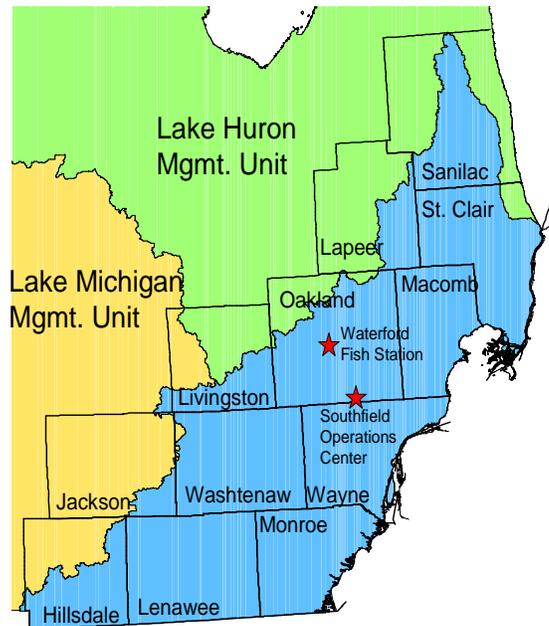




## SOUTHEAST MICHIGAN DNR FISHERIES NEWSLETTER

Welcome to the annual newsletter covering major field activities of the Lake Erie Management Unit (LEMU), shown at right. This unit covers all waters that lie within the watersheds that drain into the St. Clair River, Lake St. Clair, Detroit River, and Lake Erie. Fisheries Management personnel in this unit include two biologists and a unit supervisor located at the Southfield Operations Service Center; a creel clerk, two technicians, and a technician supervisor located at the Waterford Fish Station; and a basin coordinator stationed in Lansing.

**This newsletter highlights some of the field activities conducted by LEMU field staff during 2011.**



Map of southeast Michigan, highlighting LEMU (in blue).

### General Activities

#### Fish rearing

Since finding the fish disease Viral Hemorrhagic Septicemia (VHS) in Michigan, raising fish has not occurred in LEMU since 2006. However, the decision was made to re-initiate the walleye rearing program this past year. A combination of continued monitoring for VHS in inland waters and additional research that has found walleye to be poor carriers of the disease contributed to this decision. Walleye eggs were obtained from the Muskegon River and the fertilized eggs were transferred to Wolf Lake State Fish Hatchery. After hatching, the fry were sent back to LEMU to put into grow-out ponds. We raised walleyes at Camp Dearborn, Drayton Plains Nature Center, and Selfridge Air National Guard Base. After 45 to 50 days, the walleye fingerlings were harvested and stocked into area lakes. 2011 was a record high production year for LEMU – producing 718,000 spring fingerling walleyes and an additional 47,000 fall fingerling walleyes that were harvested when ponds were drained in the fall. A total of sixteen lakes in LEMU were stocked and surplus walleyes were sent to other management units in the state.

#### Fish stocking

No walleye were raised in LEMU from 2007-2010 and only limited numbers were available for stocking in 2009 and 2010 from other management units. This is significant because inland lakes stocked with walleye do not support natural reproduction. Thus, regular stockings are required to maintain the fisheries that have been developed. The high production in LEMU in 2011 allowed us to get back on track by stocking 16 of our 21 managed walleye lakes (the other 5 lakes were stocked last year). In addition to stocking walleye, we got our regular allotment of

rainbow trout, brown trout, steelhead, and channel catfish. See the last page of this newsletter for a stocking summary.

### **Fish ageing**

From January through March, the fisheries technicians processed biological samples collected during the previous field season. This includes determining the age of fish from scale and spine samples collected during fish surveys and the creel program in LEMU, as well as steelhead and Chinook salmon from the Great Lakes creel program and weirs. The age of the fish can be determined by magnifying either its scales or a cross section of a fin spine. Both have rings which can be counted similar to the way a tree is aged. In winter 2011, a total of 1,770 scales and spines were processed and aged by the Waterford crew.

### **VHS surveillance**

Viral Hemorrhagic Septicemia (VHS) is a viral fish disease. This disease has resulted in large fish kills in both hatcheries and in wild fish populations. VHS was first found in Michigan in Lake St. Clair in 2003. Although this disease has resulted in fish kills, there are no concerns with respect to human health. The virus can not infect humans, even if they eat fish containing the pathogen. Since 2007, Fisheries Division has routinely sampled fish from around the state to determine the distribution of this virus.

VHS surveillance continued in 2011. Fish in LEMU were tested from the Detroit River (Wayne County), Lake Hudson (Lenawee County), Stony Creek Impoundment (Macomb County), River Raisin (Monroe County), Bird Lake (Hillsdale County), and walleye production ponds. All test results were negative for the virus.

