

## **An Overview of the Southern Lake Michigan Management Unit Walleye Rearing and Stocking Program**

The broodstock source for the majority of the walleyes raised and stocked into Michigan's Lower Peninsula waters come from the Muskegon River. With an estimated spawning population of approximately 40,000, the Muskegon River boasts the largest walleye spawning run in Lake Michigan south of Green Bay. While many of these fish spend the majority of the year in Muskegon Lake, a large portion migrate along the shores between Indiana and Leland before returning each year to spawn. During 4-5 days in late March and early April, crews from Southern Lake Michigan Management Unit (SLMMU) electro-shock walleye below Croton Dam and bring them to shore for hatchery crews to spawn. After the spawning process, the fish are released back into the river unharmed. Fertilized eggs are then transported to Wolf Lake and Platte River State Fish Hatcheries for incubation. After approximately 3 weeks, newly hatched fry are stocked into rearing ponds or stocked directly in rivers and lakes throughout Michigan's Lower Peninsula.

In the SLMMU, walleye are stocked into waterbodies as 2-3 day old fry, 35-45 day old spring fingerlings (sf), or 5 month old fall fingerlings (ff). Younger fish are less expensive to stock but they also have lower survival rates. Thus, stocking sites receiving fry typically receive 250,000 to several million fish, while sf stocking sites typically range between 10,000 to 50,000 fish and ff usually between 500 to 2,500 fish. In SLMMU, several million walleye fry are stocked biennially in the Grand and Kalamazoo Rivers while some of our larger sf plants (100,000-200,000) occur in the St Joseph River, along with Muskegon Lake and White Lake in the Central Lake Michigan Management Unit (CLMMU). In all, about 35 waterbodies are stocked with walleye in the SLMMU with additional fish from our ponds stocked in many CLMMU waters. In addition to our walleye program, several lake associations and fishing clubs obtain permits to purchase ff walleye from certified private aquaculture facilities to stock in public and private lakes.

Southern Lake Michigan Management Unit operates 6 walleye rearing ponds and 4 fathead minnow forage ponds. We partner with the West Michigan Walleye Club (WMWC) and the White Lake Area Sportfishing Association (WLASA) in the raising of walleye at two of these ponds. We also have cooperative agreements with clubs that raise additional walleye in ponds for Lake Macatawa (Holland Fish and Game Club) and Gun Lake (Gun Lake Protective Association). Walleye are raised to spring fingerling, fall fingerling or both life stages in these 6 rearing ponds. Soy/alfalfa meal is applied to the walleye ponds at a rate of 100lbs/acre prior to and during the walleye growing cycle to encourage phytoplankton growth, and in turn, zooplankton growth. Zooplankton provide the main food source for sf walleye while aquatic invertebrates and fathead minnows are the primary food source for walleye raised to the ff stage.

Jackson rearing pond is located north of Jackson on Michigan Department of Corrections property. It is a 15 acre drainable pond which is filled with water pumped from the Grand River. The pond is stocked with 500,000 walleye fry in late April and harvested around the last week in May. The average yearly production (2015-2019) is 345,000 sf walleye at 1.3 inches. Harvest is done with maxi-mini fyke nets over 3 to 4 days with the remaining fish in the pond released into the Grand River. Currently, only sf walleye are raised at this pond.

Muskegon rearing pond is located in the Muskegon State Game Area and we partner with the WLASA for walleye rearing here. It is also a 15 acre drainable pond with water pumped from the Muskegon river. The pond is typically stocked with 1 million walleye fry in late April and harvested around the first week in June. The average yearly production (2015-2019) is 537,000 sf walleye at 1.3 inches. Harvest is done with maxi-mini fyke nets over 4 to 5 days with the remaining fish in the pond released into the Muskegon River. Along with this yearly pond release into the river, approximately 200,000 sf walleye are stocked into Muskegon Lake every other year to maintain the broodstock population. Walleye from this pond are typically stocked in SLMMU and Central Lake Michigan Management Unit (CLMMU) lakes and rivers. Only sf walleye are raised at the Muskegon pond.

