



## Grass Carp early detection efforts underway for Lake Erie

For the past few years Asian Carp Regional Coordinating Committee partners have stepped up efforts to better understand the population status and distribution of grass carp in western Lake Erie. Work completed between May 30, 2017 and July 12, 2017 has led to the collection of fish eggs in the Sandusky River in Ohio, now confirmed to be grass carp eggs. The eggs were collected by representatives from U.S. Geological Survey, Ohio Department of Natural Resources and the University of Toledo, and then identified based on morphological characteristics of the eggs by the University of Toledo with confirmation by the U.S. Geological Survey. The recent discovery is not an indicator of the population size of grass carp in the Sandusky River, but it does underscore the continued need for grass carp early detection and management efforts in the area.

Current evidence suggests that grass carp, a type of Asian carp, are present in extremely low abundance in the area, making early detection a critical step in preventing the invasive fish from gaining a foothold in the environment. The collaborative efforts of Ohio Department of Natural Resources, Michigan Department of Natural Resources, U.S. Geological Survey, U.S. Fish and Wildlife Service and the Great Lakes Fishery Commission are yielding critical new information about the locations and movement patterns of grass carp.

Work to assess the potential for reproduction of grass carp in Ohio and Michigan rivers is being led by U.S. Geological Survey and the University of Toledo, with support from the Ohio Department of Natural Resources and the Michigan Department of Natural Resources. Work began in the Sandusky River

(Ohio) in 2014, the River Raisin (Michigan) in 2015, and the Maumee River (Ohio) in 2017. Research is focused on learning more about the reproductive behaviors of grass carp and identifying potential hatching locations for resulting eggs. Prior to this year, collection efforts in the Sandusky River yielded eight grass carp eggs in 2015, with no eggs collected in 2014 or 2016. With a single female grass carp able to produce up to one million eggs during spawning, the implications of finding 7,649 eggs in the Sandusky River this year are as of yet still unknown. It is important to note that no larval grass carp were found since sampling began.

Coordinated fish sampling efforts focused on the Sandusky River and Sandusky Bay by federal, provincial **Grass Carp detection efforts**

*Continued on page 6*

### In this issue...

Whitefish-tullibee netting .....	2
Initial results walleye/perch hatches.	2
Zinke signs Order to support.....	3
House committee approves SHARE	3
Island returned to tribe .....	4
Citizens can apply to serve .....	4
Oct Nat'l Hunting & Fishing month ...	4
Huntsdale SFH Open House.....	4
Surplus salmon available .....	4
IL hunters can use crossbows.....	4
USGS evaluating control for grass ...	5
Changes to lock and dam .....	5
Ceremony for Educational Fishing ...	6
Fishing regs changed at NRC mtg ...	6
Mepps Squirrel Tail Recycling.....	6
Help DEC by reporting sturgeon .....	6
GLMRIS-Brandon Rd comment .....	6
Asian Carp Monitoring Summary	7-12
Saginaw Bay fish community survey	13
Changes to Ill boat regis policies....	13
Invasive Japanese stiltgrass .....	13
Grass carp eggs in Erie tributary....	13

## Recreational fishing increased nearly 20% over past 10 years

### Preliminary findings by the USFWS also reveal increase in fishing expenditures

The U.S. Fish and Wildlife Service has released its initial report of the *2016 National Fishing, Hunting, and Wildlife-Associated Recreation* national survey. The survey, conducted every five years in partnership with the U.S. Census Bureau, shows that fishing participation is up nearly 20 percent over the last 10 years. Anglers also increased their overall spend by 2.4 percent during the past five years.

“Dedicated efforts by the [Recreational Boating & Fishing Foundation](#) (RBFF), state fish and wildlife agencies, the recreational fishing industry and independent programs have made increases in recreational fishing possible,” said [American Sportfishing Association’s](#)

(ASA) Glenn Hughes, vice president of Industry Relations. “Thanks also go to ASA’s Government Affairs team and our partners who helped ensure that legislation and policy decisions were in place to provide access, clean water and fisheries conservation which anglers need for a successful day on the water.”

Overall, fishing participation increased 8.2 percent for individuals 16 to 65 years of age over the last five years. This is the highest level of participation since 1991. Revenue from equipment purchases to all trip expenditures also increased from \$45 to \$46.1 billion in the last five years.

### Recreational fishing increased

*Continued on page 6*

## Whitefish-tullibee netting to open **Oct. 13**

Recreational netting for whitefish-tullibee opens **Oct. 13**. A \$10 license is needed to net tullibee or whitefish, and is open to Minn. residents only.

These lakes, known as Schedule II lakes, offer recreational netting on the following schedule:

- Schedule II A lakes open **Oct. 13**, and close Dec. 3.
- Schedule II B lakes open **Nov. 3**, and close Dec. 10.
- Schedule II C lakes open **Nov. 10**, and close Dec. 10.

Schedule I Lakes, which are more susceptible to factors that impact water temperatures, will be opened and closed on a 48-hour notice posted at lake accesses, other public places, and the DNR website.

The DNR recommends drying nets for 10 days or freezing for two days before moving a net to a new lake, or netting only one lake in a season. Netting in infested waters may be restricted or closed to sport netting. See fishing regulations for list of infested waters or online at [mndnr.gov/invasives/ais/infested.html](http://mndnr.gov/invasives/ais/infested.html).

A complete list of all Schedule I and II lakes, status of the seasonal openings and closures, as well as detailed netting regulations are available online at [mndnr.gov/regulations/fishing](http://mndnr.gov/regulations/fishing) or by calling the DNR at 651-296-6157 in the Twin Cities or 888-646-6367 in greater Minnesota.

About 700 people obtain permits to net for whitefish-tullibee each year. As the water temperature cools, game fish head to deeper water and whitefish-tullibee come to shallow water for fall spawning. Netting is allowed when there is little chance that game fish populations would be negatively impacted by recreational netting in shallow water.

Minnesota law restricts the size of the net and its openings; requires that netting be done in water not deeper than 6 feet unless specifically authorized; stipulates that netted fish cannot be sold; and requires that any game fish caught must be immediately returned to the lake. ✧

## Initial Results of 2017 Lake Erie Walleye and Yellow Perch Hatches

Early data gathered in the western basin of Lake Erie indicate that both the walleye and yellow perch hatches were near their annual average, according to the Ohio DNR.

Each year in August, wildlife agencies around the western basin sample the waters using bottom trawls in search of young of the year walleye and yellow perch. Data from these trawls are combined into a basin-wide index, and biologists compare the figures to previous years to estimate the success of the walleye and perch hatches. Biologists from the ODNR conducted trawling surveys at nearly 40 sampling locations across Ohio waters of the western basin. This information provides biologists with an estimate of how many young fish will enter the fishable population two years later.

Based upon results from the August trawl surveys, the 2017 yellow perch hatch was successful in Ohio waters of the western basin. Initial results found 280 yellow perch per hectare compared to the 20-year average of 300 yellow perch per hectare. Five good yellow perch hatches in a row should help the perch population in the western basin continue to rebuild and lead to quality yellow perch fishing over the next several years.

The 2017 walleye hatch was near the 20-year average in Ohio waters of the western basin. Average to excellent hatches from three of the past four years have resulted in an abundance of young walleye to complement the older and larger fish that make up the current Lake Erie walleye population. Results from Ohio's surveys found 21 walleye per hectare. The average since 1998 is 22 walleye per hectare.

During the upcoming months, Ohio and Ontario bottom trawl data will be combined to estimate the basin-wide hatches of walleye and yellow perch. These estimates will be used as part of the annual process to determine jurisdictional quotas. ✧



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### Position Statement

Representing a major interest in the aquatic resources of the Great Lakes states and the province of Ontario, the Great Lakes Sport Fishing Council is a confederation of organizations and individuals with a concern for the present and future of sport fishing, our natural resources and the ecosystem in which we live. We encourage the wise use of our resources and a search for the truth about the issues confronting us.

### Inland Seas Angler

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# Secretary Zinke signs Order to support sportsmen & enhance wildlife conservation

## Order expands access on public and private lands and promotes hunting & fishing

WASHINGTON – U.S. Secretary of the Interior Ryan Zinke, on September 15 signed [Secretarial Order 3356](#), which will support and expand hunting and fishing, enhance conservation stewardship, improve wildlife management, and increase outdoor recreation opportunities for all Americans. Secretarial Order 3356 is an extension of Secretarial Order 3347, issued on Zinke's first day, March 2, 2017. That order identified a slate of actions for the restoration of the American sportsmen conservation ethic, which was established by President Theodore Roosevelt.

The new order comes days after the U.S. Fish and Wildlife Service announced a survey that found there are 2.2 million fewer hunters in America now than in 2011. The order seeks to improve wildlife management and conservation, increase access to public lands for hunting, shooting, and fishing, and puts a new and a greater emphasis on recruiting and retaining new sportsmen conservationists, with a focus on engaging youths, veterans, minorities, and other communities that traditionally have low participation in outdoor recreation activities.

“Hunting and fishing is a cornerstone of the American tradition and hunters and fishers of America are the backbone of land and wildlife conservation,” said Secretary Zinke. “The more people we can get outdoors, the better things will be for our public lands. As someone who grew up hunting and fishing on our public lands—packing bologna sandwiches and heading out at 4AM with my dad—I know how important it is to expand access to public lands for future generations. Some of my best memories are hunting deer or reeling in rainbow trout back home in Montana, and I think every American should be able to have that experience.

