

Monitoring and Response Workgroup (MRWG) Monthly Activities 2020 June Summary

Bottom Line: The international COVID-19 pandemic created a unique set of challenges for members of the Monitoring and Response Workgroup during the start of the 2020 field season. Guidance from the Centers for Disease Control and public health authorities resulted in much of the planned effort in March and April to be cancelled. Some sampling was able to occur prior to the stay at home order issued in March by the governor of Illinois. Additionally, the United States Army Corporation of Engineers (USACE) continued to operate the electric dispersal barrier in Romeoville, Illinois throughout that time. **NO LIVE BIGHEAD CARP, BLACK CARP, GRASS CARP, or SILVER CARP were found or observed in any new locations immediately downstream or upstream of the Electric Dispersal Barrier.**

Overall Effort Summary

Pool specific results through June 2020 from all effort within the Upper Illinois Waterway. The same time period in 2018 and 2019 for comparison. Additional effort may not be reported due to data processing and actual effort and catch could be higher. Check 2020 interim summary report, published at the end of the year, for complete results.

Lockport Pool

	2018	2019	2020
Yards of Net Fished	42,700	16,400	14,000
Miles of Net Fished	24.3	9.3	8.0
Hoop Net Nights	16.8	26.7	0.0
Mini Fyke Net Nights	9.0	7.0	0.0
Electrofishing Runs	91	2	7
Electrofishing Time (hrs)	22.8	0.5	1.8
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Road Pool

	2018	2019	2020
Yards of Net Fished	43,000	4,200	14,600
Miles of Net Fished	24.4	2.4	8.3
Hoop Net Nights	15.6	27.1	0.0
Mini Fyke Net Nights	6.8	13.0	0.0
Electrofishing Runs	72	2	4
Electrofishing Time (hrs)	18.0	0.5	0.0
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Dresden Island Pool (Including Rock Run Rookery)

	2018	2019	2020
Yards of Net Fished	105,200	50,000	32,800
Miles of Net Fished	59.8	28.4	18.6
Hoop Net Nights	15.3	15.3	0.0
Mini Fyke Net Nights	7.9	0.0	0.0
Pound net night	4	0	0
Electrofishing Runs	91	3	0
Electrofishing Time (hrs)	22.8	0.8	0.0
Bighead Carp	283	19	5
Grass Carp	37	2	1
Silver Carp	649	106	87
Total AC	969	127	93
Asian Carp (AC) from Rock Run Rookery Lake (RR)	107	17	2
AC upstream I-55 (not in RR)	5	3	1
AC downstream I-55	857	107	90
Tons of AC Harvested	7.9	6.0	0.7
AC/1000 yds of gill net	9.2	2.5	2.8

Marseilles Pool

	2018	2019	2020
Yards of Net Fished	91,000	118,900	78,950
Miles of Nets Fished	51.7	67.6	44.9
Pound Net nights	22	26	0
Hoop Net nights	239.9	39.1	0.0
Mini Fyke Net Nights	7.9	19.8	0.0
Electrofishing Runs	72	17	0
Electrofishing Time (hrs)	18.0	4.3	0.0
Bighead Carp	917	387	746
Grass Carp	32	39	7
Silver Carp	24,001	27,742	22,036
Total Asian Carp	24,950	28,168	22,789
Tons of AC Harvested	120.0	155.8	123.6
AC/1000 yds of gill net	259.1	233.4	288.7

Starved Rock Pool

	2018	2019	2020
Yards of Net Fished	64,600	159,865	54,980
Miles of Nets Fished	155600.0	90.8	31.2
Pound Net nights	0	0	0
Hoop Net nights	994.5	27.9	0.0
Mini Fyke Net Nights	0.0	18.9	0.0
Electrofishing Runs	0	33	0
Electrofishing Time (hrs)	0.0	8.3	0.0
Bighead Carp	694	597	1,190
Grass Carp	538	2210	199
Silver Carp	33,806	90,110	37,916
Total Asian Carp	35,038	92,917	39,305
Tons of AC Harvested	107.7	340.8	117.1
AC/1000 yds of gill net	483.9	580.5	714.9

Contracted Fishing Below the Electric Dispersal Barrier

- Contract fishing took place in Lockport, Brandon Road, Dresden Island Pool, Marseilles Pool and Starved Rock Pool of the Illinois River Waterway.
- Contracted fishers set and pulled 59,600 yards of gill/trammel net in June
- 1,535 Bighead Carp, 89 Grass Carp and 22,654 Silver Carp were removed in June
- 166,678 pounds of Asian Carp was removed in June
- 25,748 fish representing 17 species and 1 hybrid group were captured during contracted commercial netting effort in June.

