



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

Bottom Line: The international COVID-19 pandemic created a unique set of challenges for members of the Monitoring and Response Workgroup during 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 Summary

Pool specific results through September 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, published at the end of the year, for complete results

Lockport Pool

Effort	2018	2019	2020
Yards of Net Fished	62,500	45,000	42,800
Miles of Net Fished	35.5	25.6	24.3
Hoop Net Nights	16.8	139.7	105.1
Mini Fyke Net Nights	20.9	22.2	12.9
Electrofishing Runs	151	33	34
Electrofishing Time (hrs)	37.8	8.3	8.5
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Road Pool

Effort	2018	2019	2020
Yards of Net Fished	62,800	34,800	47,400
Miles of Net Fished	35.7	19.8	26.9
Hoop Net Nights	15.6	105.0	106.3
Mini Fyke Net Nights	18.8	26.0	12.9
Electrofishing Runs	132	30	28
Electrofishing Time (hrs)	33.0	7.5	7
Total Asian Carp (AC)	1*	0	0
Tons of AC Harvested	0	0	0

*indicates grass carp

Dresden Island Pool (Including Rock Run Rookery)

Effort	2018	2019	2020
Yards of Net Fished	162,700	103,000	71,100
Miles of Net Fished	92.4	58.5	40.4
Hoop Net Nights	15.3	76.3	106.8
Mini Fyke Net Nights	19.7	42.2	36.8
Pound net night	4	0	0
Electrofishing Runs	179	44	48
Electrofishing Time (hrs)	44.8	11.0	12
Bighead Carp	296	30	7
Grass Carp	42	3	1
Silver Carp	737	146	114
Total AC	1075	179	122
Asian Carp (AC) from Rock Run Rookery Lake (RR)	110	39	11
AC upstream I-55 (not in RR)	6	4*	2*
AC downstream I-55	959	136	109
Tons of AC Harvested	9.6	1.4	0.8
AC/1000 yds of gill net	6.5	1.7	1.7

*indicates grass carp are included

Marseilles Pool

Effort	2018	2019	2020
Yards of Net Fished	124,800	160,300	161,570
Miles of Nets Fished	70.9	91.1	91.8
Pound Net nights	22	26	0
Hoop Net nights	239.9	80.6	52.6
Mini Fyke Net Nights	19.8	45.3	33.5
Electrofishing Runs	130	68	62
Electrofishing Time (hrs)	32.5	17.0	15.5
Bighead Carp	1,325	911	1,375
Grass Carp	42	41	26
Silver Carp	28,985	31,120	29,871
Total Asian Carp	30,352	32,072	31,267
Tons of AC Harvested	146.1	178.6	168.7
AC/1000 yds of gill net	231.2	197.2	0.0

Starved Rock Pool

Effort	2018	2019	2020
Yards of Net Fished	180,000	288,265	164,780
Miles of Nets Fished	102.3	163.8	93.6
Pound Net nights	0	0	0
Hoop Net nights	994.5	108.2	0.0
Mini Fyke Net Nights	0.0	67.9	0.0
Electrofishing Runs	0	100	70
Electrofishing Time (hrs)	0.0	25.0	17.5
Bighead Carp	1,591	2,049	2,085
Grass Carp	870	2538	453
Silver Carp	69,339	127,450	65,395
Total Asian Carp	71,800	132,037	68,037
Tons of AC Harvested	233.9	458.2	194.6
AC/1000 yds of gill net	377.9	455.1	411.0

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 during September
- Contracted fisher set and pulled 72,400 yards of gill/trammel net in September
- 43 Bighead Carp, 143 Grass Carp, and 8,652 Silver Carp were removed in September
- 60,960 pounds of Asian Carp was removed in September (Figure 1)
- 9,563 fish representing 17 species and 1 hybrid group were captured during contracted commercial netting effort in September

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

Effort	2018	2019	2020
Number of Days Fished	114	114	80
Number of Net Crew Days	479	511	419
Yards of Net Fished	592,800	631,365	487,650
Miles of Nets Fished	336.8	358.7	277.1
Number of Pound Net Nights	22	26	0
Number of Hoop Net Nights	1218.9	0	0.0
Number of Bighead Carp	3,212	2,985	3,467
Number of Silver Carp	99,061	157,842	95,150
Number of Grass Carp	955	2,558	470
Number of Asian Carp (AC)	103,228	163,385	99,087
Tons of AC Harvested	389.7	638.3	364.2
AC/1000 yds of gill net	160.1	253.5	196.1



Figure 1. Agency biologist weighing a tote of Bighead Carp removed from Starved Rock pool of the Illinois River by contracted fishers.

