



Monitoring and Response Workgroup (MRWG)
Monthly Activities
2021 August Summary

Bottom Line: A set of safety protocols developed during the COVID pandemic to ensure safe operations and were carried over into the start of the 2021 field sampling. A large number of small (<6”) Grass Carp, and Silver Carp are being collected in the Peoria Reach on down. **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 August 2021 from all effort within the Upper Illinois Waterway. The same time period in 2019 and 2020 for comparison. Additional effort may not be reported due to data processing and true effort and catch could be higher. Check 2021 interim summary, published at the end of the year, for complete results

Lockport Pool

Effort	2019	2020	2021
Yards of Net Fished	45,000	34,000	59,200
Miles of Net Fished	25.6	19.3	33.6
Hoop Net Nights	91.7	80.3	83
Mini Fyke Net Nights	13.3	11.2	11.3
Electrofishing Runs	37	46	107
Electrofishing Time (hrs)	9.3	11.5	26.8
Dozer Trawl Runs	0	0	87
Dozer Trawl (hrs)	0.0	0.0	7.3
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Road Pool

Effort	2019	2020	2021
Yards of Net Fished	34,800	36,200	65,000
Miles of Net Fished	19.8	20.6	36.9
Hoop Net Nights	89.0	80.1	109
Mini Fyke Net Nights	26.0	13.7	15.3
Electrofishing Runs	31	40	127
Electrofishing Time (hrs)	7.8	10.0	5.25
Dozer Trawl Runs	0.0	0.0	82
Dozer Trawl (hrs)	0	0	6.8
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Dresden Island Pool (Including Rock Run Rookery)

Effort	2019	2020	2021
Yards of Net Fished	96,600	57,600	111,700
Miles of Net Fished	54.9	32.7	63.5
Hoop Net Nights	62.1	81.6	108.8
Mini Fyke Net Nights	21.0	39.5	98.3
Pound net night	0	0	3
Electrofishing Runs	48	55	252
Electrofishing Time (hrs)	12.0	13.8	15.6
Dozer Trawl Runs	0	0	143.0
Dozer Trawl (hrs)	0.0	0.0	11.9
Bighead Carp	29	7	18
Grass Carp	2	1	3
Silver Carp	124	114	83
Total AC	155	122	104
Asian Carp (AC) from Rock Run Rookery Lake (RR)	28	10	27
AC upstream I-55 (not in RR)	3	2*	5
AC downstream I-55	124	110	72
Tons of AC Harvested	1.3	0.8	0.7
AC/1000 yds of gill net	1.6	2.1	0.9

**indicates grass carp*

Marseilles Pool

Effort	2019	2020	2021
Yards of Net Fished	153,000	147,270	120,850
Miles of Nets Fished	86.9	83.7	68.7
Pound Net nights	26	0	0
Hoop Net nights	99.7	105.2	82
Mini Fyke Net Nights	44.3	45.0	45.0
Electrofishing Runs	62	53	43
Electrofishing Time (hrs)	15.5	13.3	10.8
Bighead Carp	859	1,294	1,823
Grass Carp	40	20	37
Silver Carp	30,247	28,001	14,050
Total Asian Carp	31,146	29,315	15,910
Tons of AC Harvested	173.5	158.6	101.5
AC/1000 yds of gill net	200.6	198.9	131.6

Starved Rock Pool

Effort	2019	2020	2021
Yards of Net Fished	233,945	140,780	168,050
Miles of Nets Fished	132.9	80.0	95.5
Pound Net nights	0	0	0
Hoop Net nights	104.3	112.5	70.0
Mini Fyke Net Nights	42.2	46.3	48.0
Electrofishing Runs	71	57	62
Electrofishing Time (hrs)	17.8	14.3	15.5
Bighead Carp	1,885	2,076	649
Grass Carp	2,304	318	623
Silver Carp	112,281	59,660	82,268
Total Asian Carp	116,470	62,054	83,540
Tons of AC Harvested	411.7	179.9	230.6
AC/1000 yds of gill net	495.2	432.1	383.3

Contracted Fishing Below the Electric Dispersal Barrier

- Contracted fishing took place in Lockport, Brandon Road, and Dresden Island Pools of the Illinois River Waterway
- Contracted fishers set and pulled 59,600 yards of gill/trammel net
- 5,914 fish representing 15 species were captured during contracted commercial netting
- **275 Bighead Carp, 4 Grass Carp, and 3,701 Silver Carp were removed**
- **37,595 pounds of Bighead, Grass and Silver Carp were removed**

Below is a summary of all Illinois Department of Natural Resources (IDNR) contracted fishing activities through August 2021. For comparison purposes, data from the same time period in 2019 and 2020 are included.