Below is a summary of all Illinois Department of Natural Resources (IDNR) contracted fishing activities through June 2020. For comparison purposes, data from the same time period in 2018 and 2019 are included.

	2018	2019	2020
Number of Days Fished	43	54	25
Number of Net Crew Days	202	322	172
Yards of Net Fished	155,600	278,765	195,330
Miles of Nets Fished	88.4	158.4	111.1
Number of Pound Net Nights	22	26	0
Number of Hoop Net Nights	1218.9	0	0.0
Number of Bighead Carp	1,894	987	1,941
Number of Silver Carp	58,456	117,857	60,039
Number of Grass Carp	694	2,240	207
Number of Asian Carp (AC)	61,044	121,084	62,187
Tons of AC Harvested	235.7	502.6	214.3
AC/1000 yds of gill net	358.6	432.9	318.4

Seasonal Intensive Monitoring

The COVID pandemic and political climate of the area resulted in changes from the sampling design in the 2020 Monitoring Response Plan. Seasonal Intensive Monitoring (SIM) took place during the weeks of June 8th and June 15th. Commercial netting and electrofishing occurred in the North Shore Channel, North and South Branches of the Chicago River, Chicago River, Chicago Sanitary and Ship Canal, Cal-Sag Channel, Little Calumet River, Calumet River, and Lake Calumet (Figure 1). Commercial seining occurred exclusively in Lake Calumet (Figure 1).