### **Koi Virus**

In June 2011, a large carp kill occurred in Kent Lake, Oakland County. Up to 500 large carp were found dead in the lake. Samples were collected and the cause of the die-off was determined to be koi herpesvirus (KHV). KHV affects common carp, goldfish, and koi and is specific to those fish species. KHV is not likely to affect native minnow species and there are no human health effects. KHV had not been previously found in wild fish samples in Michigan until this year, but was detected in a private koi pond near Grand Rapids in 2003. A second incidence was confirmed in August in Silver Lake in Oceana County. The underlying reasons for the emergence and spread of KHV in Michigan remain under investigation.

### **Great Lakes muskellunge broodstock development**

Pilot studies were done on Lake St. Clair in 2009 and the Detroit River in 2010 to determine the feasibility of catching Great Lakes strain muskellunge to start a broodstock program. The decision was made to catch muskellunge in Lake St. Clair and the Detroit River in 2011 and harvest eggs to develop the broodstock program.

Nets were fished for a total of five weeks, but very cold and wet spring weather resulted in poor catches. A total of 41 muskellunge were caught, with 4 females spawned with 6 males, providing 174,000 eggs. A total of 7,033 Great Lakes strain muskellunge were stocked in 2011. These fish were stocked into two broodstock lakes, Thornapple Lake (Barry County) and Big Bear Lake (Otsego County), and remaining fish were stocked into Ross Lake (Gladwin County).



**Don Barnard, Lake Huron fish technician, displaying a pair of smallmouth bass from the Detroit River.**

### Asian carp surveillance

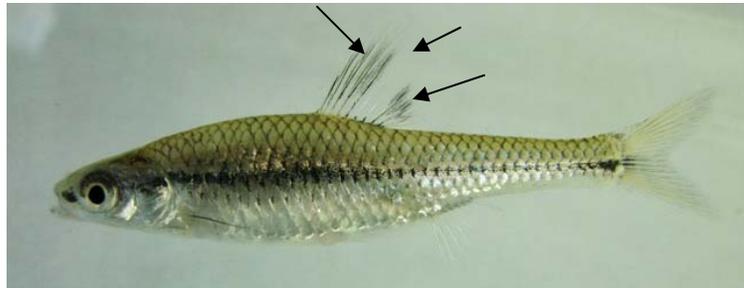
Given the spread of Asian carp in the Illinois River and their proximity to the Great Lakes, it is important to continue to monitor Great Lakes waters for this exotic species. Staff from the University of Notre Dame are evaluating water samples from around the Great Lakes for the presence of Asian carp environmental DNA. The LEMU technicians assisted in the collection of water samples from Lake Erie and staff from the Lake St. Clair Research Station assisted with sample collection from Lake St. Clair. All results were negative.

### Sterling State Park lagoons – fish survey

There are several lagoons inside Sterling State Park in Monroe County that have a direct connection to Lake Erie. A project has been funded through the Great Lakes Restoration Initiative to restore a variety of habitats in the lagoons. This includes the creation of shallow water coastal marsh habitat to benefit a variety of species including fishes, shore birds, and reptiles like the eastern fox snake.

During the planning stages of the project, we conducted a fish survey in June 2011 to evaluate the present fish community. Three sites were sampled within the lagoons using an electrofishing boat. A variety of species were caught (16 species), with largemouth bass and bluegills being the most abundant. The bass ranged in length from 3 to 18 inches, with over one-quarter exceeding the minimum size limit of 14 inches.

A species of note in this survey is the pugnose minnow, a state-listed endangered species. This is a small minnow that can reach 2 inches in length. In addition to the black stripe (from the tip of the snout across the eyes and extending to the tail), a key characteristic is the coloration of the dorsal fin – alternating between dark, clear, and dark bands. This species is common in much of its range, particularly the southeastern United States. However, at the northern end of its range, including Michigan, it is becoming rare. The pugnose minnow was historically found in southeastern Michigan, including tributaries and near shore areas of Lake St. Clair and Lake Erie.



**A pugnose minnow – note the dark, then light, then dark in the top fin.**

## Inland Lakes

### Lake Diane, Hillsdale County

Lake Diane is located on the southern edge of Hillsdale County, only one half mile north of the Ohio border. This large, man-made reservoir was created by the construction of a dam on a tributary to Clark Fork Creek. Two natural lakes located on the tributary, Goforth and Hagerman lakes, were inundated when the reservoir was created as part of a real estate venture in 1966. This lake sprawls over approximately 283 surface acres. Lake Diane is located in the Maumee River watershed and has an outlet to Clark Fork Creek at the dam noted above.

The fish community in Lake Diane has been sampled a number of times beginning in 1984. A variety of sport fish were collected including bluegill, largemouth bass, black crappie, brown bullhead, and pumpkinseeds. Black crappies were abundant, but growth rates were slow and most of the crappies ranged from 5 to 6 inches. Largemouth bass and bluegill were observed growing at or near state average rates and appeared to be in good condition. From 1984 to

1991, tiger muskellunge were stocked. The stocking program ended because these fish were no longer raised. Walleyes have been stocked regularly since 2002 and northern muskellunge since 2004. Both of these species have diversified the fishery on Lake Diane.