“Today’s Secretarial Order is the latest example of how the Trump Administration is actively moving to support hunting and other forms of outdoor recreation on public lands. This means finding ways to expand hunting and fishing on public lands, improving access, and taking necessary actions to facilitate the enjoyment of these time-honored activities by any member of our society.”

Secretarial Order 3356 directs bureaus within the department to:

- Within 120 days produce a plan to expand access for hunting and fishing on BLM, USFWS and NPS land.
- Amend national monument management plans to ensure the public's right to hunt, fish and target shoot.
- Expand educational outreach programs for underrepresented communities such as veterans, minorities, and youth.
- In a manner that respects the rights and privacy of the owners of non-public lands, identify lands within their purview where access to Department lands, particularly access for hunting, fishing, recreational shooting, and other forms of outdoor recreation, is currently limited (including areas of Department land that may be impractical or effectively impossible to access via public roads or trails under current conditions, but where there may be an opportunity to gain access through an easement, right-of-way, or acquisition), and provide a report detailing such lands to the Deputy Secretary.
- Within 365 days, cooperate, coordinate, create, make available, and continuously update online a single “one stop” Department site database of available opportunities for

hunting, fishing, and recreational shooting on Department lands.

- Improve wildlife management through collaboration with state, Tribal, territorial, and conservation partners.
- In addition, Secretary Zinke recently made recommendations to President Trump on 27 national monuments that call for changes to some that, while still protecting the land, would also protect and expand public access to that land for citizens who want to hunt, fish, and hike and experience the joy and beauty of these special places. ✧

## US House Committee approves SHARE Act

On September 13th, the U.S. House of Representatives Committee on Natural Resources passed out House Resolution (HR) 3668; the Sportsmen's Heritage and Recreational Enhancement Act of 2017 (The SHARE Act of 2017). The SHARE Act includes expanding opportunities for hunting, fishing, recreational shooting activities (all this on Federal Land), and hearing protection. The SHARE Act takes the suppressor out of the National Firearms Act of 1934 (NFA). The NFA treats suppressors like machine guns; if the SHARE Act is passed, they will be treated like any common firearm. In other words, they will be serialized, but they can be purchased with a background check. States can undoubtedly add restrictions. If the SHARE Act is passed, suppressors will go down in price because of competition and increased production.

The National Reciprocity Act of 2017 (H.P. 39) covers national reciprocity. Ask your congressman to support that also. ✧

## Island returned to Grand Portage tribe

An island at the tip of northeastern Minnesota has been returned to the Grand Portage Band of Lake Superior Chippewa. The 142-acre Susie Island is the largest of 13 small and rocky islands in Lake Superior, just before the Canadian border. The Grand Portage Reservation was established by the 1854 Treaty of LaPointe. A large portion of land on the eastern side of Mount Josephine extending out to Pigeon Point was left out when the boundaries were drawn.

A 1982 proclamation made this north eastern point part of the Grand Portage Reservation, but portions—including Susie Island—were acquired by private land owners. Between 1973 and 1991, the Nature Conservancy worked to buy back the entirety of Susie Island from multiple land owners, preventing any commercial development there. Now under band control, human influence on the island will be kept to a minimum in order to protect areas of cultural significance as well as the natural environment. ✧

## Citizens can apply to serve on Lake of the Woods input group

Citizens interested in volunteering to discuss Lake of the Woods fish and habitat can apply to participate in the Lake of the Woods fisheries input group, according to the Minnesota DNR. Applications must be completed by **Oct. 10**, and are available at [mndnr.gov/lakeofthewoods](http://mndnr.gov/lakeofthewoods).

“Input provided by this group will be used to update the Lake of the Woods Fisheries Management Plan for 2018 to 2023,” said Phil Talmage, Baudette area fisheries supervisor. Group members will meet five or six times between December and May to cover topics including walleye and sauger management, sportfish population objectives, habitat priorities and invasive species. For more info, contact the DNR Baudette area fisheries office, 218-634-2522. ✧

## October declared National Hunting and Fishing Month

WASHINGTON – Just days before National Hunting and Fishing Day – which is held on September 23rd every year – U.S. Secretary of the Interior Ryan Zinke declared October will officially be recognized as National Hunting and Fishing Month at the Department. Zinke championed the order to recognize the lasting and positive impact of hunters and anglers on wildlife and habitat conservation in America. This order comes on the heels of several major sportsmen actions from Interior including the announcement of the [addition of 600 acres](#) of land in Arizona's Santa Teresa Mountains to make Wilderness Areas accessible for hunting and fishing.

“Hunters, anglers, and target shooters are the best conservationists who contribute so much through the Pittman-Robertson and Dingell-Johnson Acts,” said **Richard Childress**, second Vice President of the National Rifle Association, NASCAR driver, and honorary chair of Hunting and Fishing Day. “Last year, they contributed \$1.2 billion toward conservation and protecting our natural resources. We need more mentors taking young people out and teaching them to hunt and fish, so I’m glad Secretary Zinke is promoting hunting and fishing at the federal level.” ✧

## Huntsdale State Fish Hatchery Open House Oct 22

Pennsylvania is celebrating 85 years of operation of the Huntsdale State Fish Hatchery with an Open House, **October 22, 1-5 PM**, and the public is invited to attend! They'll have a variety of hands-on activities, including casting and fish-print art opportunities, a spawning demonstration, tours of the Visitor's Center, "Touch-A-Truck" displays, and more! Light refreshments will be provided while available. ✧

## Surplus salmon available again this fall

The public again this year is invited to purchase surplus salmon that has been harvested at Michigan DNR weirs located in Lower Michigan.

The DNR maintains multiple sites (weirs) where fisheries biologists and technicians collect eggs and milt (sperm) from Chinook and coho salmon for use in state fish hatcheries. Once egg-take needs are met, fish in prime physical condition are made available to the public by American-Canadian Fisheries, a private vendor.

ACF harvests the salmon for human and pet-food markets, as well as excess eggs for bait and caviar markets. All of this year's distributors are located in the northern Lower Peninsula.

The Michigan Department of Community Health recommends using caution when eating certain kinds and sizes of fish from Michigan lakes and streams. For current advisories, the Eat Safe Fish Guide should be consulted. It is available online at [michigan.gov/eatsafefish](http://michigan.gov/eatsafefish) or by contacting MDCH at 1-800-648-6942. For the list of Michigan retailers this year selling salmon harvested at DNR weirs: Michigan ✧

## All hunters in Ill. can now use crossbows during archery season

Hunters in Illinois may use crossbows during archery hunting seasons, including the Illinois Archery Deer Season and the Illinois Fall Turkey Archery Season beginning on **October 1**. Governor Bruce Rauner signed into law House Bill 2893, which amended the Illinois Wildlife Code to repeal restrictions on the use of crossbows during archery hunting seasons in Illinois. The 2017-18 season dates for archery deer and fall turkey archery hunting in Illinois are October 1, 2017 through January 14, 2018. Archery seasons will be closed November 17-19 and November 30-December 3 during the Firearm Deer Season in those counties open to firearm deer hunting. ✧

## USGS publication evaluating a control method for grass carp

Invasive fish species disrupt ecosystems and cause economic damage. Several methods have been discussed to control populations of invasive fish including the release of YY-males. YY-males are fish that have 2 male chromosomes compared to a XY-male. When YY-males mate, they only produce male (XY) offspring. This decreases the female proportion of the population and can, in theory, eradicate local populations by biasing the sex-ratio. YY-males have been used as a population control tool for brook trout in mountain streams and lakes in Idaho, USA. The YY-male control method has been discussed for grass carp in Lake Erie, North America. We developed and presented an integral projection model for grass carp to model the use of YY-males as a control method for populations in this lake. Using only the YY-male control method, we found that high levels of

YY-males would need to be released annually to control the species. Specifically, these levels were the same order of magnitude as the baseline adult population (e.g., 1000 YY-males needed to be released annually for 20 years to control a baseline adult population of 2500 grass carp). These levels may not be reasonable or obtainable for fisheries managers given the impacts of YY-males on aquatic vegetation and other constraints of natural resource management.

Over the last two decades, numerous invasive fishes have established populations throughout the United States including grass carp (*Ctenopharyngodon idella*). Different control techniques have been discussed to control populations of these species either through direct mortality or reduction of their spread. Possible control methods include acoustical conditioning, new

piscicides, commercial harvest, carbon dioxide barrier; and the release of YY-males that only produce male offspring. The YY-male approach controls populations because YY-males can only produce male offspring. If enough YY-males are in the population, the sex-ratio can become biased sufficiently that the population may collapse or be more vulnerable to other control efforts. YY-males have recently been used in mountain streams and lakes in Idaho to attempt to control invasive brook trout. Similar management approaches have been used for other invasive and noxious species such as mosquitoes (Benedict and Robinson, 2003) although not without controversy or challenges. We are specifically interested in the release of YY-males for grass carp control because the method has been discussed for controlling grass carp in Lake Erie. The full document is here: [USGS Document](#) ✧

## Changes to lock and dam aimed at stopping invasive carp

The U.S. Army Corps of Engineers has adjusted the flow of water through a Mississippi River lock and dam in southeastern Minnesota in an effort to slow the spread of invasive carp. The changes to Lock and Dam 8 near Genoa, Wis., were based on recommendations from a research team led by Peter Sorensen, a University of Minnesota professor and expert on invasive carp.