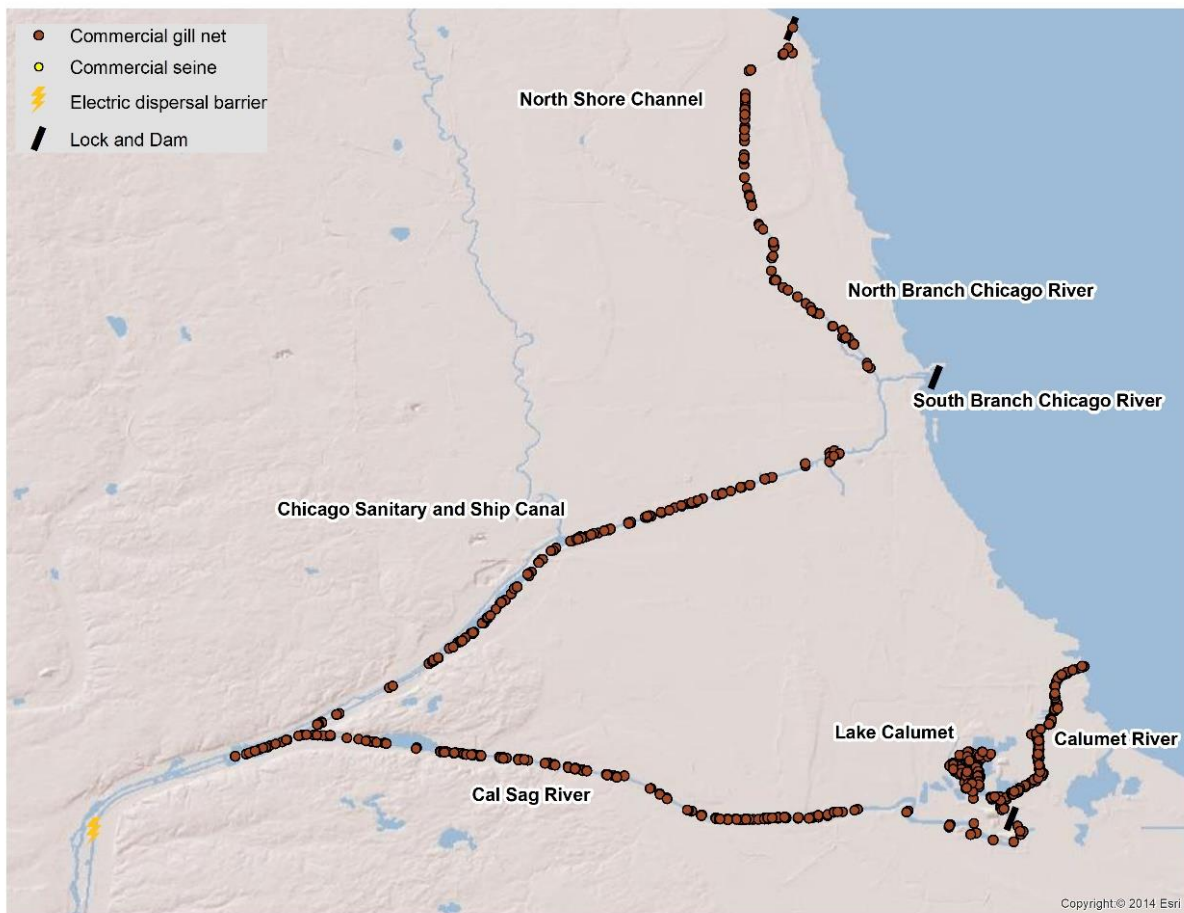


Figure 1. Sample locations throughout the Chicago Area Waterway during the fall 2020 Seasonal Intensive Monitoring.

Overall:

- A total of 4,325 fish representing 18 species and 1 hybrid group were collected cumulatively with all gear types during the two-week SIM event.
- **No Bighead Carp or Silver Carp were observed or collected during the June SIM event.**

Commercial Seine:

- Contracted commercial fishers along with assisting IDNR biologists completed four 800-yard commercial seine hauls (3,200 yards) in Lake Calumet.
- Crews collected 2,879 fish representing 11 species.

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 40.9 miles of gill net (360 sets) at fixed and random sites.
- Crews collected 1,446 fish representing 15 species and 1 hybrid group.
- Two Grass Carp were captured in Lake Calumet (41.678087 -87.598227 and 41.680045 87.6001) and 1 Grass Carp was captured in the Cal-Sag (41.67957 -87.80509) during commercial netting.



Figure 2. Contracted fisher monitoring a seine (A) and gill net (B) while obliging to social distancing protocols.

Electrofishing - USACE

During the month of June, the USACE completed 17 fifteen-minute electrofishing runs in the Lockport and Brandon Road pools. In the Lockport Pool 194 fish were captured across 8 runs and the top five fish species encountered were Common Carp (26%), Bluntnose Minnow (16%), Green Sunfish (12%), Gizzard Shad over 6 inches (9%), and Emerald Shiner (8%). In the Brandon Road Pool 291 fish were captured across 9 runs and the top five fish encountered were Smallmouth Bass (23%), Bluegill (16%), Gizzard Shad over 6 inches (11%), Common Carp (10%), and Bluntnose Minnow (BNMW) (5%). Additionally, USACE participated in the June Seasonal Intensive Monitoring Event (SIM) and conducted 40 fifteen-minute electrofishing runs in the Calumet River (16), Lake Calumet (16), and the Little Calumet River (8). In the Calumet River 118 fish were collected across 8 runs and the top five fish encountered were Small Mouth Bass (21%), Rock Bass (15%), Bluegill (14%), Largemouth Bass (8%), and Common Carp (8%) In Lake Calumet 750 fish were captured across 16 runs and the top five fish encountered were Yellow Perch (21%), Large Mouth Bass (18%), Bluegill (18%), Pumpkinseed (16%), and Rock Bass (8%). In the Little Calumet River 1922 fish were collected across 16 runs and the top five fish encountered were Gizzard Shad over 6 inches (70%), Emerald Shiner (8%), Common Carp (6%), Banded Killifish (4%), and Freshwater Drum (2%). **No Asian carp were observed or captured in the Lockport or Brandon Road pools or during the SIM event.**

Enhanced Contract Fishing

In September 2019, the Enhanced Contract Fishing Program was initiated in the Peoria Pool. The program offers Illinois-licensed commercial fishermen \$.10 per pound for Asian carp caught in the Peoria Pool and sold to fish processors or other buyers for at least \$.07 per pound. To date, 26 fishermen have entered into contracts to catch Asian carp from this pool. From inception through the remainder of calendar year 2019, 518,132 pounds of Asian carp were caught in the Peoria Pool, and to date in 2020 an additional 1,375,241 pounds have been caught for a total of 1,893,737 pounds. Of these total catches, 4.98% are Bighead, 60.72% are Silver and 34.31% are Grass carp. No Black carp have been reported.

