

2019 August Summary

Bottom Line: Multiple agencies participated in monitoring Asian Carp (Bighead Carp, Black Carp, Grass Carp, and Silver Carp) in the upper Illinois Waterway downstream of the Electric Dispersal Barrier during August 2019. **NO LIVE BIGHEAD CARP, BLACK CARP, GRASS 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:

- During the month of August 2019, United States Army Corporation of Engineers (USACE) and the Illinois Department of Natural Resources (IDNR) crews conducted 12 electrofishing runs in Lockport Pool, 12 in Brandon Road Pool, 13 in Dresden Island Pool and 14 in Marseilles Pools at fixed and random sites.
- Scheduled monitoring by USACE during the week of 19 August was postponed due to equipment malfunction.
- A total of 4,371 fish representing 58 species and 2 hybrid groups were captured across the four pools during August.
- **One Silver Carp was capture above the I55 bridge in the Dresden Island Pool, 21 Silver carp were captured in Marseilles pool and 0 Silver Carp were captured or observed in Lockport Pool or Brandon Road Pool during electrofishing during August 2019.**

Hoop netting:

- IDNR set 74.15 hoop net nights in Lockport and Brandon Road Pools during August 2019.
- A total of 65 fish representing 10 species were captured across the two pools with hoop nets during August 2019.
- **No Bighead Carp, Black Carp, Grass Carp, or Silver Carp were captured or observed in Lockport Pool or Brandon Road Pool during hoop netting during August 2019.**

Mini fyke netting:

- IDNR set 19.3 mini fyke net nights in Lockport and Brandon Road Pools during August 2019.
- A total of 653 fish representing 22 species and 2 hybrid groups were captured across the two pools with mini fyke nets during August 2019.
- **No Bighead Carp, Black Carp, Grass Carp, or Silver Carp were captured or observed in Lockport Pool or Brandon Road Pool during mini fyke netting in August 2019.**

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 35.9 miles of gill/trammel net in Lockport Pool, Brandon Road Pool, and Dresden Island Pool (including Rock Run Rookery) of the Illinois River during August 2019.
- Cumulatively, 275 fish representing 14 species were captured in the three pools during contracted commercial netting effort during August 2019.
- One Bighead Carp and 3 Silver Carp were captured in Dresden Island Pool below the I55 bridge during contracted commercial netting effort during August 2019.
- Nine Bighead Carp and 1 Silver Carp were captured in Rock Run Rookery during contracted commercial netting effort during August 2019.
- **No Bighead Carp or Silver Carp were captured in Dresden Island Pool above I55 bridge (excluding Rock Run Rookery), Lockport Pool or Brandon Road Pool during contracted commercial netting during August 2019.**

Sampling results below the electric dispersal barrier by pool through July 2019, along with the same time period in 2017 and 2018 for comparison (caution should be applied when comparing hoop net and mini fyke results among years due to changes in protocols):

Lockport Pool

	2017	2018	2019
Yards of Net Fished	62,600	62,500	43,000
Miles of Net Fished	35.6	35.5	24.4
Hoop Net Nights	32.6	32.6	91.7
Mini Fyke Net Nights	17.7	16.9	13.3
Electrofishing Runs	92	139	34
Electrofishing Time (hrs)	23.0	34.8	8.5
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Road Pool

	2017	2018	2019
Yards of Net Fished	70,200	62,800	34,800
Miles of Net Fished	39.9	35.7	19.8
Hoop Net Nights	35.4	31.1	89.0
Mini Fyke Net Nights	19.6	14.7	25.1
Electrofishing Runs	95	120	34
Electrofishing Time (hrs)	23.8	30.0	8.5
Total Asian Carp (AC)	1*	1*	2*
Tons of AC Harvested	0	0	0

* indicates that the AC captured were Grass Carp

Dresden Island Pool (Including Rock Run Rookery)

	2017	2018	2019
Yards of Net Fished	99,350	162,700	96,600
Miles of Net Fished	56.4	92.4	54.9
Hoop Net Nights	327.4	28.3	0.0
Mini Fyke Net Nights	23.0	15.7	21.0
Pound net night	0	4	0
Electrofishing Runs	155	157	38
Electrofishing Time (hrs)	38.8	39.3	9.5
Bighead Carp	274	295	29
Grass Carp	8	42	2
Silver Carp	450	731	124
Total AC	732	1068	155
Asian Carp (AC) from Rock Run Rookery Lake (RR)	182	110	27
AC upstream I-55 (not in RR)	29*	6*	4
AC downstream I-55	521	952	124
Tons of AC Harvested	8.3	9.2	2.3
AC/1000 yds of gill net	7.1	6.5	1.6

* indicates that the AC captured upstream of I-55 included includes Bighead Carp, Grass Carp and Silver Carp.

Asian Carp Removal Project

Removal took place in Marseilles Pool and Starved Rock Pool of the Illinois River. Below is a summary of all IDNR removal activities through August 2019, including 15 weeks of contracted fishing and two unified fishing methods (UFM). For comparison purposes, data from the same time period in 2017 and 2018 are included.