In spring 2011, we conducted a trap net survey to evaluate the walleye and muskellunge



**Jim Francis with a 40-inch musky from Lake Diane.**

stocking programs. We captured a total of 611 fish consisting of 12 species. Channel catfish were the most abundant with 181 individuals captured. White crappies were the next most abundant species (152), followed by muskellunge (124). The muskellunge ranged from 19 to 41 inches long. The high catch rate and good growth rates are indications that the stocking program is doing well. This is further confirmed by good reports from anglers. We also caught 34 walleyes ranging from 17 to 24 inches in length.

### **Upper Bushman Lake, Oakland County**

Upper Bushman Lake is located in north-central Oakland County, about 4 miles north of Clarkston. The lake is a series of three small connected lakes, totaling about 32 acres. Upper Bushman Lake was in private ownership until it was purchased by Oakland County Parks in fall 2010. The lake is in Independence Oaks-North County Park and was opened to the public on May 28, 2011. There is a fishing pier on the north end and carry-in boats can be used on the lake. Because the lake has been in private ownership, little information was known about the lake or its fishery.

A fish survey was conducted in May 2011, prior to the lake being opened to the public. We captured a total of 360 fish consisting of 12 species. Survey catch rates were 4-7 times higher for pumpkinseeds, 2-3 times higher for largemouth bass, and 2-4 times higher for northern pike, relative to mean catch rates in other lakes in the management unit. Growth rates were above average for older bluegills, younger largemouth bass, and all pumpkinseeds, and average for northern pike. Age-1 to age-13 largemouth bass were represented in the catch, with almost one-quarter of the catch made up of age-10 and older largemouth bass. Above average catch rates, the abundance of older fish, and the abundance of large fish are all reflective of a population with low exploitation. For a more detailed analysis, the full report is available at [http://www.michigan.gov/documents/dnr/2011-119\\_361478\\_7.pdf](http://www.michigan.gov/documents/dnr/2011-119_361478_7.pdf)

Upper Bushman Lake had very limited fishing pressure for many years. This has led to a unique fishery containing many large fish, creating an opportunity to manage this lake differently. MDNR-Fisheries Division, in cooperation with Oakland County Parks will manage Upper Bushman Lake with catch-and-release only regulations beginning April 1, 2012. The goal of this special regulation is to maintain the high quality fishery that currently exists on Upper Bushman Lake. Evidence shows that when unexploited populations are opened to fishing, length and age frequency distributions typically shift toward smaller and younger fish, and total mortality increases as a result of increased fishing mortality. Under general fishing regulations, the quality of the fishery on Upper Bushman Lake would be reduced in a very short time.

**Bird Lake, Hillsdale County**

This 114-acre lake is located in central Hillsdale County, approximately twelve miles southeast of the city of Hillsdale. There are several small springs that inlet into Bird Lake and one outlet to Bird Creek.

Bird Lake has a long stocking history, beginning with several varieties of warm water fish species from the mid-1930s to the late 1940s. From the late 1940s to the mid-1960s, Bird Lake was stocked with legal-sized rainbow trout with good results. Yearling rainbows were stocked from 1966 through 1970, but this popular stocking program was discontinued shortly thereafter because of deteriorating water quality. Bird Lake has had a history of water pollution from failed septic systems. In the summer of 1987, a modern sewer system was installed around this lake. A limnological survey conducted in 1991 indicated that favorable temperatures and oxygen levels existed for rainbow trout survival. In spring 1992, annual rainbow trout stocking was resumed and has resulted in a very popular trout fishery. Subsequent hook-and-line evaluations of trout survival have resulted in excellent numbers of healthy rainbow trout. In addition to the trout program, Bird Lake has a reputation for producing large bluegills. Redear sunfish were introduced into Bird Lake in 1991 and were stocked again in 1993.

The fish survey in spring 2011 used a variety of sampling gear including large-mesh fyke nets, small-mesh fyke nets, seining, and electrofishing. The sampling effort produced a total of 1,228 fish consisting of 21 species. Bluegills dominated the catch with 550 individuals captured, followed by bluntnose minnows (344), and largemouth bass (81). We also caught 53 yellow perch with 62% being 7 inches or longer which is a good catch. We caught 9 rainbow trout ranging in size from 7 to 15 inches. This is a good catch of trout and the presence of the larger trout indicates good survival. We spoke to several anglers during the survey who were doing well targeting trout. Surprisingly, no redear sunfish were captured during this survey.

**Stony Creek Impoundment, Macomb County**

Stony Creek Impoundment is a shallow, 497 acre impoundment located in northwest Macomb County. The impoundment is contained within the boundaries of Stony Creek Metropark. There is a fishing pier, good shore fishing access around the lake, and a public boat launch.