YEAR	Total Lbs.	Asian Carp Type **		
		Bighead	Silver	Grass
2019 *	518,132	24,813	310,297	183,022
2020 (Jan thru July)	1,375,241	69,435	839,305	466,501
GRAND TOTALS	1,893,373	94,248	1,149,602	649,523
	Percentages	4.98%	60.72%	34.31%

* September 2019 program inception.

** No Black carp reported.

Telemetry

United States Geological Services (USGS)

June

There were 13 bigheaded carp (seven Bighead Carp and six Silver Carp) detected at Illinois River above Dresden Island Dam near Minooka, IL during the month of June 2020 (Figure 3). The maximum number of bigheaded fish detected on one day was five and the minimum was two.

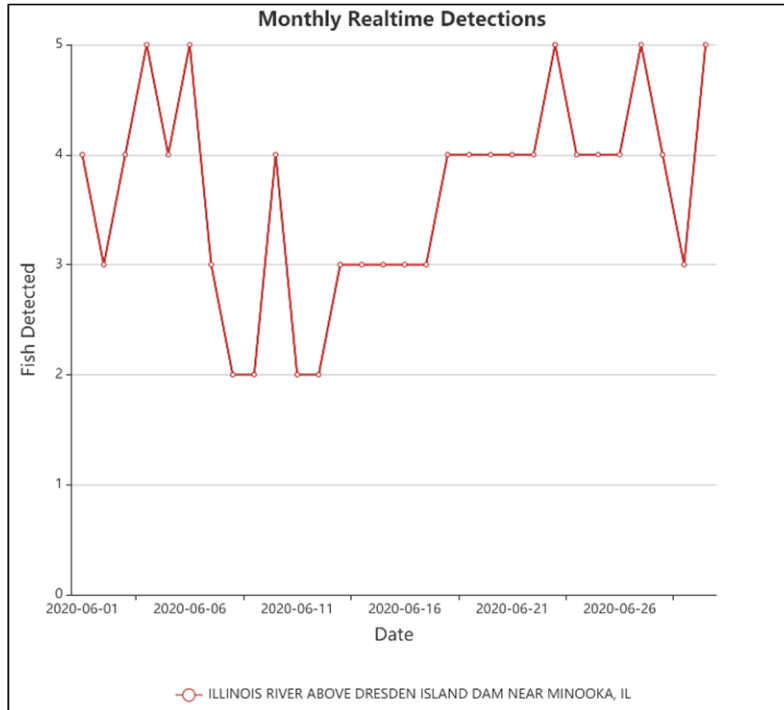


Figure 3. Fish detections for 1 June – 30 June 2020 from telemetry receiver in the Illinois River above Dresden Island dam near Minooka, IL.

Telemetry - USACE

Due to the ongoing Corona Virus outbreak, USACE biologists were unable to deploy the full VR2W array until May 29, 2020. On May 29th USACE deployed 17 receivers between the confluence of the Cal-Sag Channel and the CSSC in the Lockport Pool and the Dresden Island Lock and Dam within the Dresden Island Pool. USACE also downloaded nine receivers that we left to overwinter within the system from November 2019 to May 2020. A preliminary review of the data from that time period indicated that no tagged fish had crossed the EDBS upstream or downstream and no tagged Asian carp detected upstream of the Brandon Road Lock and Dam. There were a total of 27 tagged fish detected in the Lower Lockport Pool, 10 tagged fish in the Brandon Road Pool, and 6 tagged fish in the Dresden Island Pool. One Common Carp were detected moving downstream through the Lockport Lock within the period of analysis. There were four Asian carp and one Common Carp tagged by USACE detected within the Dresden Island Pool with the last tagged fish belonging to another agency. These six fish were detected on the receiver stationed at the Dresden Island Lock and Dam. The receiver located at the Brandon Road Lock and Dam was lost sometime between the November download and the May deployment. A new receiver was placed slightly further downstream from the lock during the May 29 deployment event. An analysis of the USGS real time receiver in that same location is pending and detection data from that receiver will be used in the more detailed analysis of habitat use and movement will be provided in the annual interim summary report.