Sorensen said it's the first time the Corps of Engineers has adjusted a dam's operations to prevent the spread of an invasive species. "If we could stop them there, there would be only a very short stretch of Minnesota they'd ever get into," he said. Sorensen's research team found that the water flows through the lock and dam weren't always even.

"We figured out that they were unbalanced, and then how to correct

the balance," he said. "In the course of doing that, you take away any weak spots that the fish might be able to swim through."

- [Minnesota's largest invasive carp captured near Redwood Falls](#)

The relatively small adjustments in how the spillway gates are operated will prevent carp from moving upstream without affecting barge traffic, Sorensen said. He believes the low-cost, relatively simple changes could be replicated at other sites along the Mississippi and elsewhere.

"It's going to be much cheaper and easier if you do it proactively before they've passed through a spot and are actively breeding and moving around," Sorensen said. Researchers also have mounted underwater speakers in the lock gates to broadcast low-frequency noises that deter carp, but aren't known to affect native

species in the river and are not audible to people.

- [Report focuses on Illinois dam to keep invasive carp from Great Lakes](#)

Bighead, silver and other invasive carp have been making their way upstream since escaping into the Mississippi River in the 1970s. These large fish are voracious eaters that compete with native species and pose a threat to rivers and lakes.

While no breeding populations have been detected in Minnesota waters, individual fish have been caught in the Mississippi near the Twin Cities, the St. Croix River and the [Minnesota River](#).

According to the Minnesota Department of Natural Resources, bighead and silver carp are now abundant and reproducing in Iowa, about 100 miles south of Genoa, and are moving north. ✧

## Grass Carp detection efforts

*Continued from page 1*

and state partners were completed the week of August 28. The work complements the U.S. Fish and Wildlife Service's Early Detection and Monitoring Program for Aquatic Invasive Species, which is conducted in targeted areas throughout the Great Lakes Basin in collaboration with state partners. Future decisions about specific actions that could occur in Lake Erie will be made through the cooperative fishery management process facilitated by the Great Lakes Fishery Commission, including its Invasive Fishes Executive Committee and the Lake Erie Committee, in collaboration with the Asian Carp Regional Coordinating Committee.

Information resulting from this interagency effort will inform potential grass carp response actions in Lake Erie, and may also support efforts to reduce the risk of introduction of bighead, silver, and black carps in the Great Lakes and beyond.

Grass carp actions are described in greater detail in the [2017 Asian Carp Action Plan, Management and Control Plan for Bighead, Black, Grass, and Silver Carps in the United States](#). ✧

## Dedication Ceremony Oct. 6 for New Educational Fishing Pond at Pere Marquette State Park

GRAFTON, IL – Pere Marquette State Park will host a dedication ceremony and grand opening on Friday, **Oct. 6**, at 11:30 a.m. for the park's new Educational Fishing Pond. The new fishing pond will be used at the annual Two Rivers Family Fishing Fair every June, as well as for other park interpretive programs and Urban Fishing Program events. The new pond is located just outside of the Visitor Center in front of the Log Cabin at Pere Marquette State Park. The pond was constructed thanks to the support of individual and corporate donors. ✧

## Recreational fishing increased

*Continued from page 1*

ASA has developed tools and materials for the recreational fishing industry to further assist in the effort. The emphasis is on effectively reaching anglers through recruitment, retention and reactivation (R3) practices. Several state agencies and industry partners are already implementing these R3 practices to help achieve 60 million anglers over the next 60 months.

For more info: [USFWS](#). ✧

## Fishing regs changed at NRC meeting

The Michigan Natural Resources Commission approved several fishing regulation changes regarding the Big Island Lakes Complex in Schoolcraft County, reptile and amphibian possession and ice shanties.

The regulations are part of multiple Fisheries Orders the Michigan Department of Natural Resources uses to protect the state's aquatic resources. The Fisheries Orders include 201, 224 and 251.

[Fisheries Order 201](#) sets fishing regulations on waters within the Big Island Lake Complex in Schoolcraft County. The approved change moves the northern pike minimum size limit from 42 to 24 inches and increases the daily possession limit from one to two fish, removes reference to the muskellunge harvest tag and changes the muskellunge possession season to the first Saturday in June through November 30. This Fisheries Order takes effect April 1, 2018.

[Fisheries Order 224](#) established regulations for Michigan's reptiles and amphibians. The approved changes are administrative modifications that result in no regulation changes for anglers. This Fisheries Order takes immediate effect.

[Fisheries Order 251](#) is a new order developed to regulate the use of ice fishing shanties in Michigan. The order mirrors ice shanty regulations already listed in statute. This Fisheries Order takes immediate effect. ✧

## Mepps Squirrel Tail Recycling Program



Mepps continues to ask hunters to save their squirrel tails. The tails are used for their hand-tied, dressed hooks of their lures. They've been recycling squirrel tails for over half a century. Mepps buys fox, black, grey and red squirrel tails and will pay up to 26 cents each for tails, depending on quality and quantity. Plus, the cash value is doubled if the tails are traded for Mepps lures. For details on the Squirrel Tail Program, either visit our web site [www.mepps.com/squirrels](http://www.mepps.com/squirrels) or call 800-713-3474. ✧

## Help DEC by reporting sturgeon sightings

[Atlantic sturgeon](#) are anadromous fish, meaning they're born in freshwater but spend most of their lives at sea and return to freshwater only to spawn. Sturgeons are a primitive species that once supported a major commercial fishery. Due to overfishing, they are now protected and are listed as an endangered species. Help us by reporting live or dead sightings of sturgeons at **631-444-0462** in the Marine and Coastal District or **845-256-3073** for Hudson River sightings. ✧

## GLMRIS - Brandon Road comment period extended to **Nov 16**

Public input on the Great Lakes and Mississippi River Interbasin Study (GLMRIS) - Brandon Road Draft Integrated Feasibility Study and Environmental Impact Statement will be accepted through **November 16**. Comments may be submitted through the GLMRIS-Brandon Road website, or via traditional mail and/or hand-delivery. For more info: <http://glmr.is.anl.gov/brandon-rd/>.

✧

# 2017 August Asian Carp Monitoring Summary

**Below** is the 2017 August Asian Carp monthly summary from the crew working the Chicago Waterway System (CAWS). The goal of the summary is to provide up-to-date information on the monitoring and research projects outlined in the 2017 MRP and additional relevant Asian carp developments.

**Bottom Line:** Monitoring occurred in the CAWS and upper Illinois Waterway downstream of the Electric Dispersal Barrier in August. **NO LIVE BIGHEAD CARP OR SILVER CARP were found in any new locations immediately downstream of the Electric Dispersal Barrier.**

## Fixed, Random and Targeted Site Sampling Downstream of the Electric Dispersal Barrier

### *Electrofishing:*

- Crews from IDNR, USACE and USFWS completed 96 electrofishing runs at fixed and random sites (24 hours total) in the Lockport, Brandon Road, Dresden Island and Marseilles Pools in August.
- Crews collected 9,965 fish of 48 species.
- Nine Silver Carp were collected in the Dresden Island Pool downstream of I-55.
- Forty-seven Silver Carp were collected in the Marseilles Pool.
- **No Bighead Carp or Silver Carp were reported captured or observed in the Lockport or Brandon Road Pools.**

### *Hoop and Mini Fyke Netting:*

- Crews from IDNR set and pulled 16 hoop nets and 16 mini fykes from fixed sites in Lockport, Brandon Road, Dresden Island and Marseilles Pools in August.
- Crews collected 101 fish of 9 species during hoop net sampling and 1,313 fish of 21 species during mini fyke sampling.
- Six Bighead Carp and three Silver Carp were collected during hoop net sampling in the Marseilles Pool.
- **No Bighead Carp or Silver Carp were reported captured or observed during hoop net sampling in the Lockport, Brandon Road or Dresden Island Pools.**
- **No Bighead Carp or Silver Carp were reported captured or observed during mini fyke sampling in any of the pools.**

### *Commercial Netting:*

- Contracted commercial fishers along with assisting IDNR biologists set 37.3 miles of gill net at fixed and targeted sites in the Lockport, Brandon Road and Dresden Island Pools (including Rock Run Rookery) in August.
- Crews collected 371 fish of 14 species.
- Four Bighead Carp and two Silver Carp were collected in Rock Run Rookery.