Belmont rearing pond is located north of Grand Rapids near the town of Belmont. It is a 6.5 acre drainable pond which is fed by springs and a seasonal fill pond we create from an adjacent stream. A small adjacent pond is managed for fathead minnow production. We partner with the WMWC in the operation of these ponds and this pond complex has been involved in fish rearing for the state since the early 20<sup>th</sup> century. Starting in 2017, we converted Belmont walleye pond from a sf pond to a ff rearing pond. Fathead minnows are stocked into both ponds in late April. In late May-early June, we stock approximately 50,000 – 70,000 sf walleye harvested from Jackson Pond into Belmont Pond at 1.1-1.5 inches in length. Fathead minnows stocked in both ponds reproduce all summer providing forage for the growing walleyes. Eventually, the walleyes grow large enough to consume the adult fathead minnows. Juvenile fathead minnows are moved from the forage pond to the walleye pond throughout the summer, followed by the adult fatheads in September. The walleye ff harvest usually takes place the first full week in October and is done by netting followed by draining into a collection box. The average harvest from 2014-2019 has been 6,200 fish at 5.8 inches.

SLMMU also operates 3 small (<4 acre) ff walleye ponds and a fathead minnow pond at Wolf Lake State Fish Hatchery (WLSFH). Walleye fry are stocked in late April, followed shortly by adult fathead minnows. As with Belmont pond, the fathead minnows reproduce in the ponds providing the walleye with suitable size prey at the time of conversion to a fish diet. As the walleye get larger throughout the summer, they eat all the juvenile and adult fatheads. These ponds are also given additional amounts of fatheads from the forage pond on site in July to September. The walleye harvest typically occurs the second full week in October and is done by pond draining into collection boxes. The average harvest from 2014-2019 for these ponds combined has been 4,300 fish at 6.6 inches.

In 2018, two additional fathead minnow ponds became available at the Todd Farm (Allegan State Game Area). The goal of these small, 1.2-1.5 acre ponds is to produce several hundred pounds of fatheads yearly. We net these ponds occasionally from July-September and transfer minnows to our walleye ponds at Wolf Lake and Belmont.

SLMMU's walleye ff program was started in 2013 with the goal of raising larger fish to stock in lakes where survival of much smaller sf walleye was low. Survival of larger ff walleye appears to be substantially higher, but comes at a higher cost in terms of money and effort. For the most part, these ff ponds are managed extensively by letting minnows breed and produce more forage. However, producing quality ff walleye in both size and numbers requires purchasing and moving

minnows from forage ponds to the walleye ponds in mid-late summer along with pond maintenance duties in spring and fall. The WMWC has been instrumental in keeping our costs and labor lower at the Belmont pond while helping us achieve a relatively consistent yearly harvest.

In 2015 we began clipping the pelvic fins of ff walleye stocked into some of our lakes. This stemmed from discussions with other staff throughout the state for a need to obtain more known-age fish to update statewide walleye growth charts and for fish ageing training purposes. Walleye can be difficult to age, especially as they get older and their growth rings become less distinguishable. Walleye growth can also be highly variable across waterbodies and regions. Fish age and length are used to calculate growth rates which, in turn, help in the stocking evaluation of a waterbody. This is a great opportunity to help Fisheries Division and our management unit needs with little additional time and effort. As of 2019, we have surveyed two lakes in the SLMMU where these fin-clipped walleye were stocked and plan in the future to continue surveying one lake early each spring.

The most effective walleye surveys on our lakes occur soon after ice-out and last a few short weeks. Due to this narrow time frame and other fisheries commitments (including the walleye egg take on the Muskegon River), we are limited to one spring walleye evaluation per year. To further help us evaluate the success of our walleye stocking programs, we highly encourage anglers to report their catches to Sarah Carlson at the SLMMU office via phone (269-685-6853) or e-mail (carlsons4@michigan.gov). In addition, we ask that anglers look for missing pelvic fins and record lengths of fish caught in our stocked lakes. Many of these lakes have signage at the boating access sites encouraging anglers to report their catches and showing the pelvic fin locations.