of 1,100 fall fingerlings privately stocked in 2009. Because there is no documented natural reproduction, the stocking program will be 4,000 spring fingerlings in 2011 and 2012, and after that stocking on even years. Another survey in six or eight years, concentrating on growth rates, will tell us how to modify that stocking program in the future.

### East John Lake, Alger County

The DNRE began stocking East Johns Lake with Assinica strain brook trout spring fingerlings, concurrently with West Johns in 2007. Spring fingerlings were used because they were the cheapest way to determine whether the lakes were capable of supporting trout populations. West Johns Lake has begun producing a nice brook trout fishery, but so far there have been no positive angler comments about East Johns. Limnological profiles on 10/16/2006 and 3/22/2007 found pH readings of 5.5 and 5.1. Such low pH was assumed to be the primary reason for lack of trout angling success, as temperature and dissolved oxygen parameters were well within acceptable limits for viable trout populations. Before the final stocking decision was made, we conducted a May 3 – 7, 2010 netting survey encompassing 20 net nights, and including some shoreline fine-mesh fyke nets. The total effort resulted in capture of only 115 central mudminnows. No other fish species were captured. A less intensive follow-up netting survey occurred September, which resulted in capture of no fish at all. The two combined surveys, in conjunction with such a low pH, provide adequate data to justify cessation of further trout stocking in this lake. No further stocking or other management is planned at this time.

### West John Lake, Alger County

Angler reports during 2009 indicated that West Johns Lake had begun producing a nice brook trout fishery. In fact, one angler reported catching an 18 inch trout in 2010. A netting survey was conducted in 2010 to verify the 2009 angler reports. The survey took place in early May, before the 2010 spring fingerlings were stocked, so it could only sample previously stocked trout. Only two species were caught, brook trout and central mudminnow. The five trout were 13-15 inches, averaging 14.7 inches. They were all age 3 and were growing 2.4 in faster than state average. This was a nice trout fishery that should be maintained.

### Holland Lake, Luce County

The late April 26-28, 2010 fyke net survey was conducted to verify multi-year brook trout survival. Spring and early summer 2010 experienced a very early snow melt and then little rainfall until July. During the April survey, the secchi disk reading was 5.0 ft and the water was very green. Water level at that time was extremely low, but should have since increased considerably due to very wet conditions during the last half of the summer and fall. The survey catch was 100% Assinica brook trout. A total of 40 were caught, averaging 7.8 in, but only 3 were of harvestable size at 10+ inches. Fall fingerlings that were previously stocked on October 26, 2009 averaged 6.8 inches, 0.7 in faster than state average. The five age 2 and one age 3 trout were growing slightly faster than state average. The small number of harvestable trout was cause for concern, and the reason(s) for that relatively poor survival to ages 2 and 3 are unknown. In fact, yearlings that had already lived through the first winter should be better adapted for survival from then on, but they were not found. A potential reason for poor survival was the low lake level. However, survey evidence shows that the lake does support over-wintering trout, even at low water levels. Alternatively, the low levels might allow the lake to become too warm during hot summer months. Warmer water, degraded by green, algae-saturated water, might have produced large daily dissolved oxygen fluctuations that would make survival difficult. Those conditions, combined with an increase in delayed hooking mortality in such circumstances, might explain the low numbers. Rather than change the current stocking protocol, it seemed more appropriate to postpone any management decision until such time as the lake level comes back closer to its long term normal.

### Little Lake Harbor, Luce County

The June 14 – July 13, 2010 survey found a mix of inland and Great Lake species. Of special interest were the presence of ruffe, an invasive species, and rainbow trout since there is no tributary stream entering Little Lake Harbor. The maxi-mini fyke nets are fine mesh nets used for intensive sampling of minnow species, which resulted in capture of several forage species. White sucker numbers and percent of the catch biomass were 56 and 36%. Concurrently, 33 northern pike comprised 39% of the catch biomass. However, only 12% were legal for harvest at 24+ inches, implying heavy angling pressure and harvest. Rock bass and yellow perch were numerous but small. Three walleye were captured, compared with two in 1995, but in 2010 they were larger. Northern pike were the only species growing faster than state average. Although walleye were stocked in 1997, 1998, and 2000, those captured in 2010 were 15, 22 and 26 inch. Their presence indicates there is a small natural walleye population. The previous stocking efforts anecdotally produced an enhanced fishery, but the changes were never documented. Whether necessary or not, supplemental stocking has little potential to adversely affect the fish community because of potential movement into and out of the lake. For that reason, we will establish a six-year stocking program, with stocking on alternate years. After that time, the lake fish community should be re-assessed.