- Twelve Silver Carp were collected in the Dresden Island Pool, approximately 5 miles upstream of I-55 (near the casino).
- Two Bighead Carp and 22 Silver Carp were collected in the Dresden Island Pool, downstream of I-55.
- **No Bighead Carp or Silver Carp were captured or observed in the Lockport or Brandon Road Pools.**

### *Small Mesh Seine:*

- Contracted commercial fishers along with assisting IDNR biologists completed nine small (5/8 inch) mesh seine hauls in August (five in the West Pit of the Marseilles Pool, four in the Dresden Island Pool).
- Crews collected 58,540 fish of 36 species, which included 53,712 Gizzard Shad <6 inches in length.
- Eighteen adult Bighead Carp and 68 adult Silver Carp were also collected in the West Pit.
- **No Bighead Carp or Silver Carp <6 inches in length were captured or observed in either pool.**

Sampling results by pool below the electric dispersal barrier through August 2017, along with same time period in 2015 and 2016 for comparison:

	Lockport		
	2015	2016	2017
Yds of Net Fished	65,750	68,200	61,000
Miles of Net Fished	37.4	38.7	34.7
Hoop Net Nights	43.1	38.4	32.6
Mini Fyke Net Nights	20.9	18.8	17.7
Electrofishing Runs	96	83	92
Electrofishing Time (hrs)	24.0	20.8	23.0
Total Asian Carp	0	0	0
Tons of AC Harvested	0	0	0

	Brandon Rd		
	2015	2016	2017
Yds of Net Fished	65,700	63,850	68,200
Miles of Net Fished	37.3	36.3	38.7
Hoop Net Nights	43.0	38.6	35.4
Mini Fyke Net Nights	21.0	19.0	18.6
Electrofishing Runs	80	91	95
Electrofishing Time (hrs)	20.0	22.8	23.8
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

	Dresden	Island	
	2015	2016	2017
Yds of Net Fished	77,950	59,700	70,300
Miles of Net Fished	44.3	33.9	39.9
Hoop Net Nights	95.6	39.1	327.4
Mini Fyke Net Nights	22.5	20.7	23.0
Electrofishing Runs	120	173	155
Electrofishing Time (hrs)	30.0	43.3	38.8
Asian Carp (AC) upstream I-55	25	11	27
AC downstream I-55	134	261	506
Total AC	159	272	533
Tons of AC Harvested	1.2	1.9	5.4

	Rock Run	Rookery	
	2015	2016	2017
Yds of Net Fished	29,450	32,250	26,950
Miles of Net Fished	16.7	18.3	15.3
Bighead Carp	170	122	156
Silver Carp	36	29	26
Total Asian Carp (AC)	206	151	182
Tons of AC Harvested	3.3	2.4	3.0

### **Barrier Defense Asian Carp Removal Project**

Barrier Defense specifically takes place in the Marseilles and Starved Rock Pools. Below is a summary of all IDNR Barrier Defense activities through August 2017, which includes the Unified Fishing Method in HMS W Pit, along with same time period in 2015 and 2016 for comparison:

	2015	2016	2017
# Days Fished	40	66	50
# Net Crew Days	184	328	276
Yards Net Fished	220,420	356,095	283,810
Miles Nets Fished	125.2	202.3	161.3
# Pound Net nights	24	67	74
# Hoop Net nights	163.8	768.7	871.8
# Bighead Carp	6,855	6,977	2,261
# Silver Carp	74,655	86,684	85,203
# Grass Carp	540	456	628
# Asian Carp (AC)	82,050	94,117	88,092
AC/1000 yds of gill net	347.0	248.0	261.8
Tons of Bighead and Silver Carp Harvested	286.8	344.6	309.0

	Marseilles		
	2015	2016	2017
Yds of Net Fished	134,590	262,375	188,310
Miles Nets Fished	76.5	149.1	107.0
Pound Net nights	24	67	74
Hoop Net nights	68.1	121.6	78.8

Mini Fyke Net Nights	23.1	18.0	21.3
Electrofishing Runs	120	116	96
Electrofishing Time (hrs)	30.0	29.0	24.0
Bighead Carp	4,495	5,211	1,227
Silver Carp	40,957	44,149	30,219
Grass Carp	75	85	56
Total Asian Carp	45,527	49,445	31,502
Tons of Bighead and Silver Carp Harvested	173.7	214.9	135.8

	Starved	Rock	
	2015	2016	2017
Yds of Net Fished	85,830	93,720	95,500
Miles Nets Fished	48.8	53.2	54.3
Hoop Net nights	141.2	683.1	823.2
Bighead Carp	2,441	1,775	1,042
Silver Carp	33,987	43,407	55,413
Grass Carp	477	402	589
Total Asian Carp	36,905	45,584	57,044
Tons of Bighead and Silver Carp Harvested	113.1	129.8	173.2

### Understanding Surrogate Fish Movement with Barriers

Tagging results for August 2017

#### Fish Tagged:

Brandon Road Pool

- Common Carp – 3
- Goldfish – 1

Dresden Island Pool/Rock Run Rookery

- Common Carp – 3
- Bigmouth Buffalo – 1
- Black Buffalo – 1
- Smallmouth Buffalo – 23

Total – 32 fish tagged

#### Recaptures:

Dresden Island Pool

- Smallmouth Buffalo – 3

- No fish demonstrated movement between pools

### Unconventional Gear Development

INHS evaluated alternative pound net configurations at the Material Service backwater located near Morris, IL during the week of August 14. Pound nets have previously been used to block entire channels, but they have the potential to be used in larger, open-water areas as well. INHS staff set one pound net perpendicular to shore and another parallel to shore to compare catch rates and species composition between these alignments. Pound nets were set on August 14 and fished until August 18. Nets were attended daily, at which time all fish were removed, measured, and weighed. Catch rates during this week were extremely low compared to previous years' pound net efforts at the Material Service area, potentially due to the extensive Asian carp removal efforts that have been conducted in this area this year. Only 81 total fish were captured, including 6 Asian carp (3 Bighead Carp, 2 Silver Carp, 1 Grass Carp). More fish were



captured in the perpendicular set than in the parallel set ( $n = 48$  vs  $n = 33$ ), including all of the Bighead Carp and Silver Carp. Additional deployments will be required to adequately evaluate alternative pound net configurations, particularly in areas where Asian carp densities are higher.

Monitoring Fish Abundance, Behavior, Identification, and Fish-Barge Interactions at the Electric Dispersal Barrier, Chicago Sanitary and Ship Canal, Illinois

Barge entrainment trials occurred the last week of July and three additional weeks in August at the Electric Dispersal Barrier. Data collections included the exploration of mitigation options using several barge configurations, adjusted water velocities, observations of changes in the electrical field associated with barge passage, quantification of changes in flow dynamics within the channel associated with barge passage, the use of waterjets within the channel and observations of the behavior of wild fish near the Electric Dispersal Barrier during barge passage. Data collected is being analyzed and results are forth coming.

Distribution and movement of juvenile Asian carp

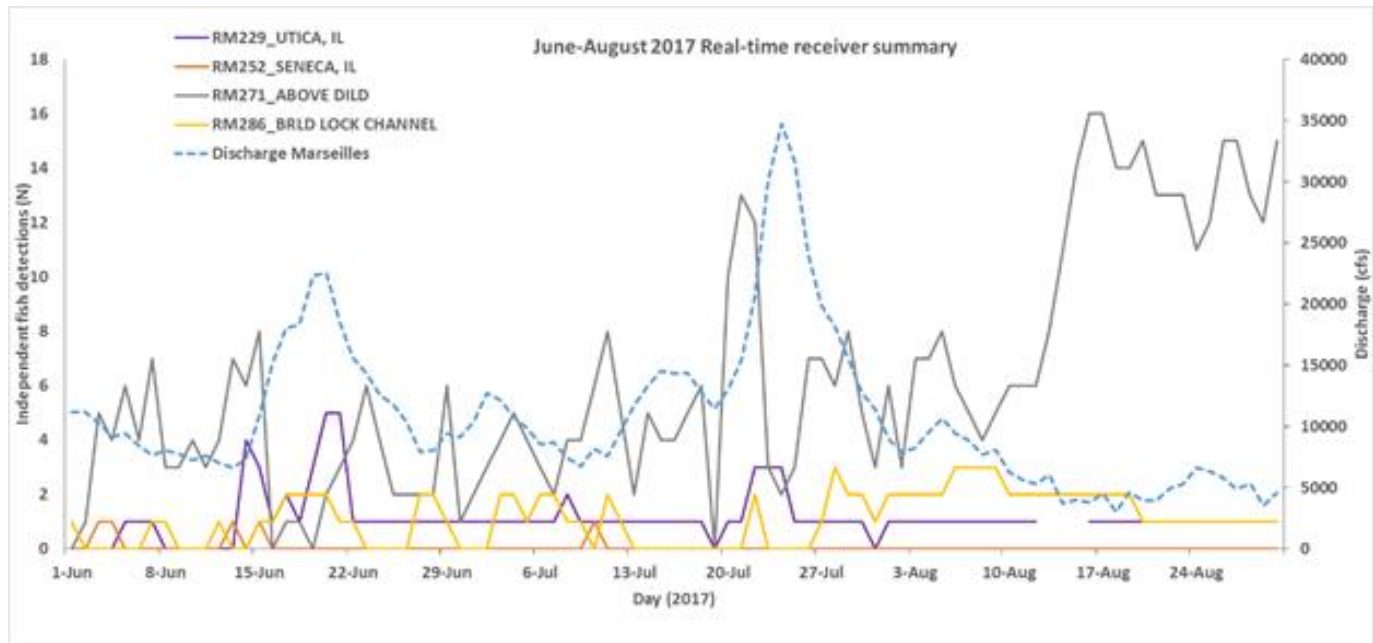
Sampling to monitor for juvenile Asian carp (TL <160mm) was conducted in the CAWS for the Lockport, Brandon

Telemetry Monitoring

USGS Real-time Receiver Report.