Stony Creek Impoundment has been stocked with walleye since 1988 with good success. The most recent stockings have ranged from 28,000 to 37,000 spring fingerlings. The current plan calls for stocking walleye on an alternate year cycle. Channel catfish stocked sometime in the 1970s created a fishable population. Catfish have been stocked intermittently since 1996 to maintain the catfish fishery.

A fish survey was conducted on Stony Creek in June 2011. We captured a total of 3,701 fish with 24 species represented. Bluegills were the most abundant fish caught, contributing 63% of the total catch by number. We used small mesh nets to capture 1 and 2

year old fish and these individuals made up the bulk of the bluegill catch. That being said, 28% of the bluegills exceeded 6 inches. The next most abundant fish caught were pumpkinseeds



**A big bluegill from Stony Creek.**

(427), with 1 and 2 year olds making up the bulk of the catch. We caught a total of 115 black crappies and they averaged 7 inches in length. White crappies were also present and were on average, larger than the black crappies. A whopping 70% were 8 inches or larger. The largemouth bass we caught were mostly 2-3 years old with only 3 of the 116 bass exceeding the minimum legal size of 14 inches. Due to warmer water temperatures during this survey, the catch of northern pike and walleyes was low. Four pike were caught (2 exceeded the minimum legal size of 24 inches) and two walleye (both exceeded 15 inches). A new-comer to the lake is the exotic round goby. These were likely introduced through the dumping of bait buckets into the lake.

## Streams and Rivers

### Meldrum Drain, Macomb County

Meldrum Drain originates in the northern portion of Chesterfield Township, Macomb County and it flows a distance of 4.2 miles before it empties into Lake St. Clair, at the confluence with the Salt River. Sections of the stream have been re-routed or piped under ground as a result of land development. A fish community survey was conducted on Meldrum Drain using a backpack electrofishing unit on March 31, 2011. The purpose of the survey was to characterize the fish community at two sites in the lower section of the stream.

At the first site, a total of 676 fish were caught, representing 15 species. Rock bass (54%), bluntnose minnows (25%), and pumpkinseeds (14%) accounted for over 90% of the catch by number. All of the rock bass and pumpkinseeds, as well as the other sport fish species like bluegill, largemouth bass, and yellow perch were all age-1 based on size.

A total of 75 fish were caught at the second site, representing 10 species. Bluntnose minnows, rock bass, and pumpkinseeds made up the majority of the catch, accounting for 80% by number.

There were distinct differences in habitat and catch between sites. The downstream site had a firm clay bottom, pool, riffle, and run type habitat, in-stream structure, and a closed canopy over the stream, compared to the upstream site which had a foot of silt covering the bottom, only run type habitat, no in-stream structure, and a completely open canopy. Even though the sites are relatively close in proximity, it is not surprising to see differences in catch given the distinct habitat differences between sites.

A variety of species caught in Meldrum Drain, including emerald shiners, spottail shiners, round gobies, and tubenose gobies, are generally more associated with Lake St. Clair than a small inland stream. Their presence in Meldrum Drain is an indicator that fish are moving between Lake St. Clair and the drain. Banded killifish is a species that is present in transition areas between streams and adjoining Great Lakes and was present in good numbers at both sites.



**Banded killifish can be found throughout the lower peninsula and southern part of the upper peninsula. They prefer shallow and quiet areas of lakes, ponds, rivers and estuaries.**

Small streams like Meldrum Drain are important tributaries to Lake St. Clair.

They provide required spawning and nursery habitat for a number of sport and forage species, and provide unique habitat for species like banded killifish which live in transition areas between

inland waters and large lakes. These streams need protection from degradation to maintain these fisheries. The continued urbanization of this area will put additional pressure on these resources. Caution must be used to ensure that the incremental and cumulative affects of changing land use do not alter the flow and habitat. Changes in habitat would have a negative effect on the aquatic communities of these streams and Lake St. Clair.

### **Auvase Creek, Macomb County**

Auvase Creek is a small tributary to Lake St. Clair located in Chesterfield Township in southeast Macomb County. The creek begins at the confluence of Harmes and Sutherland Oemig drains, and there are a number of small drains, including Brandenburg, Wacker, Pitts, and Fuller drains which are all tributary to Harmes Drain. Auvase Creek only runs approximately  $\frac{3}{4}$  of a mile before entering Lake St. Clair. The land use in the watershed is primarily urban with some industrial use.

A fish survey conducted in Auvase Creek in 2006 found a diverse fish community, including species common to both inland streams and species found in Lake St. Clair. The catch was dominated by yearling fishes, indicating the importance of this stream in providing juvenile fish habitat.

A fish community survey was conducted on Auvase Creek using a backpack electrofishing unit on March 31, 2011. A total of 690 fish were caught, representing 13 species. The species diversity was high given the small size of this stream; although three species - pumpkinseed, rock bass, and bluntnose minnow, accounted for over 90% of the total catch by number. The catch was dominated by yearling fishes (based on fish size), indicating the importance of this stream in providing juvenile fish habitat. A variety of species caught in Auvase Creek, including spottail shiner, brook silverside, largemouth bass, yellow perch, round goby, and tubenose goby, are generally more associated with Lake St. Clair than a small inland stream. Their presence in Auvase Creek is an indicator that fish are moving between Lake St. Clair and the creek.