### Mud Lake, Luce County

Generally speaking, the Tahquamenon River upstream from Mud Lake supports brook trout, while downstream from Mud Lake, it supports muskellunge, pike, walleye and perch. Both smallmouth and largemouth bass exist below Mud Lake, but not in large numbers. An intensive netting survey was conducted in Mud Lake on May 24-27, 2010, with water temperature already ranging 73-78°F. Species captured were blackchin shiner, bluntnose minnow, blacknose shiner, common shiner, white sucker, golden shiner, Iowa darter, largemouth bass, northern muskellunge, northern pike, pumpkinseed sunfish, rock bass, smallmouth bass, tiger muskellunge hybrid, and yellow perch. The pike and muskellunge comprised 81% of catch biomass, of which none of the 22 muskellunge or the 1 tiger muskellunge were harvestable at 42+ inches. In contrast, 43% of the 23 northern pike were harvestable at 24+ inches. Black bass comprised 8% of catch biomass. Two of five largemouth bass and five of seven smallmouth bass were harvestable at 14+ inches. Rock bass, pumpkinseeds, and yellow perch were all quite small. Growth rates of species sampled appeared to be similar to or slightly slower than state average. This survey was designed as an in-depth look at the fish community structure of Mud Lake. There appears to be no potential for improvement in this warm, shallow “appendix” of the Tahquamenon River by management changes.

### Perch Lake, Luce County

We documented three very large, dead, partially decomposed salmonids along the Perch Lake shoreline in the fall 2009. During the winter, however, we learned that the USFS Sullivans Creek Hatchery had stocked old lake trout broodstock into Perch Lake. Still, although the fish were likely to not be splake, the episode had caught our attention. Perch Lake was surveyed in early June, 2010. Results showed equal catch biomass proportions for brown bullhead, white sucker, largemouth bass, northern pike, and rock bass. Pumpkinseed and yellow perch were present as well. There were also small numbers of bluntnose minnow and Iowa darter. Average size of most populations was good, while the yellow perch average size was quite small. Largemouth bass and yellow perch were growing slowly, while northern pike, pumpkinseed sunfish, and rock bass were all growing normally. This 2010 survey data was a strong argument against renewing the splake stocking. The broodstock lake trout were very thin, reinforcing the idea that there may be a forage issue in the lake. The fish community relative abundance appeared top-heavy toward predators. In addition, no sucker was captured smaller than 19 inch, implying that smaller suckers were all being harvested by predators. Since the fish community structure had shifted to a more balanced system since 2001, no change in management direction is anticipated at this time.

### Upper Tahquamenon River, Luce County

This site in the Tahquamenon River is the same one we had been surveying in the past, to establish an ongoing database. The 2010 survey showed the natural brook trout population in the Upper River was continuing to do very well, with large numbers and good growth, although there were few legal sized fish. The small numbers of legal trout were likely due to angling harvest. Positive angler comments again indicated that brook trout in recent years were doing well despite the intensive angling pressure and harvest. Little had changed since 2005, implying that the population dynamics had stabilized. The Upper River anecdotally appeared to be supporting a considerably increased angling harvest since 2002. There appeared to be no need for further stocking. There appear to be no management concerns at this time.

### “Upper Middle” Tahquamenon River, Luce County

The Tahquamenon River in western Luce County experiences a sharp drop in river gradient over a relatively short distance. That area of leveling out, with its resultant change in fish community composition, produced an area generally assumed to be transition waters. Higher gradient, upstream water including the “spreads” area where the river has no defined main channel, supports a brook trout dominated fish community. Lower gradient water, especially the section immediately downstream from County Road 415, supports a cool water fish community that includes northern pike, northern muskellunge, smallmouth bass, yellow perch, white suckers, and other cool water species. This survey was the first one to look at the section of river intermediate between the two distinctly different fish communities. There is no road access into the interior of the transition zone, due to a huge wetland complex that borders the Tahquamenon River throughout this section of river. The only access is via a boat driven upstream from the County Road 415 bridge. The September 9, 2010 boomshocking survey was conducted after a period of heavy rains, in order to allow boat passage as far upstream as possible. Seven species were captured, a mix of both cold and cool water species. White sucker and northern pike populations generally consisted of juveniles, while some brook trout and yellow perch were of harvestable size. Survey results indicate that this section of river is correctly categorized as a transition zone between the two distinct fish communities. There appears to be no management opportunity in the area, as this water is already functioning as a nursery/transition habitat.