Seasonal Intensive Monitoring

The COVID 19 pandemic resulted in changes of the Seasonal Intensive Monitoring (SIM) from the sampling design outlined in the 2020 Monitoring Response Plan. The SIM event took place during weeks of September 14th and September 21st. Contracted fisher, IDNR, Illinois Natural History Survey (INHS), and USACE collaboratively sampled the North Shore Channel, North and South Branches of the Chicago River, Chicago Sanitary and Ship Canal, Cal-Sag Channel, Little Calumet River, Calumet River, and Lake Calumet within the Chicago Area Waterway (Figure 2). Effort utilized gill nets and electrofishing (Figure 3).

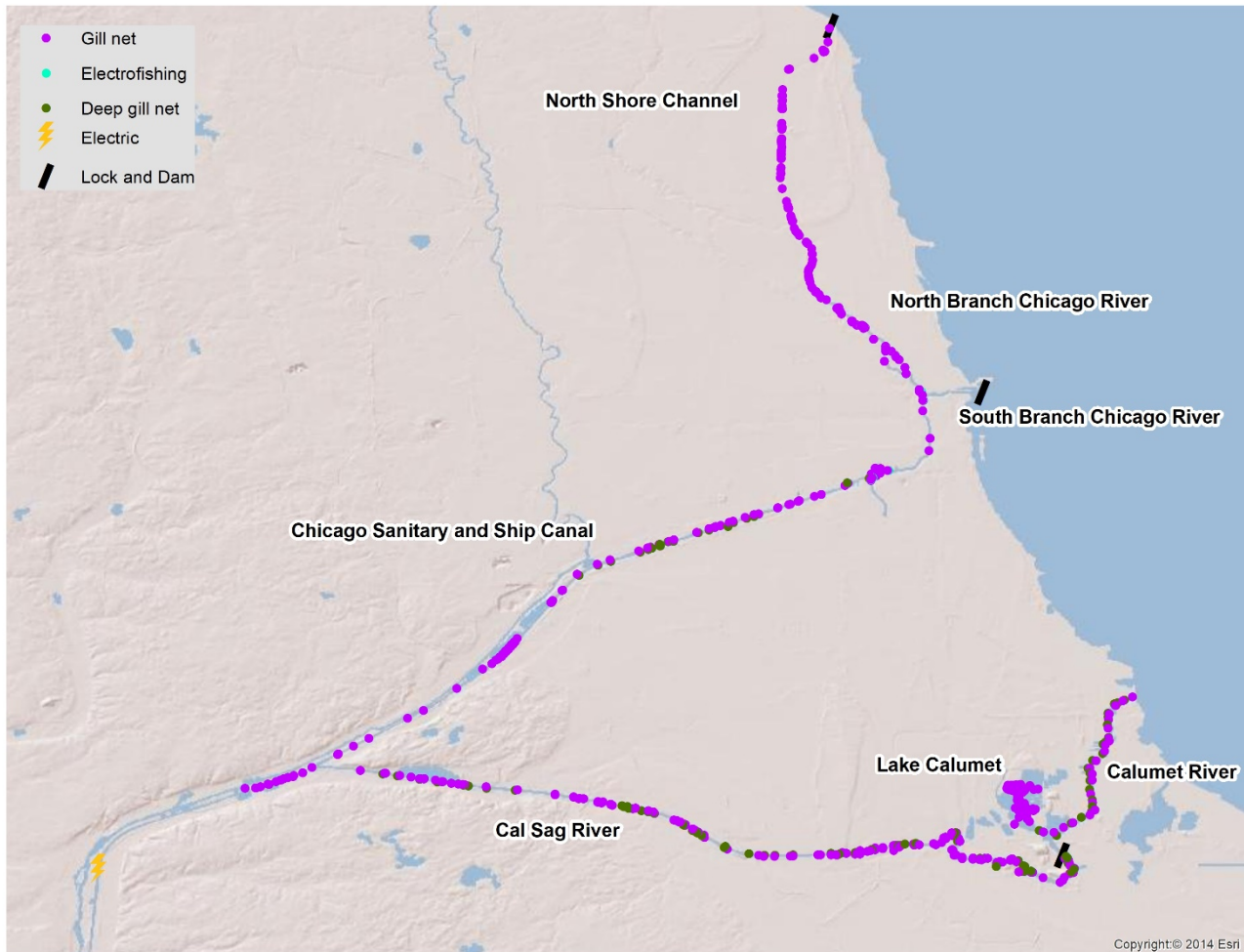


Figure 2. Sample locations throughout the Chicago Area Waterway during the fall 2020 Seasonal Intensive Monitoring.