Effort	2019	2020	2021
Number of Days Fished	103	69	76
Number of Net Crew Days	459	370	412
Yards of Net Fished	563,345	415,250	524,800
Miles of Nets Fished	320.1	235.9	298.2
Number of Pound Net Nights	26	0	3
Number of Hoop Net Nights	0.0	0	0.0
Number of Bighead Carp	2,769	3,377	2,489
Number of Grass Carp	2,330	327	655
Number of Silver Carp	142,009	87,436	96,172
Number of Carp	147,108	91,140	99,316
Tons of AC Harvested	586.5	339.4	332.8
AC/1000 yds of gill net	260.6	219.5	189.2

Enhanced Contract Fishing

To date, a total of 5,672,595 pounds of Asian carp have been removed from the Peoria Pool under the Enhanced Contract Fishing Program. This program was initiated in September of 2019 and offers Illinois-licensed commercial fishermen \$.10 per pound for Asian carp caught in this pool and sold to fish processors or other buyers for at least \$.07 per pound. A total of 30 fishermen are currently under contract to catch Asian carp from the Peoria Pool. From inception through the remainder of calendar year 2019, 518,132 pounds of Asian carp were caught in the Peoria Pool, during full calendar year 2020 a total of 2,882,724 pounds were caught, and to date in 2021 an additional 2,271,739 pounds have been caught for a total of 5,672,595 pounds. Of these total catches, 6.23% are Bighead, 70.20% are Silver and 23.67% are Grass carp. **No Black carp have been reported.**

Table 1. Table of Enhanced Contract Fishing – Peoria Pool from inception, September 2019 through August 2021. **By receipt date, not catch date.**

YEAR	Total Lbs. **	Bighead	Silver	Grass
2019 *	518,132	24,813	310,297	183,022
2020	2,882,724	176,195	1,980,175	726,355
2021 (Jan thru August)	2,271,739	154,934	1,684,419	432,387
GRAND TOTALS	5,672,595	355,941	3,974,890	1,341,764

* September 2019 program inception.

** No Black carp reported.

Monitoring of Asian carp Reproductive Productivity

INHS collected ichthyoplankton samples at 7 main channel sites located from the Brandon Road to LaGrange navigation pools during the weeks of August 9 and August 23. A minimum of four larval fish samples were collected at each site. Additional samples were collected in Illinois River tributaries to evaluate the potential for Asian carp spawning in these rivers. As the period when Asian carp are most likely to spawn has passed, sampling will be conducted every two weeks until October, unless any change in environmental conditions that might trigger Asian carp spawning (i.e. substantial increase in discharge) occurs. Quantitative PCR (qPCR) screening of ichthyoplankton samples will also not occur for the remainder of the year unless conditions indicate that it may be necessary to rapidly identify samples that may contain Asian carp eggs or larvae.

Illinois Waterway water temperatures were above 26°C during the entire month of August, well above the threshold that allows for Asian carp spawning. Water levels in the upper Illinois Waterway were low and stable throughout August. In the lower Illinois River, water levels continuously declined until August 8, underwent a gradual rise through August 15, and then fell again. Initial inspection of samples collected in August did not indicate the occurrence of any mass spawning events, but accurate assessment of any Asian carp reproductive output will require full processing of all samples. Sample processing and identification of larval fish and eggs is ongoing. Any additional occurrences of Asian carp eggs or larvae, particularly upstream of Starved Rock L&D, will be reported as soon as this information is available.

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 to LaGrange navigation pools during the weeks of August 9 and August 23. The collected data will be combined with historical and recent data on Illinois Waterway zooplankton communities to inform management agencies of the ecosystem responses to Asian carp removals and develop dynamic targets for diminishing the ecological impacts of Asian carp.

Monitoring Bigheaded Carp Movement and Density in the Illinois River

Hydroacoustic sampling was conducted in Dresden Island Pool to assess spatial distributions of silver and bighead carp for informing removal efforts. Gillnetting also occurred in Alton, LaGrange, and Peoria pools to sample fish communities for informing analyses of fall hydroacoustic data.

Hydroacoustic Fish Surveys at the Electric Fish Dispersal Barrier System, Romeoville, IL

The U.S. Fish and Wildlife Service conducted one mobile hydroacoustic fish survey this month at the Electric Dispersal Barrier System (EDBS) on August 30, 2021. An earlier survey scheduled for August 16, 2021 was cancelled due to gear failure. The survey was conducted to monitor for the presence and distribution of fishes greater than 12" (30.5 cm) total length in the vicinity of the EDBS to aide in assessing the risk of large fish—and potentially Bighead or Silver Carp—passing through the EDBS during barrier operational changes and/or maintenance. However, it is important to note that hydroacoustic technology does not distinguish or identify fish species, and therefore fish detected should not be assumed to be a particular species. Hydroacoustic surveys covered the area between Hanson Material Services Corporation docking slip, approximately 1.3 km below the Romeo Road Bridge, to the upstream side of the Demonstration Barrier (0.6 km above Romeo Road Bridge). For reporting purposes, Romeo Road Bridge is treated as the dividing line between the areas referred to as “within the EDBS” and “downstream of the EDBS.”