Monitoring Bigheaded Carp Movement and Density in the Illinois River

Stationary acoustic telemetry receivers from Dresden Island to Alton pools were retrieved and downloaded in early June. Hydroacoustic sampling was also conducted in Dresden Island and Marseilles pools the week of June-22. Heatmaps displaying bigheaded carp spatial distributions were created and shared with IDNR the week after data were collected in order to inform removal crews. Ongoing analyses of telemetry data were conducted to compare the movements and habitat use of Common Carp to that of Silver Carp in Starved Rock Pool and upper Peoria Pool. This project is a collaboration between Southern Illinois University (SIU) and USACE to evaluate the use of Common Carp as a surrogate species for Silver Carp in the CAWS. Ongoing analyses specifically examined the habitat conditions associated with habitat use of Common Carp and Silver Carp and whether habitat use was associated with similar conditions for both species. Active tracking of acoustically tagged Silver Carp and Common Carp also occurred in late June.

Monitoring of Asian Carp Reproductive Productivity

INHS collected ichthyoplankton samples at 7 main channel sites located in the Brandon Road, Dresden Island, Marseilles, Starved Rock, Peoria, and LaGrange Pools during every week of June. Four larval fish samples were collected at each site. Additional samples were collected in Illinois River tributaries (Kankakee, Fox, Mackinaw, Spoon, and Sangamon River) to evaluate the potential for Asian carp spawning in these rivers. The Illinois River was consistently above the 18° C threshold thought to be suitable for Asian carp reproduction during the entire month of June. Water levels, however, were either stable or declining throughout the month, which is generally not considered conducive for Asian carp spawning. Asian carp eggs or larvae were not observed in any June samples upon initial inspection. However, assessing the actual presence or absence of Asian carp eggs or larvae in any sample has to await full sample processing and specimen identifications. Ethanol aliquots were drawn from main channel samples throughout June, and will be subjected to quantitative PCR (qPCR) screening for DNA from each species of Asian carp in order to further refine methods to rapidly identify samples that are most likely to contain Asian carp eggs or larvae. Ichthyoplankton sample processing and identification of larval fish and eggs is ongoing. Occurrence of any Asian carp eggs or larvae, particularly in upstream navigation pools, will be reported as soon as this information is available. Ichthyoplankton data is being analyzed to evaluate changes in the reproductive front of Asian carp populations in the Illinois Waterway, identify reproductive hotspots, and quantify the relationship between Asian carp stock abundance and reproductive output.

Zooplankton as Dynamic Assessment Targets for Asian Carp Removal

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Barrier Operational and Maintenance Status

Status as of June 30, 2020

- Demo – Full water (5 Hz, 4 ms, 400 V = 1.0 V/in) & benthic (5 Hz, 4 ms, 100V) operational
- IIA – Online; Narrow (34 Hz, 2.3 ms, 2000 V = 2.3 V/in) & wide (34 Hz, 2.3 ms, 800 V= ~1.0 V/in) arrays operational
- IIB –Online; Narrow (34 Hz, 2.3 ms, 2000 V = 2.3 V/in) & wide (34 Hz, 2.3 ms, 800 V= ~1.0 V/in) arrays operational
- Des Plaines By-Pass Fence - Fully Operational; Turtle Gates were Open throughout the month

All barriers were fully functional at the above settings for the month of June 2020.

Alternate Pathway Surveillance in Illinois - Law Enforcement

- Invasive Species Unit (ISU) assisted the Wisconsin DNR with an investigation of an Illinois Pet supply company illegally importing prohibited aquatic species into their state.
- Assisted a District 4 Conservation Police Officer with an investigation of the illegal importation of live rusty crayfish into Illinois.
- Currently investigating out-of-state company illegally selling and shipping live fish throughout the United States without a license or any permits. Rainbow trout, tilapia, and channel catfish were sold to Illinois customers, and some of those fish were used to stock open waters throughout the State. ISU interviewed all of those who purchased fish from the company.
- Participated in a multi-agency initiative to prevent the illegal trade of Marbled and Yabby crayfish.