Overall:

- **A total of 2,973 fish representing 31 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 collected or observed during the September SIM event.**

Paired netting and electrofishing:

- Contract fishers and agency biologist completed 39 paired sets
 - Executing 103 minutes of electrofishing and pulling 7,600 yards of gill net
- Crews collected 40 fish representing 2 species

Commercial Netting:

- Contract fishers along with assisting IDNR biologists set 66.8 miles of gill net (595 sets)

- Crews collected 480 fish representing 10 species and 1 hybrid group

Electrofishing:

- USACE completed 17 hours of distributed among 68 of runs
- Crews collected 2,453 fish representing 26 species



Figure 3. Contracted fisher pulling a gill net (A) and agency biologist completing an electrofishing run (B) while obliging to social distancing protocols during fall Seasonal Intensive Monitoring.

USACE SIM Event Electrofishing

During the month of September USACE participated in the seasonal intensive monitoring (SIM) event of the Chicago Area Waterways (CAWs) above the electric dispersal barrier. During this event USACE conducted 15-minute electrofishing runs at 68 locations throughout the CAWs. There were 15 sites on the Lake Calumet that resulted in a total catch of 557 individuals across 23 species. The five most abundant species captured were common carp (30.5%), largemouth bass (27%), yellow perch (7.4%), Bluegill (7%), and brook silverside (6.8%). There were 22 sites on the Little Calumet River that resulted in a total catch of 1276 individuals across 26 species. The five most abundant species captured were gizzard shad under 6 inches (58%), common carp (18.8%), gizzard shad over 6 inches (6.3%), largemouth bass (4.1%), and bluntnose minnow (2.7%). Seven sites were sampled on the South Branch of the Chicago River between Western Avenue and Wolf Point. There were a total of 132 fish across nine species collected with common carp, gizzard shad over 6 inches and under 6 inches, bluntnose minnow, and spotfin shiners comprising 43.9%, 13.6%, 12.1%, 11.4%, and 9.9% of the catch respectively. Three sites were sampled on the North Branch of the Chicago River between Wolf Point and the North Branch/North Shore Channel Confluence. Across seven species 91 individuals were captured. The catch was comprised of 62.6% gizzard shad under 6 inches, 19.8% gizzard shad over 6 inches, 9.9% white sucker, 4.4% common carp, and 1.1% golden shiner. A total of 205 individuals across 19 species were collected from seven sites in the North Shore Channel. The catch was comprised of 24.9% gizzard shad under 6 inches, 15.6% gizzard shad over 6 inches, 11.2% largemouth bass, 10.7% bluegill, and 7.8% white suckers. A total of 14 species and 149 individual fish were collected in the Calumet River from 13 sites. The catch was comprised of 47.7% largemouth bass, 10.1% smallmouth bass, 8.1% pumpkinseed, 8.1% bluegill, and 7.4% rockbass. One site was sampled on the Chicago Sanitary and Ship Canal between Western Ave and the dispersal barrier. There were 43 individuals across five species captured with gizzard shad over and under 6 inches comprising 62.8% and 16.3% of the catch respectively, emerald shiner at 14%, pumpkinseed at 4.7% and common carp with 2.3% of the catch. **No Asian Carp were captured or observed by USACE during the SIM event.**

Multiple Agency Monitoring of the Illinois River Waterway

- All assigned samples during the first 2 sampling time periods were collaboratively collected among each gear type within each pool (Table 1)
- 38,080 individual fish representing 72 species and 6 hybrid groups have been identified
 - Many samples still need to be processed
- Large Bighead Carp and Silver Carp (>120 mm) were detected as far up river as RM 263
- Small Silver Carp (<120 mm) were captured as far up river as RM 183 (Figure 4)
- Three mini fyke nets within Peoria Pool captured 1,786 Silver Carp < 50 mm (Figure 4)