Preliminary Results:

August 30, 2021: Two large fish ≥ -28.7 dB were detected within the EDBS on August 30, 2021, one between Barrier I and the Demonstration Barrier during Replicate Survey #1, and one between Barrier IIB and Barrier I during Replicate Survey #2. Seven large fish ≥ -28.7 dB were detected downstream of the EDBS. Five fish were detected during Replicate Survey #2, and two fish were detected during Replicate Survey #3. Anecdotally, several large schools of YOY gizzard shad (~2-3") were physically and acoustically observed trapped within the EDBS.

Invasive Bigheaded Carp Early Detection Monitoring Surveys in the Upper Illinois Waterway: Lockport, Brandon Road, and Dresden Island Pools, and the Lower Kankakee River

U.S. Fish and Wildlife Service (USFWS) conducted invasive bigheaded carp (Bighead Carp, *Hypophthalmichthys nobilis*; Silver Carp, *H. molitrix*) early detection monitoring (EDM) surveys in Lockport Pool, Brandon Road Pool, Dresden Island Pool, and the lower Kankakee River during August 2021. These surveys were designed to monitor for the presence of invasive bigheaded carp in novel areas of the upper Illinois Waterway below the Electric Dispersal Barrier System (EDBS). The Lockport Pool surveys were completed on 26 August 2021 and covered the area between the EDBS and Lockport Lock and Dam; a distance of about 5 river miles. The Brandon Road Pool surveys were completed on 20 August 2021 and covered the area between Lockport Lock and Dam and Brandon Road Lock and Dam; a distance of about 4.25 river miles. The Dresden Island Pool surveys were completed on 6 August 2021 and covered the area between Brandon Road Lock and Dam and Dresden Island Lock and Dam; a distance of about 13.5 river miles. The Kankakee River surveys were completed on 9 August 2021 and covered the area between the Kankakee Conservation Area Boat Launch and the Kankakee's confluence with the Illinois Waterway; a distance of about 4.25 river miles. Where possible, EDM surveys consisted of traditional boat electrofishing, electrified dozer trawling, and mini-fyke net sets in a combination of main-channel, side-channel, and backwater habitats. Electrofishing was performed in 15-minute sampling periods consisting of repeated passes perpendicular to and toward shore, with one crewmate collecting fishes with a handheld dip net. Dozer trawling was conducted in 5-minute sampling periods consisting of s-shaped passes parallel to shore, and with fishes collected by a net supported by a rigid frame at the boat's bow. Wisconsin-type mini-fyke nets with 24' leads and 1/8" mesh were staked against the shoreline and fished overnight.

Highlighted results:

- No small-bodied (< 350 mm total length; TL) bigheaded carp were captured by USFWS in August 2021.
- No large-bodied (≥ 350 mm TL) bigheaded carp were captured outside their known range by USFWS in August 2021.

Table 2. Summary of USFWS invasive bigheaded carp early detection monitoring preliminary results from August 2021. Location is the section of river sampled. Electrofishing effort reports completed hours of two-person traditional boat electrofishing and n_e is the number of surveys completed. Dozer effort reports completed hours of electrified dozer trawling and n_d is the number of surveys completed. Mini-fyke effort reports the number of overnight net sets completed and n_n is net nights. Small carp captured is the number of bigheaded carp with total length (TL) < 350 mm captured. Large carp captured is the number of bigheaded carp with total length ≥ 350 mm captured. Total fish captured is the total number (N) of individual fishes (all species) captured. Species richness is the count of species captured. Most abundant species is the common name of the fish species that was the largest proportion of total fish captured and n_i is the number of individuals of that species captured.

Location	Electrofishing Effort (h; n _e)	Dozer Effort (h; n _d)	Mini-fyke Effort (n _m)	Small carp captured	Large carp captured	Total fish captured (N)	Species richness	Most abundant species
Lockport	6 h; n _e = 24	0 h; n _d = 0	0	0	0	1367	20	Gizzard shad (n _i = 1040)
Brandon Road	5.25 h; n _e = 21	0 h; n _d = 0	0	0	0	811	21	Gizzard shad (n _i = 651)
Dresden Island	7.5 h; n _e = 30	0 h; n _d = 0	n _m = 21	0	0	8015	46	Bluntnose minnow (n _i = 2587)
Kankakee	5.75 h; n _e = 24	0.37 h; n _d = 5	n _m = 20	0	0	1918	48	Gizzard shad (n _i = 547)

Telemetry Support for the Spatially Explicit Asian Carp Population Model (SEACarP)

Wilmington Fish and Wildlife Service crew conducted a total of two days, August 2-3, of effort for the SEACarP telemetry project in the Peoria Pool. Efforts focused on maintaining and downloading data from stationary telemetry equipment. All receivers were recovered, downloaded, and redeployed in the same locations.