### **Howe-Brandymore Drain, St. Clair County**

This small creek originates in the Fort Gratiot area of St. Clair County and flows generally eastward a distance of 9 miles until it connects into the Black River Canal north of Port Huron. The upper half of the watershed is largely agricultural with some single-family home development and the lower half of the watershed is largely agricultural, residential, and commercial development.

We conducted a fish survey on Howe-Brandymore Drain on May 5, 2011 using a backpack electrofishing unit. Three sites were surveyed, producing a total of 354 fish with 23 species present. There was a decrease in the catch rate among sites moving from downstream to upstream. The catch rate at the most downstream site was over twice as high as the middle site and almost three times as high as the upstream site. Part of this difference can be attributed to the smaller stream size supporting less fish as you proceed upstream. However, the more significant factor was that the habitat was less diverse moving from downstream to upstream.

In addition to a shift in catch rate from downstream to upstream, there was also a difference in the type of fish. There was an inverse relationship as you move upstream, with a decline in the proportion of "intolerant" species and an increase in the proportion of "tolerant" species. Fish at the most upstream site were dominated by hardy species that can with stand a variety of environmental conditions.

Of note, we caught 19 brown trout and a rainbow trout at the downstream site and 6 brown trout at the middle site. Catching trout in this stream is interesting given that water temperatures get too warm in summer to support trout. Examination of the fins showed some irregularities in the dorsal fin, which is consistent with the fish produced in our hatcheries. Brown trout were stocked in the Black River (50,000 brown trout) at the boating access site near I-94 on April 6, 2011 and are the most likely source of the brown trout caught at the first site. This stocking location is approximately 2 miles downstream of the Black River Canal. There was also a stocking of 50,000 brown trout in the North Channel of the St. Clair River near Algonac on April 4, 2011, but these are less likely to be the source. The source of the rainbow trout was likely the steelhead stocking that occurred in Mill Creek on April 14, 2011, which is a tributary to the Black River. This use of small tributary streams by stocked trout was found at other locations, like Cuttle Creek on the St. Clair River. These tributaries provide shelter from predators and provide forage. It is expected that these trout will move out of these small tributaries as the water temperatures begin to increase during spring.

The Howe-Brandymore Drain has been heavily altered by previous dredging projects. This includes straightening of the river and simplification of the channel shape, which has resulted in the loss of riffle-pool-run sequences. The goal of drainage projects is to drain water away quickly to alleviate flooding. However, this alters the natural hydrology of the river, further affecting habitat. For example, increased current in the stream during rain events has resulted in erosion of the stream bed. This erosion simplifies habitat in the stream and disconnects the stream from its floodplain. These changes affect fish habitat and the type of fish community that this stream can support.

#### **Fistler Drain, Macomb County**

Fistler Drain is a small stream (averaged 7 feet wide with depths ranging from 2 to 12 inches) originating southwest of the town of Richmond and flows south until it empties into the Salt River. A fish survey was done on Fistler Drain on August 26, 2011 using a backpack electrofishing unit. We surveyed one site and captured a total of 182 fish with 8 species present. The stream was small and the only fish caught in good numbers were creek chubs (170).

#### **Paint Creek, Oakland County**

Paint Creek is a top-quality coldwater stream in northeast Oakland County that originates at Lake Orion and flows in a southeastern direction until it enters the Clinton River in Rochester. This creek is about 15 miles long and the average gradient is 17.7 feet per mile and is the



**A "natural" brown trout from Paint Creek.**

highest gradient area in the Clinton River watershed. Water quality is excellent with temperatures rarely exceeding the low 70s °F and usually below 70 °F even during the warmest parts of the year. The cool water temperatures are due to groundwater inflow throughout the system. Cool temperatures in the upper

portions of the stream are maintained by the bottom draw structure at Lake Orion that was installed in 1991 and counteracts the warm surface water flowing over the Lake Orion dam. The combination of high gradient, good potential for groundwater inflow, and abundant public access make this one of the best river stretches in the Clinton River watershed for fisheries management activities.

The stream was stocked with brown trout a couple of times before 1950, but has been stocked with brown trout almost annually from 1953 to present day. Brown trout reproduce in Paint Creek; the goal of the annual stocking program is to supplement the natural production.

There was a significant fishing regulation change on a portion of Paint Creek beginning in 2011. The five mile stretch from Gunn Road to Tienken Road maintained the regular trout season (open from the last Saturday in April until September 30), but the tackle is restricted to artificial lures only, the daily possession limit is only 2 trout, and the minimum size limit for all trout species is 14 inches. In addition to the regulation change, a dam removal project was completed just downstream of Gunn Road during fall 2011. The goal of the current fish survey was to collect data downstream and upstream of the dam prior to its removal. Additional surveys will be done following the dam removal to evaluate the affects of the dam removal on the fish community.