### Moon Lake, Luce County

Moon Lake is providing a good trophy brook trout fishery. The seven trout caught in 2010 averaged 16.5 inches. Three of them were age 4 trout up to 19 inches. Trophy regulations are still in place, and this is a good lake to spend some quality angling time. There is, however, a public access change for 2011. This is Commercial Forest Act land, and the landowner has installed a gate across the road about 1/4 mile away from the lake. For that reason, the original carry-in access site is now a walk-in site.

### **Surveys Scheduled for 2011:**

We are planning to look at the following waters during this upcoming survey season: Au Train Lake and Basin, Kingston, Laughing Whitefish, Muskallonge, and Syphon lakes, Naomikong, Valley Spur, Mosquito and Laughing Whitefish rivers. For NLMMU, we plan to survey Duel and Millecoquin lakes, Davenport Creek, and the East Branch Fox River. If we have time, we will also look at Preacher, McKay, Deadman, and Bearfoot lakes in northeast Alger County, and LeVasseur Creek in Marquette County. Surveys we do not get to will be conducted in 2012.

### **Fall Walleye YOY Surveys:**

We do not conduct the number of fall walleye surveys that we once did. Past data had shown that survey results were very erratic. Even so, we plan to conduct night boomshocking surveys in Big Manistique Lake and Munuscong Bay of the St. Marys River. There may be some more lakes designated later in the summer for night boomshocking surveys.

### **Salmon Egg Take**

Technicians were scheduled to assist the NLHMU personnel for a week, again this past October at the Swan River Weir at Rogers City. Nothing was happening during their scheduled week, however, so they did not go downstate. They are again scheduled for this coming fall season, but weather and the salmon themselves will dictate if they have to go down or not.

## **Impoundments in 2010**

### Silver Creek Pond –

The pond was slowly drawn down through June, 2010 to remove beaver debris around the level control structure and to replace rotten stop boards. It was then kept down until August to help control some areas of dense aquatic vegetation. The pond never completely drained; there should have been some surviving brook trout and forage species as well. The pond was back up to full pool in September, and was restocked with hatchery brood stock adults and fall fingerlings in early November. The alternate-year trout stocking program had been designed to differentiate between stocked and natural trout in order to allow fine-tuning of the stocking number. For that reason, the 2010 survey was conducted in late April, before the scheduled draw down could impact the trout population. This was an extensive survey; 122 brook trout were captured, with an average size of 9.8 inches. Also caught were brook stickleback, fathead minnow, mottled sculpin, and northern redbelly dace. The brook trout comprised 96% of catch biomass, with fish present in every inch-group 2 – 18 inch. Survival was good; some age 5 trout were documented. They were also growing somewhat faster than the state average rate.

Trout stocking had been on an alternate year program since 2005, and significant natural reproduction was determined from the 2010 survey. Comparison of stocking numbers with weighted age frequencies somewhat implied a potential negative effect from stocking. Even so, the stocking program will remain unchanged until 2015, to help the trout population recover from the 2010 pond draw down. In addition to the regular stocking program, adult brood stock and fall fingerlings were both stocked in November 2010, also to help the population recover.

## **Habitat Work**

### Stream improvement

There were no stream habitat work projects undertaken during 2010. In addition, there are no new projects scheduled for the 2011 field season.

### Sand Traps

Both sand traps in the upper Tahquamenon River were cleaned out in 2010. They had not been excavated in 2009 and needed to be maintained.

## **Eco-regional Planning**

Fisheries Division continues to work with the other DNR divisions in development of an Eco-Regional Plan, a long-term, landscape scale planning process. The eco-regional plan is still being drafted, which will encompass all ownerships (public, private, and tribal) in the entire Eastern Upper Peninsula. That plan, however, is on hold while the current emphasis is on creating Management Areas in state forest lands. The regional state forest plan will be used to provide long-term management direction to DNR staff, enhance forest sustainability, and allow more opportunities for the DNR to work with private groups and other agencies. Also occurring is a Biodiversity Conservation Planning Process. The local process and resulting Biodiversity Stewardship Area designations have been completed by the EUP Eco Team and they are now being studied by the State Biodiversity Team. The eco-regional plan will be addressed again after completion of the regional state forest plan.

## **Forest Certification**

Thousands of acres of state-owned forests are managed by the DNR. The DNR has been certified for forest sustainability through two separate world-wide organizations since 2005. However, both organizations come back every summer to conduct interim, spot-check inspections. In addition, the DNR annually conducts internal inspections to make sure that everyone is following the guidelines. The result is that every year there are many inter-divisional meetings, on-site inspections, and special documentation protocols for everything we do concerning forest and habitat management. There is much interaction between the individuals and DNR divisions.