Table 3. Detections of fish at each receiver location in the Peoria Pool. Receiver = serial number, Station name = combination of river mile (RM) and geographic/visual location information, # Fish = number of unique tagged individuals, # Detections = number of recorded detections by a receiver.

Receiver	Station Name	# Fish	# Detections
VR2W-129785	RM166.6 Peoria Lake Narrows	21	198
VR2W-129781	RM182.4 US Chilli Bridge_Peninsula	14	413
VR2W-129779	RM188.1 DS Lacon_MC Sawyer Slough	22	4093
VR2W-129787	RM194.8 US Upper Henry Island	26	11407
VR2W-137063	RM202.7 Lower Twin Sisters Island	33	1818
VR2W-137065	RM216 US of Clark Island	33	1954
Totals		62	19883

Barrier Operational and Maintenance Status

Traditional Monitoring – During the month of August, USACE biologists conducted twenty-seven 15-minute electrofishing runs downstream of the barrier. In Lockport Pool, there were 16 sites, and the remaining 11 sites were in Brandon Road Pool. Within the Lockport Pool, 1050 individuals were captured across 19 species. The five most abundant species captured were gizzard shad over 6 inches (37.4%), gizzard shad under 6 inches (32.3%), emerald shiner (16.1%), bluntnose minnow (9.6%), and common carp (1.1%). Within the Brandon Road Pool, 904 individuals were captured across 22 species. The five most abundant species found were gizzard shad under 6 inches (68.9%), gizzard shad over 6 inches (14.3%), emerald shiner (5.9%), smallmouth bass (2.4%), and common carp (1.9%). No Asian Carp were captured or observed during the month of August.

Barrier Maintenance – In the month of August, Barrier IIB was off for cooling system upgrades and periodic outages were experienced at the barriers, but at no time was there not at least one barrier providing power to the water.

When barriers were operational, they were operating at the following parameters

IIA – Narrow (34 Hz, 2.3 ms, 1800 V = 1.7 V/in) & wide (34 Hz, 2.3 ms, 800 V = ~1.0 V/in) arrays operational

IIB – Not operational, cooling system upgrade

Barrier 1 Demo (ID) – Full water (5 Hz, 4 ms, 400 V = 1.0 V/in) & benthic (5 Hz, 4 ms, 100V) operational

Barrier 1 North (1N) – Operational (34 Hz, 2.3 ms, 1700 V = 2.3 V/in)

August 11 – Barrier 1N and 1D experienced a loss of power at 09:44 with power returning at 09:58 and 10:03 respectively. This was likely due to a thunderstorm experienced locally. Barrier 2A did not lose power in the water during this period.

August 25 – Barrier 1N experienced a loss of power between 18:45 and 20:25. Barriers 1D and 2A were both operational at this time.

Alternate Pathway Surveillance in Illinois - Law Enforcement

ISU and District 4 Conservation Police Officers are investigating the illegal dumping of approximately \$4500 worth of eels, turtles, goldfish, and frogs into the Chicago river in what is believed to be a merit release ceremony. A video of the act has been obtained and potential suspects have been identified. The store where the aquatic life was purchased has also been identified. The investigation is ongoing. ISU inspected an aquaculture facility in Springfield that is raising tilapia, a non-approved, species. ISU investigated a complaint of an out of state fish hauler illegally importing and stocking fish into Illinois waters. Evidence of the illegal activity was gathered, and the suspect was interviewed in Indiana. The case is ongoing. ISU inspected a fish truck in St. Clair County. The Missouri resident was legally transporting Hybrid Stripped bass purchased from an Illinois aquaculture facility into Missouri. The “fish truck” consisted of a Jeep truck with a large plastic container in the bed that had an oxygen tank strapped to it. ISU issued a warning to a Chicago food distribution company for illegally importing red swamp crayfish into Illinois. Purchase invoices received from the company identified the Louisiana seafood dealer who was shipping the crayfish to food distribution company. ISU answered questions from a Lake county boat dealer on regulations related selling and transporting boats with zebra mussels attached. ISU participated in a surveillance operation on an aquatic life dealer suspected of illegally importing live injurious species into the State.