Road, Dresden Island reaches during August 2017. Boat electrofishing was used in Brandon Road (8/28/2017 – 8/29/2017) and Lockport 8/30/2017 at 14 locations (3.5 hrs fishing time) and 7 locations (1.75 hours of fishing time) respectively. This effort resulted in 394 fish captured in Brandon Road and 726 in Lockport. No Silver or Bighead Carp were caught in either pool. Boat electrofishing took place in the Dresden Island reach (8/15/2017 and 8/31/2017) at 11 locations (2.75 hrs fishing time) and resulted in 938 total fish captured. Only one Silver Carp was captured during this effort in Dresden Island.

Electrofishing also took place in Marseilles (8/2/2017 – 8/3/2017 and 8/18/2017) and Starved Rock pools (8/1/2017). Boat electrofishing was used for 13 locations (3.25 hrs fishing time) in Marseilles and 5 locations (1.25 hrs fishing time) in Starved Rock. Additionally, an electrified dozer trawl was used in Starved Rock for 3 runs (15 mins fishing time). In total, this effort resulted in 649 fish captured from Marseilles and 212 fish from Starved Rock. Asian carp captures numbered 84 Silver Carp in Marseilles and 47 Silver Carp in Starved Rock. No Bighead Carp were captured. No juvenile Asian carp were captured during sampling.



**Fig 1. Graph showing the individual fish detections on real-time receivers located at IL river miles 229, 252, 271, and 286 for June through August 2017 with the associated average daily discharge for Marseilles IL (USGS site: 05543500).**

During the month of August, twenty-six (26) live fish were detected on two of the four receivers. No live fish were detected at the Utica or Seneca stations. Three grass carp were detected at the receiver in the Dresden Island Lock approach (RM286), and 23 fish were detected at the Minooka receiver (RM271; 17 Bighead carp, one Hybrid, three Silver carp, and two grass carp). No fish were

detected moving among pools (upstream or downstream) during the month of August. More detailed detection data can be found at <https://my-beta.usgs.gov/fishtracks/index> or by contacting Marybeth Brey at USGS UMESC. Contact: Marybeth Brey, [mbrey@usgs.gov](mailto:mbrey@usgs.gov).

### **Habitat usage and movement of juvenile Asian carp (telemetry)**

Telemetry of juvenile Asian carp to study habitat usage continued in the Peoria reach continued through August 2017. A total of 53 juvenile Asian carp have been implanted with transmitters and 26 hydrophones are deployed for monitoring. After the first receiver data download, 51 fish have been detected on stationary hydrophones. Mean movement distance was 3.9 km and mean residence time was 6.8 hours during the first month of monitoring.

### **Larval Fish Monitoring**

INHS conducted ichthyoplankton sampling at 12 main channel and backwater sites located in the Brandon Road, Dresden Island, Marseilles, Starved Rock, Peoria, and LaGrange Pools during the weeks of August 7 and August 21. Four larval fish samples were collected at each site, and zooplankton and water chemistry samples were also collected. Additional samples were collected in Illinois River tributaries to evaluate the potential for Asian carp spawning in these rivers. Processing of samples and identification of larval fish and eggs is ongoing.

Ichthyoplankton sampling will continue on a biweekly basis through October. Results, particularly regarding occurrences of Asian carp eggs or larvae, will be reported once available.

### **Distribution and movement of juvenile Asian carp**

The USFWS - Columbia Fish and Wildlife Conservation Office sampled the Marseilles and Starved Rock pools with the electrified dozer trawl and Dresden Island and Peoria pool with the electrified paupier. No Silver Carp less than 153mm were captured (Table 1).

Table 1. USFWS Columbia effort expended, Gizzard Shad captured and Silver Carp captured by electrified dozer trawl and electrified paupier in August 2017.

Pool	Gear	# of Samples	Time (minutes)	# of Gizzard Shad	# Silver Carp	# of Silver Carp <153mm	SVCP range (mm)
Dresden Island	Electrified Paupier	3	15	11	2	0	794-950
Marseilles	Electrified Dozer Trawl	9	43	875	33	0	518-777
Starved Rock	Electrified Dozer Trawl	3	12	29	13	0	526-748
Peoria Pool	Electrified Paupier	3	13	16	31	0	482-692

### **Gear Evaluation for Removal and Monitoring of Juvenile Asian Carp Species**

Table 1. Silver Carp (SVCP) captured by the USFWS - Columbia Fish and Wildlife Conservation Office in August 2017 during the gear evaluation study using three gears (PA – electrified paupier, DT – electrified dozer trawl, EF – standard electrofishing). Study sites are in the LaGrange (Lily Lake, Matanzas Lake, Bath Chute) and Marseilles (Hansen Material Services East, Hansen Material Services West) pools of the Illinois River, IL. All Silver Carp less than 200 mm were captured in the LaGrange Pool.

Site	Gear	N	Time (min)	SVCP	SVCP/5 min	SVCP < 200mm	SVCP range (mm)
Lily Lake	PA	8	40	159	19.9	16	45-745
	DT	8	40	41	5.1	1	57-662
	EF	8	40	19	2.4	0	384-630
Matanzas Lake	PA	8	40	166	20.8	0	227-746
	DT	8	38.2	100	13.1	0	272-776
	EF	8	40.3	16	2.0	0	281-606
Bath Chute	PA	8	40	444	55.5	1	26-757
	DT	8	39.5	26	3.3	0	477-652
	EF	8	40.3	13	1.6	0	471-628
Hansen Materials East	PA	8	40	63	7.9	0	617-876
	DT	8	40	46	5.8	0	550-814
	EF	7	35.1	1	0.1	0	660-753
Hansen Materials West	PA	8	40.7	119	14.6	0	541-841
	DT	8	39.2	44	5.6	0	527-763
	EF	8	40	11	1.4	0	644-839

**Assessing movement and behavior of Asian carp at a lock and dam to inform control strategies and Assessing populations across ecologically significant ecosystems: quantifying abundance, biomass, and size distributions**

Analyses of late July hydroacoustic surveys from Dresden Is. and Marseilles pools were completed. Observed Asian carp densities combined in Dresden Island Pool decreased slightly from June to July, and was due to a decrease in observed Silver Carp density and a marginal decrease in observed Bighead Carp density (Figure 1). Within Dresden Is. Pool, densities were highest in the Treats Island side-channel and Mobil Bay backwater, although Treats Island was highly variable (Figs 2 and 3). At other locations in Dresden Island Pool, densities were high in the main channel adjacent to the Rock Run Rookery backwater, near the mouth of the Kankakee River, and within the power plant effluents near the Kankakee River and just upstream from Rock Run Rookery (Fig 3). These locations were similar to high-density sites observed in June sampling (Fig 3).

Observed Asian carp densities in late July within the Marseilles Pool were higher in July than June but were comparable to densities observed in March (Fig 1). This was due to an increase in observed Silver Carp density from June levels. Asian carp densities remained similar to the previous survey in the HMS East Pit backwater lake and the main channel but increased at the Sugar Island side-channel and HMS West Pit backwater lake (Fig 2). Within the main channel, locations with high densities were mostly downstream, towards the Marseilles Lock & Dam (Fig 4). Densities in the East Pit were highest in the northeast cove, along the eastern shoreline, and in the north-central bay (Fig 5). Asian carp densities in the West Pit were moderate along most of the shoreline but were elevated in the west end of the lake, and in the northeastern cove (Fig 5).

Sample collection for the project entitled “Assessing Asian carp populations in Pool 19 of the Mississippi River and the Cache River of southern Illinois,” including hydroacoustic surveys and electrofishing/gill netting, is complete.

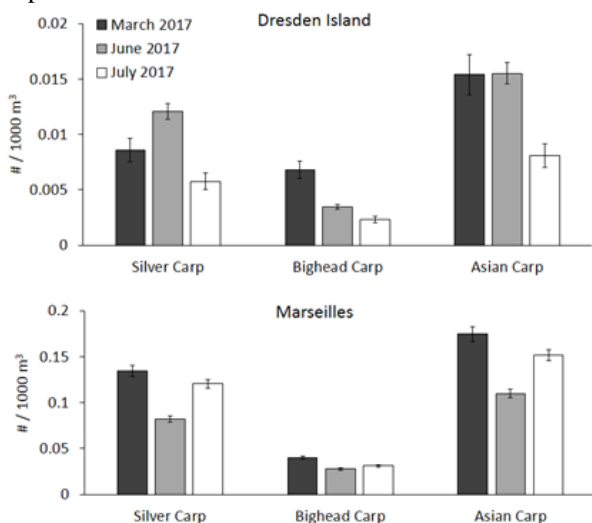


Fig 1. Pool-wide Carp densities combined observed from mobile surveys in the Dresden Island and Marseilles Pools in 2017.