At the Clarkston/Kern road site, we captured a total of 410 fish comprised of 11 species. Mottled sculpins (174), creek chubs (103), and common white suckers (46) were the most abundant species. The 27 brown trout caught ranged in size from 5-17 inches.

At the Silver Bell Road site, we captured 733 fish with 13 species present. Again, creek chub (193), mottled sculpin (167), and common white suckers (130) were the most abundant species present. The 44 brown trout captured ranged from 2-29 inches in length. We also caught 15 rainbow trout ranging from 2-7 inches. Rainbow trout are not stocked in Paint Creek and originate from steelhead reproduction in Paint Creek. We also caught 39 American brook lampreys at this site. These are native to Michigan and are non-parasitic. None were captured at the Clarkston/Kern Road site.

### **Minnow Pond Drain and Seeley Drain, Oakland County**

Minnow Pond Drain is a small creek originating in Farmington Hills and flows southeast until it enters Seeley Drain. Seeley Drain begins in Novi and flows southwest until it enters into the Upper River Rouge. The redbreast dace, a state endangered species that is only found in southeast Michigan, has been found previously in both of these streams. This survey was to evaluate the status of redbreast dace in these two streams.



**Redbreast dace can reach a maximum size of 5 inches.**

In the Minnow Pond Drain, we surveyed one site and captured 250 fish with 9 species present. Creek chub (162), blacknose dace (56), and common white sucker (12) were the most abundant species. No redbreast dace were observed.

In Seeley Drain, we surveyed 3 sites. We captured a total of 398 fish with 12 species present. Again, creek chub (237), blacknose dace (49), and common white sucker (32) were the most abundant species. No redbreast dace were captured or observed at this site either.

### **Flemming Creek, Washtenaw County**

Redbreast dace have also been found previously in Flemming Creek. Flemming Creek is a small, cool water stream with two headwater branches that originate in Salem Township in

northeastern Washtenaw County. The two branches join near the intersection of Ford and Plymouth roads in Superior Township and the stream then flows in a southerly direction east of, and roughly parallel to Dixboro Road. It passes through the University of Michigan Botanical Gardens and Radrick Farms Golf Course before crossing under Geddes Road and discharging into the Huron River about  $\frac{3}{4}$  of a mile east of Dixboro Road. We surveyed a 600 foot section that runs through the Mathaei Botanical Gardens. We did not collect any redbreast dace, but captured a total of 262 fish with 13 species represented. Mottled sculpin (120), creek chub (45), and blacknose dace (33) were the most abundant.

### **Saline River, Washtenaw County**

The Saline River originates a few miles east of Manchester in Washtenaw County and flows in a generally eastern direction through the town of Saline then southeast through Milan and eventually discharges into the River Raisin about three miles northeast of Dundee in Monroe County (with a total mainstem length of just over 45 miles). Land use within its watershed is primarily agricultural (about 65%) with the remainder equally divided between forested, non-forested, and urban land uses. Water quality is generally fair to poor with high turbidity the normal condition due to sedimentation and heavy agricultural runoff in this watershed.

Fish sampling has previously been conducted at several sites in the upper part of the Saline River watershed in 1962, 1976, 1977, and 1985. The only recorded fisheries management in this upper portion of the Saline River system was a total fish removal in the Saline Mill Pond using rotenone in the fall of 1985. This treatment extended from Austin Road downstream to the Saline Mill Pond dam and also included the lower half mile or so of the North Branch of the Saline River (downstream from Saline Waterworks Rd). Sport fish netted from the mill pond prior to the treatment were held and restocked into the pond after the treatment had been completed. The City also purchased and stocked 1,000 channel catfish fingerlings into the pond following the treatment and the DNR stocked 150 smallmouth bass (fingerlings and adults) collected from the Raisin River.

The fish surveys were conducted during August 2011 to update the fish community inventory. All sites sampled were located in the upper Saline River watershed which is separated from the rest of the system by the Saline Millpond dam. No other significant dams are known to be in this portion of the watershed, although there was one report of a dam installed illegally on the North Branch downstream of Saline Waterworks Road. Three sites were sampled on the mainstem, and three sites on tributary streams.

A total of 1,979 fish comprised of 20 different species were collected at the six sites. Creek chub (605 fish, 30% of catch) and mottled sculpin (578 fish, 29% of catch) were by far the most abundant species caught. Other minnow-like species such as blacknose dace, central stoneroller, central mudminnow, and bluntnose minnow comprised about 15 % of the total catch by number. Darter species made up another 10% of the catch while panfish and larger sport fish species also totaled about 10% of the total catch by number.

### **Koch Warner Drain, Washtenaw County**

The Koch Warner Drain is a small tributary to the Saline River in south-central Washtenaw County. It discharges into the Saline River just south of the city of Saline about 1.5 miles downstream of the Saline millpond dam.