Those world-wide certifications were only good for five years. 2010 was a whole new effort, as we had to re-certify as though the first five years had never existed. Newberry was one of the Forest Management Units scheduled for a very intensive, complete audit in 2010 in order for the State of Michigan to retain that certification. Jim Waybrant spent considerably more time on the process this year, in meetings, office preparation, and in the actual audit. We passed! Michigan State Forests continue to be certified by both organizations for being managed in a sustainable manner.

## **VHS Sampling**

As part of an ongoing statewide effort to monitor the spread of VHS, fisheries personnel from the ELSMU collected fish samples from the Tahquamenon River last summer for analysis. Samples by other agencies from several areas in Lake Superior tested positive for VHS. A 2011 VHS sampling schedule will be developed before we begin our summer field work.

**A REMINDER ABOUT EXOTICS:** Exotic species such as the Zebra Mussel, Spiny Water Flea, Eurasian Water Milfoil, and others have been found in some areas around the EUP. For example, Eurasian Water Milfoil has been found in East Lake and, more recently, in Twin Lake both in Luce County. In addition, zebra Mussels were found in Twin Lake. Please take precautions to prevent the transport and introduction of these from one lake or stream to another. They can potentially do immeasurable harm to your favorite lake. Drain all water from the livewell, bilge, and transom while on land, BEFORE leaving any water body. Empty your bait bucket on land at the same time. Microscopic plant fragments or organisms can be undetectable to the human eye, but still can produce damaging populations in another lake. Clean your tackle, make sure they have no weeds adhered, as well as downriggers and other equipment. Before going to another water body, let your boat and trailer dry at least 5 days, longer is better. If you cannot wait, wash everything down with hot (at least 140°F) water thoroughly before entering new waters. If you have no access to hot water, rinse everything with a mixture of one cup of chlorine bleach in 10 gallons of water to kill all exotics.

**A REMINDER ABOUT TROUT LAKES:** The use of minnows is prohibited in all Designated Trout Lakes. This regulation is necessary to eliminate contamination by non-trout species in these single-species trout lakes. Such contamination results in poor trout survival, and eradication of non-trout species is both very expensive and labor intensive. Consult your 2011 Michigan Fishing Guide for more details.

**May your 2011 be filled with GREAT FISHING!**

Carl Christiansen, Chuck Payment, Shawn Sapp, Steve Scott, and Jim Waybrant

**Eastern Upper Peninsula fish stocking during 2010**

<b>County</b>	<b>Species</b>	<b>Water</b>	<b>Number</b>	<b>Age</b>
Alger	Bluegill	Moccasin Lake	1,153	AD
Alger	Brook Trout	Addis Lakes	1,500	SF
Alger	Brook Trout	Bette's Pond	150	FF
Alger	Brook Trout	Brian's Pond	450	FF
Alger	Brook Trout	Cheryl's Pond	330	Y
Alger	Brook Trout	Cox Pond	110	Y
Alger	Brook Trout	Irwin Lake	750	FF
Alger	Brook Trout	Johns Lake East	1,500	SF
Alger	Brook Trout	Johns Lake West	1,500	SF
Alger	Brook Trout	Kay's Pond	450	FF
Alger	Brook Trout	Mirror Lake	150	AD
Alger	Brook Trout	Rock Lake	750	FF
Alger	Brook Trout	Sawaski Pond	275	Y
Alger	Brook Trout	Sitka Lake	640	Y
Alger	Brook Trout	Trueman Lake	300	FF
Alger	Brook Trout	E. Br. Whitefish River	1,650	Y
Alger	Brook Trout	W. Br. Whitefish R	8,000	Y
Alger	Brown Trout	Au Train River	1,060	Y
Alger	Brown Trout	Big Indian River	1,100	Y
Alger	Lake Trout	Ackerman Lake	13	AD
Alger	Muskellunge, northern	Kingston Lake	300	FF
Alger	Rainbow Trout	Ackerman Lake	750	Y
Alger	Rainbow Trout	Mirror Lake	1,900	Y
Alger	Splake	Munising Bay	40,250	Y
Chippewa	Atlantic Salmon	St. Marys River	26,301	Y
Chippewa	Brook Trout	Naomikong Pond	400	FF
Chippewa	Lake Trout	Detour Reef	99,345	Y
Chippewa	Rainbow Trout	Dukes Lake	400	AD
Chippewa	Rainbow Trout	Dukes Lake	1,250	Y
Chippewa	Rainbow Trout	Highbanks Lake	1,850	Y
Chippewa	Rainbow Trout	St. Marys River	2,100	AD
Chippewa	Steelhead	St. Marys River	21,500	Y
Chippewa	Walleye	Barbeau Area	5,000	FF
Chippewa	Walleye	Brimley Bay	102,830	SF
Chippewa	Walleye	Potagannissing Bay	122,000	SF
Chippewa	Walleye	Raber Bay	1,000	FF
Luce	Brook Trout	Brockies Pond	300	FF
Luce	Brook Trout	Bullhead Lake	300	Y
Luce	Brook Trout	Dillingham lake	330	Y
Luce	Brook Trout	Holland Lake	350	FF
Luce	Brook Trout	Moon Lake	1000	FF
Luce	Brook Trout	Silver Creek Pond	200	AD
Luce	Brook Trout	Silver Creek Pond	400	FF
Luce	Brook Trout	Spring Creek Pond	600	FF
Luce	Brook Trout	Syphon Lake	325	SF