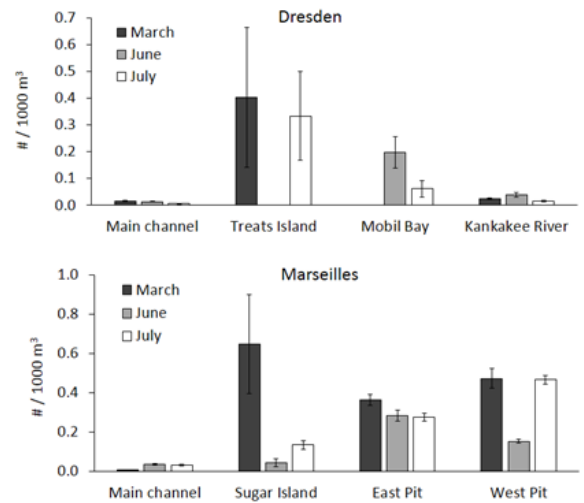
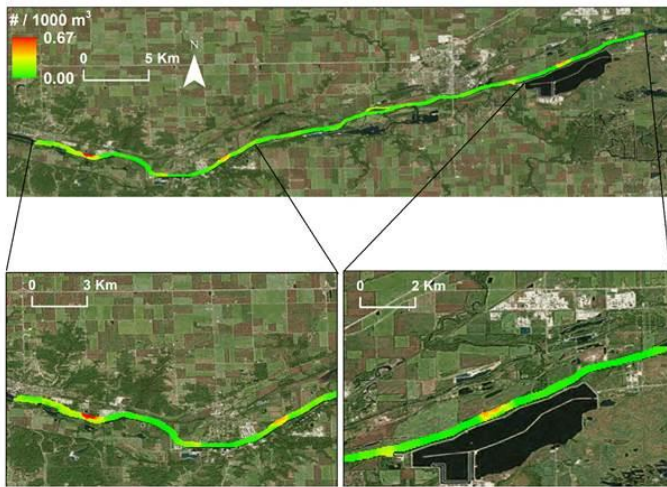


Fig 2. Site-specific Carp densities combined observed from mobile surveys in the Dresden Island and Marseilles pools in 2017.



Fig 3. Mean Asian carp (Silver and Bighead Carp combined) densities in the Dresden Island Pool observed using mobile hydroacoustic sampling in early June and late July, 2017. Note differences in scale between months.



**Fig 4 Asian carp combined densities in the Marseilles Pool main channel observed using mobile sampling in late July, 2017.**



**Fig 5 Asian carp combined densities in the HMS East Pit (top) and West Pit (bottom) backwater lakes in the Marseilles Pool. Densities observed in late July, 2017.**

### **Alternate Pathway Surveillance in Illinois - Law Enforcement**

An investigation into a Missouri company advertising and selling tilapia over the Internet determined the company was illegally shipping live tilapia to various locations throughout the State without the required non-resident aquatic life dealer's license or restricted species transportation permit. A total of 2,650 tilapia were sold and shipped into Illinois via FedEx in 2016 & 2017. Some of the fish were used to stock ponds which increases the risk of the tilapia escaping into open water systems. The company cooperated with the investigation and agreed to comply with all IDNR regulations in the future.

A Mt. Vernon golf course purchased and illegally stocked 1000 tilapia into two golf course ponds. Proper enforcement action was taken against the golf course. The site was inspected by an IDNR Fisheries biologist to determine the best way to prevent escapement.

Invasive Species Unit (ISU) located and inspected an illegal aquaculture facility in Plano that was raising tilapia

without an aquaculture permit. The tilapia were purchased on the Internet and shipped via FedEx. The owner was informed of IDNR permit requirements.

ISU interviewed an individual that purchased 100 live tilapia to raise indoors without the required aquaculture license or letter of authorization to possess a restricted species. The fish were illegally imported into Illinois without a restricted species importation permit. All of the fish died within a week of the delivery and none of them were released into open waters.

ISU interviewed a Bollingbrook resident who purchased tilapia over the Internet and illegally stocked them in an outside garden pond. All of the fish died within two days. The owner was issued written warnings for his actions. The ISU participated in an Aquatic Invasive Species pet take back event at Williams Powers State Park to provide security and respond to any law enforcement issues that came up.

### **Alternate Pathway Surveillance in Illinois – Urban Pond Monitoring**

On September 6<sup>th</sup> Illinois DNR Asian Carp crew conducted a search for Asian Carp including Grass carp in Flatfoot Lake, Cook County. Agencies participating were Cook County Forest Preserve (1 electrofishing boat), IDNR (1 electrofishing boat) and 1 IDNR contracted commercial fisherman. Sampling was safe and successful catching 3 Asian carp (2 Bighead Carp and 1 Grass Carp)

Catch and effort is below:

#### **Effort:**

- 2 Shock Boats – 7 hours total shock time
- Commercial boat – 1,600 yards of gill net

#### **Total Catch:**

- Common Carp – 50
- Grass Carp – 6 (largest weighed 55 pounds)
- Bighead – 2 (weighed 75 & 79 pounds)



IDNR-Fisheries Aquatic Nuisance Species and Aquaculture Program

## DNR begins 47th annual Saginaw Bay fish community survey

This month the Michigan Department of Natural Resources is conducting its 47th annual survey of the Saginaw Bay fish community. The survey, now under way, includes both trawling and gillnetting and will determine the abundance and health of fish populations in the bay.

“The timing of late summer or early fall allows us to assess how much reproduction has taken place for the year, as well as the overall abundance of older age groups,” said Dave Fielder, DNR fisheries research biologist. “The use of the same methods each year allows us to detect population changes in each species.”

This survey annually produces data to gauge the effects of fisheries management actions and invasive species on bay fish populations. While the DNR does other work in

Saginaw Bay – such as walleye tagging projects, creel surveys and habitat work – this fish community study is the department’s primary look at the status of the fish populations.

This year’s study marks the second year of changed harvest regulations, first implemented in October 2015. Those changes increased the daily possession limit of walleye from five to eight fish in the bay and lowered the minimum length limit from 15 inches to 13 inches. It also lowered the daily possession limit of yellow perch from 50 to 25 fish. These changes were intended to make for more complete use of the recovered walleye population and promote yellow perch survival. The results of the survey will help

determine if additional regulation changes are needed.

Long-term surveys such as this one are critical to understanding fish communities and how they are changing. It takes about two to three weeks and two research vessels – the R/V Tanner out of Alpena and the R/V Channel Cat out of Harrison Township – to complete the work.

“It will be a few months before we have the full results of this survey since there is a lot of follow-up lab work to do, such as aging the fish we sampled,” Fielder said. “The data we collect will be analyzed and shared with our fisheries managers and stakeholders prior to the 2018 fishing season so that any needed adjustments to existing regulations can be implemented.” ✧

## Changes coming to Illinois boat registration policies

There are some changes coming to state law in order to speed up the process of getting your watercraft back on the water quicker. The Illinois DNR is working through a ten week backlog of watercraft registrations. That’s one reason state Rep. Tim Butler, R-Springfield, said changes were necessary. His measure, House Bill 434, was signed into law earlier this month and changes the expiration date of the three-year watercraft license from June 30 to September 30 for when a watercraft must be registered. “It makes it easier for the staff at DNR to do their job,” Butler said, “and also doesn’t put as much burden on them in a time of year when everyone is getting up and going into the outdoor season in Illinois.”

Butler also said it was confusing trying to figure out whether a boat should be titled or when the title fee should be paid.

According to the most recent numbers from DNR there were

## Invasive Japanese stiltgrass found near Ann Arbor

The Michigan DNR announced that Japanese stiltgrass (*Microstegium vimineum*), an invasive plant originating in Asia, recently has been positively identified on private property near Ann Arbor in Washtenaw County. This identification, confirmed by the U. of Michigan Herbarium, is the first detection of this species in Michigan. This annual grass is considered highly invasive, taking hold in areas of disturbed soil along banks, roadways and woods. Seeds can be transported by water or on animals, and seeds can remain viable in the soil for three to five years. Because deer don’t feed on Japanese stiltgrass, it often takes over in areas where deer browse on native plants and leave open patches of soil. ✧

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238,232 registered watercraft in Illinois. The measure takes effect June 2018. ✧

## Analysis confirms grass carp eggs in Lake Erie tributary

Scientists say they’ve confirmed the discovery of grass carp eggs in a tributary of Lake Erie.

Grass carp are among four species of Asian carp that pose a threat to the Great Lakes. The most feared are silver and bighead carp, which eat plankton and could destabilize food chains. But grass carp are also a problem because they eat huge amounts of valuable plants.

The Great Lakes Fishery Commission says state, federal and university scientists analyzed eggs collected from the Sandusky River in Ohio earlier this summer, and they’ve concluded they were grass carp eggs.

The Commission says the number of grass carp in the area is “extremely low,” which offers a chance to prevent the invasive fish from gaining a foothold. ✧

## Illinois hooked on muskie

Over the past 31 years, the Illinois muskie fishery has evolved into a great fishery in the Midwest. Since 1993, the IDNR has stocked 4,591,271 muskie into waters deemed likely to be suited for a quality fishery. The main goal of muskie management in Illinois is to establish populations, sustained by supplemental hatchery stockings and creative regulation in an effort to maintain populations, which produce a few large fish for trophy angling.

Muskellunge (muskie), *Esox masquiongy*, are considered a valuable sportfish as they can reach sizes that make them a terrific trophy fish species. Muskie were historically found in the St. Lawrence and Hudson River drainages, the Great Lakes region, the upper Mississippi basin, and the Ohio basin. The popularity of muskie as a trophy fish has increased the desire to introduce them into many lakes and reservoirs beyond their native geographic range. The original native geographic range of muskie in Illinois was confined to Lake Michigan and some lakes in northeastern Illinois. Natural populations were extirpated from Illinois waters many years ago.

In 1975, 700 muskie fingerlings were purchased and stocked into Spring Lake in Tazewell County in an effort to establish muskie brood stock to be used towards the development of a fishery in select Illinois waters. Originally 27 lakes were selected, ranging from 25-24,580, for inclusion in the muskie stocking program. As interest in the program increased, the need arose to expand the muskie fishery further. Completion of the Jake Wolf Memorial Fish Hatchery allowed further introduction of muskie into numerous waters in Illinois and now 66 known lakes—either state owned, public owned, or cooperatively managed privately owned—have been stocked with the much sought after muskie.