Table 1. Number of samples collected by gear type and pool during the first two monitoring periods

Gear	Lockport	Brandon	Dresden	Marseilles	Starved Rock	Peoria
Electrofishing	30	24	48	62	70	90
Large Hoop	28	28	28	28	28	28
Small Hoop	28	28	28	28	28	28
Fyke Net	0	0	10	10	10	20
Minnow Fyke	16	16	48	48	48	48

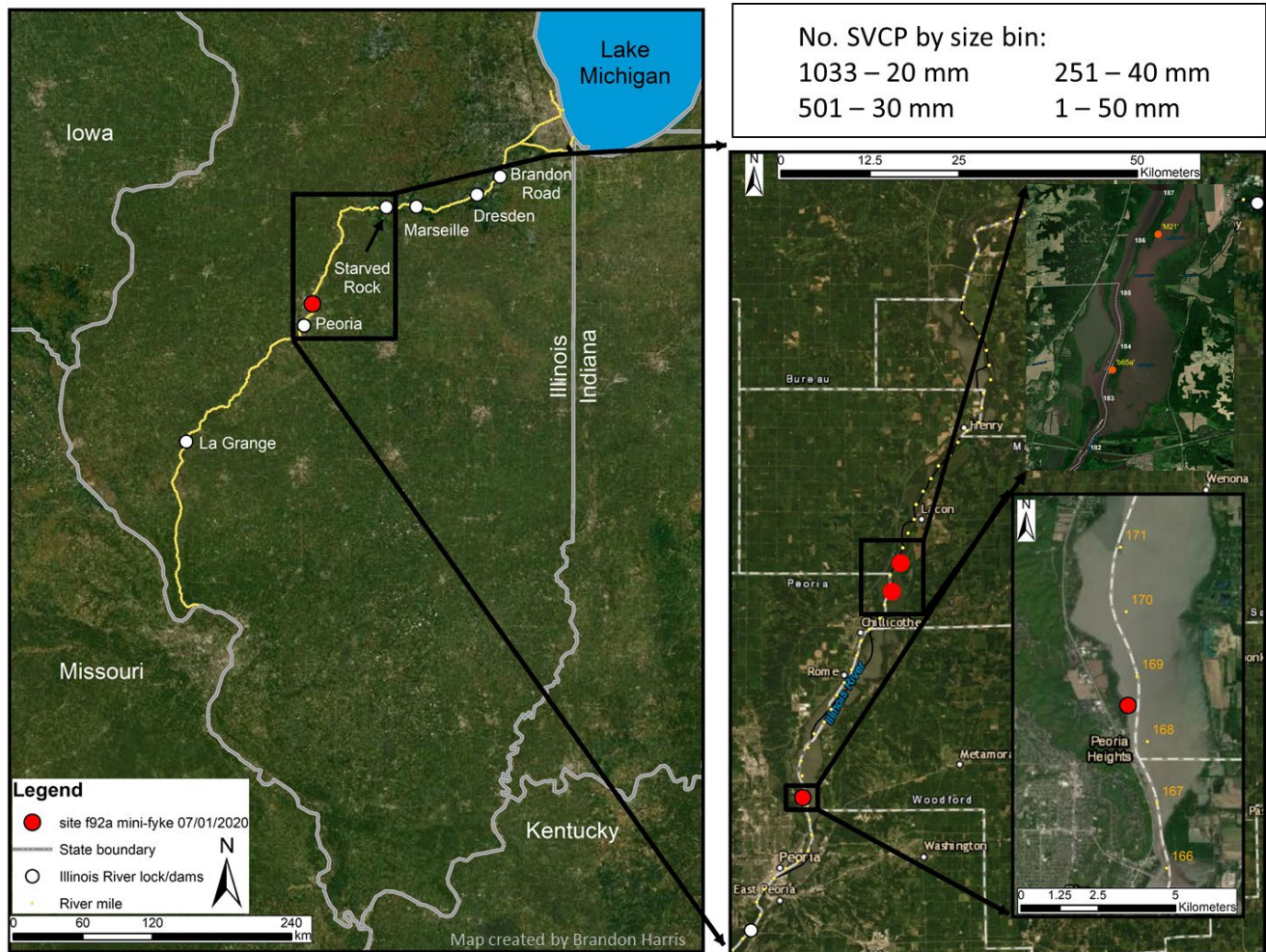


Figure 4. Locations where small silver carp (<120 mm) have been captured and the count of Silver Carp by length bin cumulatively by those nets during the multiple agency monitoring project.