SF = spring fingerlings, FF = fall fingerlings, Y = yearlings, AD = adult

County	Species	Water	Number	Age
Luce	Brook Trout	Teaspoon Creek	225	Y
Luce	Brook Trout	W. Br. Teaspoon Cr	350	Y
Luce	Brook Trout	Youngs lake	575	SF
Luce	Brook Trout	Ward Lake	350	FF
Luce	Brown Trout	Peanut Lake	1,100	Y
Luce	Brown Trout	Tahquamenon River	4,150	Y
Luce	Rainbow Trout	Camp 8 Lake	3,400	Y
Luce	Rainbow Trout	Pratt lake	1,600	Y
Luce	Rainbow Trout	Wolverine lake	570	Y
Luce	Splake	Belle Lake 1	3,000	Y
Luce	Splake	Pretty Lake	1,000	Y
Luce	Splake	Tank Lake	2,000	Y
Luce	Steelhead	Two Hearted River	10,500	Y
Luce	Walleye	Round (N. Manistique)	680	FF
Mackinac	Brook Trout	Millecoquins Pond	600	FF
Mackinac	Brown Trout	Carp River	10,990	Y
Mackinac	Chinook Salmon	Lake Huron	39,309	SF
Mackinac	Chinook Salmon	Nunns Creek	250,767	SF
Mackinac	Rainbow Trout	Castle Rock Pond	100	AD
Mackinac	Rainbow Trout	Castle Rock Pond	660	Y
Mackinac	Rainbow Trout	South Manistique Lake	900	AD
Mackinac	Splake	Lake Huron	33,200	Y
Mackinac	Steelhead	Brevoort River	9,000	Y
Mackinac	Steelhead	Carp River	10,584	Y
Mackinac	Walleye	Epoufette Bay	74,898	SF
Mackinac	Walleye	Nunns Creek	101,178	SF
Mackinac	Walleye	St. Martins Bay	42,174	SF
Schoolcraft	Brook Trout	Driggs River	5,391	Y
Schoolcraft	Brook Trout	Dutch Fred Lake	200	AD
Schoolcraft	Brook Trout	Kings Pond	600	FF
Schoolcraft	Brook Trout	Manistique Quarry Pd	275	AD
Schoolcraft	Brook Trout	Mid Br Stutts Cr	900	Y
Schoolcraft	Brook Trout	N Br Stutts Cr	1,100	Y
Schoolcraft	Brook Trout	Neds Lake	330	Y
Schoolcraft	Brook Trout	Twilight Lake	1,320	Y
Schoolcraft	Brown Trout	Big Murphy Cr	1,180	Y
Schoolcraft	Brown Trout	Indian River	2,960	Y
Schoolcraft	Brown Trout	Manistique River	10,000	Y
Schoolcraft	Chinook Salmon	Manistique River	42,000	SF
Schoolcraft	Muskellunge, northern	McKeever Lake	200	FF
Schoolcraft	Rainbow Trout	Banana Lake	880	Y
Schoolcraft	Rainbow Trout	Bear (19) Lake	1,000	Y
Schoolcraft	Rainbow Trout	Manistique Quarry Pd	275	Y
Schoolcraft	Steelhead	Manistique River	8,800	Y
Schoolcraft	Sunfish Hybrid	Manistique Quarry Pd	1,231	AD

SF = spring fingerlings, FF = fall fingerlings, Y = yearlings, AD = adult

## Fisheries Management Units in the Upper Peninsula

Western Lake Superior,  
(WLSMU)

Eastern Lake Superior,  
(ELSMU)

Northern Lake Michigan,  
(NLMMU)

Northern Lake Huron,  
(NLHMU)