Distribution has also expanded into many river drainages in Illinois, mostly as a result of escapement over impoundment spillways. Muskie have

been collected from numerous rivers and their tributaries, most notably including the Fox, Green, Kankakee, Kaskaskia, Rock, Kishwaukee, Pecatonica, Illinois, and Mississippi rivers.

The Division of Fisheries only stocks muskie into waters that are deemed likely to be suited for a quality fishery. Muskie are stocked as fingerlings on an annual, bi-annual, or tri-annual basis depending on assessments of stocking success. Stocking rates for muskie are generally 1-2 fingerling fish per acre and waters are prioritized for stocking based on a number of criteria used to determine waters of greatest value for stocking.

Since 1993 we've stocked a total of 4,591,271 muskie of which 458,500 are ten-inch or greater fingerlings, this appears to correlate closely with the data showing that more and bigger fish are being sampled. Approximately 70 females and 120 males are collected for brood each year on average. About 20 females are actually spawned for eggs each year on average. Over 810,000 eggs are collected each year to produce 15,000 to 20,000 fish at 10 to 11 inches in length for stocking.

The main goal of muskie management in Illinois is to establish populations, sustained by supplemental hatchery stockings and creative regulation in an effort to maintain populations which produce a few large fish for trophy angling. Therefore, management relies almost completely on stocking and regulation to maintain a quality fishery. Trophy fish are usually relatively few in number; therefore a low possession limit and a high minimum length limit are used to regulate angler harvest to allow fish to reach larger sizes. In Illinois we limit harvest of muskie to one fish per day with a minimum state-wide length limit of 36 inches. Many waters implement a site specific 40-inch minimum length limit to harvest which ultimately requires catch and release for most fish caught by anglers. Some of the

best muskie lakes in Illinois impose an even greater minimum length limit of 48 inches in an effort to develop a higher end trophy fishery.

The objectives of management are to develop and maintain fish that average 13 pounds at 36 inches, enhance trophy opportunities to provide fish in the 20 to 40-pound range at the best suited waters, and continue to stock muskie fingerlings at a rate of 1-2 per acre for 4 out of every 6 years at approved waters. One of the biggest tasks for successful muskie management is population monitoring. Population assessments have used a number of methods over the years; currently we use electrofishing, trap netting, and volunteer creel reporting. One of our objectives is to evaluate survey data for all muskie lakes to better refine our knowledge of relative population characteristics (relative numbers, biomass, body condition, etc).

Population data may indicate a greater need for stocking in larger lakes and may also show need for changes to harvest regulations.

In addition to field collection surveys, a volunteer creel survey was developed to gather angling information from anglers fortunate enough to catch a muskie in Illinois waters. The Muskie Creel Project was modeled after the very successful voluntary creel survey which Mike Sule, former District Fisheries Manager, designed and implemented on Pierce and Shabbona Lakes in 1985 and 1986. The Illini Muskie Alliance (IMA) partnered with IDNR on the creel survey and as the project gained traction, the IDNR and IMA implemented the program on a statewide basis in April of 1987. Funds for the project were originally provided by the IMA for the original printing of creel cards used to report muskie catches.

From 1987 to 2016, 11,636 muskies were reported caught from 68 water bodies (average of 404 muskies reported per year). The numbers of muskie increased over the years from 1987 to a peak of 1,181

reports in 2006. Since then, catch reports have diminished with fewer than 200 muskie on average reported annually. The study also shows the largest maximum annual length of muskie increased from 1987 to 2011 before declining slightly as catch reports also declined. The average annual maximum size of reported muskie through 2016 is 49.2 inches. The largest muskie reported caught during this project is a 60-inch fish from Shabbona Lake in 2001.

Overall, April, May, June, September, and October continue to be the most productive months to catch muskie as 70% are caught during these months. This also indicates that anglers are expending more fishing effort during these months. The monthly catch is higher April through June at lakes located in the northern part of the state (Fox Chain O'Lakes, Heidecke Lake, Lake Carlton, and Shabbona Lake); whereas the monthly catch is as high or higher in September and October at lakes located in the southern part of the state (Kinkaid Lake and Lake Shelbyville). This is probably a function of anglers taking advantage of seasonal differences in climate that afford longer fishing opportunities in the fall for the southern lakes. Spring Lake North also appears to provide good late winter and early spring fishing opportunities as 50% of the muskie caught there were taken in January through April.

Over the past 31 years, the Illinois muskie fishery has evolved into a great fishery in the Midwest and this could not have been accomplished without the dedication of IDNR fisheries biologists, hatchery managers and technicians, and without the ongoing support and assistance of the IMA, Illinois Muskies, Inc. Chapters, the Illinois Muskie Tournament Trail, and the muskie anglers who have participated in this project. ✧

## CO2 hazards

*Continued from page 16*

This safety alert is provided for informational purposes only and does not relieve any domestic or international safety, operational, or material requirements. Developed by the Investigations Division of Marine Safety Unit Portland, Coast Guard District 13 Prevention Division and the Office of Investigations and Casualty Analysis. Questions may be sent to [HQS-PF-flidr-CG-INV@uscg.mil](mailto:HQS-PF-flidr-CG-INV@uscg.mil).

**Note:** The Coast Guard has previously released CO2 related safety alerts. Safety Alert 15-14 recommends conducting a comprehensive pre-test meeting and simulated step-by-step "walk-through" between involved parties prior to actual testing of complex or potentially confusing systems. Operational controls for those involved should be implemented to maximize safety and reduce risk. ✧

## Onondaga Lake plan

*Continued from page 17*

resources to the public, such as fishing. The agencies then solicited restoration project ideas from stakeholders to identify the types and scale of restoration needed to compensate for those injuries. The ultimate goal of the process is to replace, restore, rehabilitate, or acquire the equivalent of injured natural resources and resource services lost due to the release of hazardous substances-at no cost to the taxpayer.

Under federal law, federal and state agencies and Native American tribes are authorized to act as trustees on behalf of the public for natural resources they own, manage or control. In this role, trustees assess and recover damages or implement restoration projects to compensate for injuries to natural resources due to hazardous substance releases (e.g. mercury). The natural resource damage assessment regulations encourage the participation of potentially responsible parties (PRPs) in the assessment process, and Honeywell agreed to cooperatively

## Illinois Fall Trout Season Opens Oct 21

### Fall Catch-and-Release Fly Fishing-Only Season opens Oct 7

SPRINGFIELD, IL – The 2017 Illinois Fall Trout Fishing Season will open on Saturday, **Oct. 21** at 54 ponds, lakes, and streams throughout the state.

Two weeks prior to the fall trout opener, the Fall Catch-and-Release Fly Fishing Season will open at nine sites on Saturday, **Oct. 7**. Fly fishing anglers can use fly fishing gear to catch and release trout beginning **October 7** at those nine sites. No trout may be kept during the fly fishing period, but anglers can keep trout after the opening of the regular fall trout season beginning **October 21**.

The Illinois catchable trout program is funded by those who use the program through the sale of Inland Trout Stamps. For the fall season, the IDNR stocks approximately 80,000 rainbow trout into bodies of water where trout fishing is permitted.

No trout may be taken from any of the stocked sites from **October 1** until the fall trout season opens at 5:00 a.m. on **October 21** (not all sites are open at 5:00 a.m. on opening day). Anyone attempting to take (harvest) trout before the legal harvest season opening will be issued citations.

All anglers – including those using fly fishing gear who intend to release fish caught before **October 21** – must have a valid fishing license and an Inland Trout Stamp, unless they are under the age of 16, blind or disabled, or are an Illinois resident on leave from active duty in the Armed Forces. The daily catch limit for each angler is five trout. For the 54 locations: [Illinois Fall Trout Season](#) ✧

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assess natural resource damages and identify restoration projects at Onondaga Lake with the trustees. [Read more information on this process](#) at the U.S. Fish and Wildlife Service website. ✧

# CO2 hazards are nothing new

## *But we'd like to remind you of what not to do!*

During two recent vessel inspections Coast Guard Marine Inspectors participated in and witnessed occasions where the testing and maintenance of a CO2 system resulted in serious safety threats that could have easily led to loss of lives. The incidents included an accidental release in the space where a sensor was being tested that nearly resulted in a fatality and another situation where CO2 came close to being released without warning into an occupied engine room space after errors were made during routine system maintenance. CO2 fire extinguishing systems present an inherent risk to the personnel involved with their inspection, testing, and maintenance. Over the years the Coast Guard has become aware of multiple events where these systems have inadvertently released or leaked and caused the deaths of shipboard personnel, technicians and inspection personnel. CO2 system inspection, testing, and maintenance require thoughtful planning and risk mitigation efforts to prevent such events from happening.

### **Incident #1**

In the first instance, the vessel's Chief Mate and a Coast Guard Inspector were testing the fire detection system. The Mate and Inspector went to the vessel's hydraulic equipment room and the Mate stood on a spare parts box in order to apply a heat gun to the heat actuator. The CO2 subsequently discharged directly above their heads and filled the room. The mate was overcome by the CO2 release and had to be revived by CPR after being pulled out of the space unconscious.