There is no indication in the Fisheries Division files that any fish sampling or fisheries management has ever been conducted on this stream. Macroinvertebrate and habitat sampling was conducted at two locations on this stream by Water Bureau of the Michigan Department of

Natural Resources and Environment in July of 2008. Habitat at the sites was rated as good or marginal and the macroinvertebrate community was rated as acceptable at both sites. A fish survey was done on Koch Warner Drain on August 22, 2011 as part of an effort to update fish inventory records for the Saline River watershed. The drain had very cold water temperatures for this time of year (58-60°F) which indicates it has a strong groundwater component. Water clarity was excellent. Stream width averaged just 7 feet in the 300 feet of stream sampled with water depths ranging from 6 to 18 inches and bottom substrates primarily soft sand with some silt. Shore vegetation was primarily overhanging grasses and brush with a few trees in a narrow band along the bank, with mowed lawn immediately behind.

A total of 36 fish comprised of 7 species were collected. The most abundant species was mottled sculpin (17 fish). The other species included: 4 each of blacknose dace, bluegill, and largemouth bass; 3 creek chub and white sucker; and 1 central mudminnow. All fish were small. The scarcity of species found is likely attributable to the lack of habitat variability in the section of stream sampled. The stream was almost uniformly a soft sand bottom with overhanging grasses and a few trees along the bank. Water temperature was also a little colder than that preferred by many of the other fish species found in other parts of the system.

### **River Raisin, Monroe County**

There are a series of dams on the lower River Raisin, just upstream of Lake Erie, which prevents the movement of fish. In 2012, a project funded through the Great Lakes Restoration Initiative will restore fish passage at six dams on the lower River Raisin. The goal is to reconnect 24 miles of river from Lake Erie up to Dundee, Michigan. This will be the first time that there will be fish passage this far up the river since the 1930s.

We conducted a fish survey on the lower River Raisin in downtown Monroe on October 20, 2011 to evaluate the fish community prior to the fish passage project. Two sites were surveyed and the most abundant species were bluntnose minnows, striped shiners, smallmouth bass, rosyface shiners, and rock bass. A follow-up survey will be completed after the fish passage project is completed to evaluate changes in the fish community.

### **River Raisin, Washtenaw County**

The Austin Road site is located on the eastern edge of the Village of Manchester in southwestern Washtenaw County, just downstream of the Manchester Mill Pond Dam. A fish survey was done at this site in 1984 using rotenone. Fish species present in abundance included striped shiner, smallmouth bass, northern hog sucker, black redhorse, stonecat, and spotfin shiner. Very few legal-sized smallmouth bass were found (1 of 152 fish) and the only other large fish present were the various sucker species. Species diversity was high (24 species) with several species requiring good water quality. A 2007 electrofishing survey collected 473 fish comprised of 25 different species including 71 smallmouth bass. Striped shiners were the most numerous species (122 fish) with large numbers of northern hog sucker and river chub also present (69 and 65 fish, respectively). In addition, we caught 10 silver shiners, which is a state-listed endangered species. The 71 smallmouth bass caught in this survey ranged from 2 to 16 inches, with 3 exceeding the minimum legal size limit of 14 inches.

This site is a long-term index site for monitoring trends in smallmouth bass. During the 2011 fish survey, only smallmouth bass were targeted. We caught a total of 66 smallmouth bass ranging from 2-16 inches and averaging 5.7 inches in length. Three exceeded the minimum legal length of 14 inches. Over one half of the smallmouth bass catch was made up of young-of-year fish, indicating good reproduction in this section of stream. The density and size range of smallmouth bass was virtually identical to that found in the 2007 survey. Other observations made during

the survey included the presence of many silver shiners and the presence of 9 species of native mussels, indicating good water quality.

**Huron River, Washtenaw County**

This section of the Huron River is located in Dexter Township in northern Washtenaw County about 4 miles northwest of the Village of Dexter. It is within the Hudson Mills Metropark, which provides good public access to the river. This site is another long-term index site for monitoring trends in smallmouth bass.

In 2005, a total of 49 smallmouth bass were collected during the electrofishing survey. The bass ranged from 3 to 17 inches, with an average length of 5.8 inches. Ten percent of the catch exceeded the minimum legal size limit of 14 inches. There was an abundance of young fish, with 80% being young-of-year. Although not enough fish were collected to determine growth with any statistical significance, the data obtained from scale samples indicated growth was about equal to the state average.

The fish community was highly diverse with 23 species observed during the 2005 survey. High diversity is an indicator of good water quality. Further, several species of mussels in relatively high numbers were also observed. Robust mussel populations are less rare in area streams as invasive, exotic mussel species like zebra mussels and Asian clam continue to spread.