USACE Electrofishing

September Traditional Monitoring

During the month of September USACE conducted eight 15-minute electrofishing runs downstream of the electric dispersal barrier. Four in the Lockport Pool and four in the Brandon Road pool. Within the Lockport Pool there were 105 individual fish captured across 11 species with the top five species caught being gizzard shad under 6 inches (36.2%), threadfin shad (25.7%), emerald shiner (18.1%), gizzard shad over 6 inches (11.4%), and goldfish (1.9%). In the Brandon Road Pool 90 fish across 10 species were captured. The top five species captured were gizzard shad under 6 inches (78.9%), goldfish (5.6%), bluntnose minnow (4.4%), smallmouth bass (2.2%), and emerald shiner (1.1%). No Asian Carp were captured or observed in either pool during the month of September.

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 1,691,888 pounds have been caught for a total of 2,210,020 pounds. Of these total catches, 7.11% are Bighead, 61.05% are Silver and 31.83% are Grass carp. No Black carp have been reported.

Table 2. Table of Enhanced Contract Fishing – Peoria Pool from inception, September 2019 through September. Date by receipt, not catch date.

Year	Total Lbs.	Bighead	Silver	Grass**
2019 *	518,132	24,813	310,297	183,022
2020 (Jan thru Sept)	1,691,888	120,344	1,032,981	538,563
GRAND TOTALS	2,210,020	145,157	1,343,278	721,585

* September 2019 program inception.

** No Black carp reported.

Monitoring Bigheaded Carp Movement and Density in the Illinois River

Active tracking of Silver Carp and Common Carp previously implanted with acoustic telemetry transmitters was performed in the Starved Rock and Peoria pools as part of a collaborative project between SIU and USACE to evaluate the use of Common Carp as a surrogate species for Silver Carp in the CAWS. Hydroacoustic sampling also occurred in late September in Dresden Island, Marseilles, and Starved Rock pools as part of long-term, standardized fall monitoring to assess bigheaded carp relative abundance trends in the Illinois River.

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 the weeks of September 7 and September 21. 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. Water levels in the Illinois Waterway were low and stable throughout the month of September. No Asian carp eggs

or larvae were observed in any sample during this time. 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

INHS collected zooplankton and water chemistry samples at 11 main channel and backwater sites located in the Brandon Road, Dresden Island, Marseilles, Starved Rock, Peoria, and LaGrange Pools during the weeks of September 7 and September 21. Zooplankton and water chemistry sample processing is ongoing. Data are being analyzed to identify relationships between hydrology, water chemistry parameters, and zooplankton metrics, and how changes in Asian carp density affect these responses. The response of key zooplankton taxa in areas where intensive Asian carp removals have occurred will help to inform management agencies of the ecosystem responses to Asian carp removals and develop dynamic targets for diminishing the ecological impacts of Asian carp.

Barrier Operational and Maintenance Status

For the majority of September the barriers were fully functional at the following settings:

- 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. Damage from a semi-truck accident has not been fixed. The parts to fix the fence have been on back order and were just delivered the week of October 19th. The area where the damage occurred is not an area where water flow overland into the canal.

One planned outage occurred during the month of September. The Demo barrier was temporarily turned off on September 21st for approximately 4 hours for a controls inspection.

Alternate Pathway Surveillance in Illinois - Law Enforcement

ISU investigated a Danville bait shop advertising and selling frozen shad and Asian carp parts for bait. The shad were illegally harvested in a prohibited area with a cast net and sold illegally to the bait shop. The use of shad and Asian carp parts as bait within the State, other than in waters where they were legally taken violates IDNR viral hemorrhagic septicemia regulations. Appropriate enforcement was taken, and the owner agreed to not to purchase or sell either product again. ISU identified a second bait shop in Danville operating with an expired license and got the business into compliance.

ISU conducted two bait enforcement details by boat and three angler compliance checks by land. ISU inspected bait shops in Woodstock and Fox Lake, IL. The Woodstock minnow dealer sells minnows from modified vending machines placed at gas stations or other properties near popular fishing locations. No violations were detected during the inspections. All the minnows being sold by the bait shops were confirmed to come from legal sources with disease free certifications.