The problem was that the Mate directed the heat to a "heat actuator" and not a "heat temperature transmitter." The difference between these components is substantial. The detector is connected by wires to the monitoring system on the bridge while the release actuator directly connects to its local CO2 system

through tubing. The heat actuator when heated creates a slight pressure in the tubing immediately activating the pneumatic control head of the CO2 bottle, releasing CO2 into the space without delay or warning.

Crewmembers were unfamiliar with the vessel's system and had not referred to the associated manuals. Thus, their testing of the system was conducted without an understanding of the impacts of their actions, placing them and the Coast Guard inspectors at risk.

### **Incident #2**

In a second unrelated event, an inspection for certification involving four Inspectors was taking place while technicians were working on the CO2 system. A Coast Guard Inspector in the machinery space was told that CO2 technicians were going to release the CO2 which was not part of the planned inspection. He was informed that the system became accidentally primed for release when the pilot system was activated by a technician in training. As the technician was reconnecting the cable actuated release levers attached to the tops of the bottles, the activation cables remained connected to the levers. When the bottles were moved later in the servicing process, the cable tension increased to the point where the levers were lifted resulting in the release of charged bottles against a closed valve which prevented immediate release into the space.

The technicians ultimately decided they needed to release the entire engine room CO2 system to remedy the situation. They communicated their intentions to the vessel's engineers, who performed an accountability of all personnel in the space. However, their count was incorrect as they missed a Coast Guard Inspector who was still in the engine room. Only after the Inspector's partner realized his associate was missing was another more thorough sweep of the engine

room made and the missing inspector found. Even after clearing the engine room the situation remained hazardous as various personnel stood by in the engine control room while the gas was released. After realizing the magnitude of the CO2 being released, the personnel in the control room evacuated to the vessel's main deck and no further entry was made into the engine room until the fire department ruled it safe for human occupancy.

As a result of inadequate accountability measures and hazard communications, the safety of crew members and a Coast Guard inspector was placed at risk.

The Coast Guard notes that both of these instances reflect a lack of knowledge and risk awareness by the persons involved. The Coast Guard strongly recommends that:

- Only persons adequately trained and properly evaluated be permitted to participate in CO2 testing and maintenance procedures onboard vessels;
- Every person involved must know and consider the resulting outcomes for each step of the testing procedure prior to it taking place; and
- Risks associated with CO2 and other systems should never be underestimated. Risk prevention activities should always lean towards providing the greatest safety margins for those involved including 100% accountability of all personnel aboard the vessel prior to conducting an operational test of a system.

Coast Guard Navigation and Vessel Inspection Circular (NVIC) 09-00, Change 1, "CARBON DIOXIDE FIRE EXTINGUISHING SYSTEM SAFETY," contains additional CO2 safety and inspection information.

<https://www.uscg.mil/hq/cg5/nvic/pdf/2000/NVIC%2009-00.Change%201.pdf>

### **CO2 hazards**

*Continued on page 15*



## New York and Feds release plan to restore wildlife habitat and recreation on Onondaga Lake

New York and USFWS released the final plan outlining projects to restore wildlife habitat and recreation on Onondaga Lake. The Onondaga Lake Natural Resource Damage Assessment Restoration Plan and Environmental Assessment Final Report is a significant milestone in the revitalization of Onondaga Lake.

"Onondaga Lake continues on the road to recovery, and the habitat conservation and recreation projects outlined in the final plan will ensure the important progress to revitalize the Lake advances quickly," said Kenneth Lynch, Executive Deputy Commissioner for the New York State Department of Environmental Conservation. "The public comments we received were essential in identifying a comprehensive suite of projects that will continue to improve the ecology of the lake's environment and connect more people to the incredible opportunities to enjoy the Lake."

The final plan increases habitat quality and quantity, promotes habitat connectivity, creates new and improves existing public use opportunities, and benefits natural resources within the ecosystem. The [final plan and additional information](#) on the Natural Resource Damage Assessment and Restoration process can be found online at the U.S. Fish and Wildlife Service website.

The agencies selected 20 restoration projects in the final restoration plan. These projects, in total, will:

- Extend the Erie Canalway Trail from Camillus to the Loop the Lake Trail (3.2 miles) and from the Honeywell Visitor Center to Harbor Brook (1.2 miles);
- Improve preservation efforts, bolster habitat restoration, and increase public access to more than 1,400 acres along Ninemile and Onondaga creeks in the Onondaga Lake watershed, including public fishing rights and parking areas;
- Install structures within over 275 acres of Onondaga Lake to provide

habitat for fish, amphibians, and invertebrates;

- Provide 15 years of funding to identify and remove invasive species within approximately 1,700 acres of wetlands, lake/river littoral zone, and riparian habitat;
- Restore wetland and fish habitat within and adjacent to Onondaga County parklands;
- Restore 100 acres of warm season grassland;
- Construct a new deepwater fishing pier on Onondaga Lake;
- Enhance jetties at the Onondaga Lake outlet to improve access;
- Construct a new boat launch along the Seneca River;
- Transfer the Honeywell Visitor Center to a public agency; and
- Include a new Future Projects Fund.

The selected restoration alternative is the result of significant public contribution including several years of input from partner organizations, community representatives, and existing documents and plans, culminating in four public information sessions, one public hearing, and more than 230 public comments on the draft plan submitted during the extended comment period. A Responsiveness Summary is included with the final plan, which summarizes public comments on the Restoration Plan, grouped by categories, and provides the Trustees' responses to those comments.

Specifically, the Trustees changed the Restoration Plan in response to public comments to include information on the proposed projects, as well as those projects that were not proposed for implementation. All project suggestions submitted in response to the Trustees' request for project suggestions are included, and additional text was added to clarify assessment methodologies, explain the public participation process, and discuss the role of the Onondaga

Nation. Alternative B was clarified as the preferred alternative of a suite of projects that best meet the regulatory criteria.

The Plan acknowledges that certain geographic areas (e.g. Onondaga Creek) are not represented in Alternative B, but the Trustees will consider projects in those areas, as appropriate, as planning for additional projects under the Future Projects Fund proceeds. The Trustees will continue stakeholder outreach and public participation to solicit additional restoration projects and develop proposed projects that satisfy all relevant criteria.

David Stilwell, the USF&WS Field Supervisor at the New York Field Office, commented "The U.S. Fish and Wildlife Service looks forward to restoring and conserving the natural resources of Onondaga Lake and its watershed, in partnership with the local community."

### Next Steps

Implementation of projects in the Restoration Plan is contingent upon settlement of the Trustees' Natural Resource Damages claims. This settlement will involve the preparation of a Consent Decree subject to additional public comment. The settlement will be combined with the \$2.3 million in proceeds from a settlement reached as part of the General Motors bankruptcy in 2012, so that numerous additional restoration projects can be implemented using the Future Projects Fund.

### About NRDAR

As part of the Onondaga Lake Natural Resource Damage Assessment and Restoration (NRDAR) process, DEC and USF&WS assessed contaminant-related injuries to natural resources such as waterfowl and turtles, and quantified the lost use of natural

### Onondaga Lake plan

*Continued on page 15*

**Other Breaking News Items:**

(Click on title or URL to read full article)

**[DNR releases stocking numbers](#)**

The Michigan Department of Natural Resources stocked a total of 25,470,199 fish—more than 320 tons, 11 different species, and one hybrid—in the spring and summer of 2017

**[Lake Erie fish count hits highest level in four years](#)**

Despite the looming algae bloom that has covered the surface of much of Lake Erie near Monroe County, Michigan, the fish population appears to be healthy, perhaps even thriving and growing

**[Zebra mussels confirmed in Nipigon Bay](#)**

Zebra mussels have been confirmed in Lake Superior's Nipigon Bay, near Thunder Bay, Ontario. A biologist with the Ministry of Natural Resources and Forestry says the confirmation is not "a huge surprise."

**[Illinois stocking 80,000 trout for fall fishing season](#)**

If you don't fish, you're not on the hook to pay for Illinois to add 80,000 trout to the state's lakes and ponds this fall.

**[DEC holds salmon, trout stocking steady in attempt to preserve alewife populations](#)**

Canadian and American officials said a desire to protect limited alewife populations led to their decision to maintain current levels of salmon and trout stocking in Lake Ontario

**[Underwater sanctuary plan aims to preserve Lake Michigan shipwrecks off Wisconsin](#)**

Under a new push by the National Oceanic and Atmospheric Administration, a ghostly collection of sunken vessels could become the first national marine sanctuary in Lake Michigan and the second in the Great Lakes. NOAA is expected to make a final decision by next year.

**[Lake Ontario salmon, trout stocking to remain lower in 2018](#)**

Reviving alewife numbers in Lake Ontario was the aim of a 20 percent reduction in Chinook salmon and lake trout stocking by the U.S. and Canada this year. A recent survey revealed populations showed "a strong first step toward recovery

**[Analysis confirms grass carp eggs in Lake Erie tributary](#)**

The Great Lakes Fishery Commission says state, federal and university scientists analyzed eggs collected from the Sandusky River in Ohio earlier this summer and identified them as grass carp eggs.

**[Culling millions of pounds of Asian carp helps keep Lake Michigan clean](#)**

By the time Illinois rivers freeze this year, contracted fishermen will have removed approximately 6 million pounds of Asian carp since culling efforts began six years ago

End