During the 2011 survey, only smallmouth bass were collected. We caught a total of 24 smallmouth bass ranging from 4-18 inches with 25% exceeding the legal size of 14 inches. They averaged 10.8 inches in length, which seems high relative to previous years, but we only caught 1 young-of-year bass in the current survey. The lack of small bass in the catch may be due to high water levels in the Huron River during the survey. Smaller fish are more difficult to see in deeper, swifter water and may have pushed young fish into different habitats.

**River Raisin @ Wilbur Road**

This sampling site was part of the smallmouth bass monitoring program, but was selected randomly and will only be sampled this year. On September 1, 2011 we conducted a stream electrofishing survey at this site, beginning at the Wilbur Road Bridge and proceeding 1,200 feet upstream.

We captured a total of 414 fish with 28 species present. River chub (84) was the most abundant species, followed by northern hog sucker (56), striped shiner (53), and rock bass (50). Only seven smallmouth bass were caught ranging from 3-18 inches, with two being legal-sized. Three northern pike and 8 largemouth bass were also captured with one of each species being legal sized. The species diversity of this site is tremendous and indicates good water quality.

**Staff Updates**

We have had a few new additions to the LEMU staff in 2011. Beginning in February, Liz Hay-Chmielewski took over as the LEMU Fisheries Supervisor. Liz has been with the state for twenty-five years and began her career in Southeast Michigan. She has bachelor of science degree from the University of Guelph and a master's degree in fisheries from the University of Michigan.

In July, we had a new creel clerk begin work on our Lake Erie ports – Shawn Spilak. Shawn is a graduate of Adrian College and transferred from the Traverse City area. If you fish out of Sterling State Park or Bolles Harbor, you have probably been interviewed by Shawn. The information he collects is used to manage the Lake Erie yellow perch and walleye fisheries.

In September, Todd Kalish took over as the LEMU Basin Coordinator. Todd has fisheries degrees from the University of Wisconsin, both Madison and LaCrosse and began his career with the US Forest Service in Nevada City, CA. Todd has been part of Michigan DNR-Fisheries Division since 2003, first as a biologist in Traverse City, then as a unit manager in Newberry, and as a unit manager in Cadillac.



**Todd Kalish holding the state record brown trout.**

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Written and edited by: Dennis Tar and Jim Francis

For more information about LEMU programs and activities or for copies of fish surveys on area lakes, contact us at:

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Please send comments or suggestions regarding the newsletter to [francisj@michigan.gov](mailto:francisj@michigan.gov)

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## Summary of fish stocking in LEMU, 2011.

Species	County	Water	Number	Avg. size (inch)
Brown Trout	Hillsdale	St. Joe Maumee	2,600	6.3
	Livingston	Spring Mill Pond	400	10.6
	Livingston	Spring Mill Pond	400	17-20
	Oakland	Clinton River	1,500	10.6
	Oakland	Clinton River	4,500	4.8
	Oakland	Huron River	400	10.6
	Oakland	Huron River	2,066	17-20
	Oakland	Paint Creek	5,600	4.8
	St. Clair	Black River	50,000	4.6
	St. Clair	St. Clair River	50,000	4.6
	Wayne	Johnson Creek	4,000	4.8
Rainbow Trout	Hillsdale	Bear Lake	9,400	6.3
	Hillsdale	Bird Lake	9,400	6.2
	Lenawee	Allens Lake	3,800	6.2
	Lenawee	Deep Lake	2,800	6.3
	Livingston	Appleton Lake	2,800	6.6
	Livingston	Spring Mill Pond	403	19.2
	Oakland	Huron River	1,151	16-19
	Oakland	Maceday Lake	12,400	6.6
Steelhead	Macomb	Clinton River	27,911	6.7
	St. Clair	Belle River	18,615	7.5
	St. Clair	Mill Creek	10,001	7.7
	Wayne	Huron River	61,445	6.7
Splake	Oakland	Maceday Lake	10,300	7.4
Lake Trout	Oakland	Maceday Lake	270	28
Channel Catfish	Lenawee	Globe and Standish Mill Ponds	1,636	9.0
	Lenawee	River Raisin	30,000	3.2
	Livingston	Huron River	1,242	9.0
Walleye	Hillsdale	Lake Diane	35,807	1.8
	Lenawee	Devils Lake	145,127	1.3
	Lenawee	Lake Hudson	15,137	1.8
	Livingston	Strawberry Lake	26,513	1.3
	Livingston	Woodland Lake	13,183	4.1
	Macomb	Stony Creek Lake	31,130	1.8
	Oakland	Big Lake	17,236	1.1
	Oakland	Cass Lake	131,500	1.3
	Oakland	Kent Lake	32,108	1.8
	Oakland	Lake Orion	76,321	1.8
	Oakland	Lakeville Lake	20,275	4.1
	Oakland	Long Lake	14,658	1.8
	Oakland	Pontiac Lake	13,288	4.1
	Oakland	Union Lake	98,597	1.2
	Oakland	White Lake	12,415	1.8
	Washtenaw	Big Portage Lake	81,732	1.4