Overall

	2017	2018	2019
Number of Days Fished	44	50	72
Number of Net Crew Days	167	238	360
Yards of Net Fished	282,210	247,500	384,345
Miles of Nets Fished	160.3	140.6	218.4
Number of Pound Net Nights	74	22	26
Number of Hoop Net Nights	879.8	1217.1	0.0
Number of Bighead Carp	2,276	2,541	2,708
Number of Silver Carp	85,196	81,462	141,126
Number of Grass Carp	615	752	2,394
Number of Asian Carp (AC)	88,087	84,755	146,228
Tons of AC Harvested	306.9	317.3	558.3
AC/1000 yds of gill net	262.0	321.9	379.4

Marseilles Pool

	2017	2018	2019
Yards of Net Fished	186,710	113,500	151,000
Miles of Nets Fished	106.1	64.5	85.8
Pound Net nights	74	22	26
Hoop Net nights	80.7	254.9	0.0
Mini Fyke Net Nights	19.4	15.7	0.0
Electrofishing Runs	96	120	27
Electrofishing Time (hrs)	24.0	30.0	6.8
Bighead Carp	1,270	1,260	846
Grass Carp	56	35	39
Silver Carp	30,243	27,231	30,144
Total Asian Carp	31,569	28,526	31,029
Tons of AC Harvested	136.3	135.3	174.2
AC/1000 yds of gill net	159.7	238.2	202.6

Starved Rock Pool

	2017	2018	2019
Yards of Net Fished	95,500	134,000	233,345
Miles of Nets Fished	54.3	76.1	132.6
Hoop Net nights	831.2	992.6	108.2
Mini Fyke Net Nights	0.0	0.0	0.0
Electrofishing Runs	0	0	8
Electrofishing Time (hrs)	0.0	0.0	2.0
Bighead Carp	1,014	1,282	1,863
Grass Carp	576	726	2,360
Silver Carp	55,383	54,413	111,050
Total Asian Carp	56,973	56,421	115,273
Tons of AC Harvested	176.1	182.6	384.5
AC/1000 yds of gill net	462.0	392.9	493.8

Monitoring Bigheaded Carp Movement and Density in the Illinois River

Southern Illinois University (SIU) conducted mobile hydroacoustic surveys throughout the Marseilles and Dresden Island pools of the Illinois River from Aug 19 – 23. Hydroacoustic data were analyzed and bigheaded carp density heatmaps were created depicting bigheaded carp spatial distributions throughout both pools and provided to IDNR the week of Aug 26 in order to inform contracted removal efforts.

A hydroacoustic field experiment was conducted in Dresden Island pool in late August. The study's goal is to quantify the probability of mobile hydroacoustic surveys to detect bigheaded carp, with the goal of informing surveillance efforts above Brandon Road Lock and Dam. Subsurface buoys were deployed and hydroacoustic sampling was conducted along the buoy locations. Sampling was performed at three vessel speeds to determine how sampling speed affects probability of detecting bigheaded carp.

Active tracking of acoustically tagged Common Carp and Silver Carp occurred in the Starved Rock Pool the week of Aug 5 as part of the SIU–USACE collaboration comparing the movements and habitat use of Common Carp and Silver Carp to evaluate the use of Common Carp as a surrogate for Silver Carp. Acoustic receivers were also retrieved and downloaded in Starved Rock and Peoria pools.

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

The U.S. Fish and Wildlife Service (USFWS) conducted three mobile hydroacoustic fish surveys at the Electric Dispersal Barrier System (EDBS) during August 2019. The surveys were completed on August 2, 2019, August 13, 2019, and August 27, 2019 to monitor for the presence and distribution of large fishes greater than 12 inches (30.5 cm) total length near the EDBS. The purpose of these hydroacoustic surveys is to aide in assessing the risk of fish detected near the EDBS being either Bighead or Silver Carp prior to or during barrier operational changes and/or maintenance. Hydroacoustic surveys covered the area between Hanson Material Services Corporation (HMSC) 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:

No large fish targets were detected within the EDBS on August 2, 2019. One large fish target was detected downstream of the EDBS.

Two large fish targets were detected within the EDBS on August 13, 2019. One fish was detected between the Demo Barrier and Barrier IIB. One fish was detected between Barrier IIA and Barrier IIB. Additionally, three large fish targets were detected downstream of the EDBS.

Five large fish targets were detected within the EDBS on August 27, 2019. Four were detected between the Demo Barrier and Barrier IIB. One fish was detected between Barrier IIA and Barrier IIB. No large fish targets were detected downstream of the EDBS.

Hydroacoustic Fish Surveys of the upper Illinois Waterway: Dresden Island, Brandon Road, and Lockport Pools

The USFWS conducted mobile hydroacoustic fish surveys in Dresden Island Pool, Brandon Road Pool, and Lockport Pool during August 2019. The Lockport Pool survey was completed on August 5, 2019. The Brandon Road Pool survey was completed on August 6, 2019. The Dresden Island Pool survey was completed on August 8, 2019. These pool surveys were designed to monitor for the presence and density of large fishes, potentially either Bighead Carp or Silver Carp, greater than -30.5 dB (theoretical side-aspect target strength of a 10 inch (30.5 cm) total length fish) within the upper Illinois Waterway. The hydroacoustic survey in Lockport Pool covered the area between HMSC docking slip and Lockport Lock and Dam approximately 6.5 km. The hydroacoustic survey in Brandon Road Pool covered the area between Lockport Lock and Dam and Brandon Road Lock and Dam approximately 7.2 km. The hydroacoustic survey in Dresden Island Pool covered the area between Brandon Road Lock and Dam and Dresden Island Lock and Dam approximately 23 km. In all pools, surveys consisted of a single clockwise-loop transect with the boat following the contour of the main channel edge while ensonifying water within the channel.

Preliminary Results:

Lockport Pool:

A mean density of 2.0 large fish targets per 100,000 m³ were detected in Lockport Pool. Four fish were detected, on the -9.6° subsurface transducer, in 398,968 m³ of ensonified water. Twenty five fish were detected, on the -3.2° surface transducer, in 827,735 m³ of ensonified water.

Brandon Road Pool:

A mean density of 1.9 large fish targets per 100,000 m³ were detected in Brandon Road Pool. Three fish were detected, on the -9.6° subsurface transducer, in 229,271 m³ of ensonified water. Thirteen fish were detected, on the -3.2° surface transducer, in 521,866 m³ of ensonified water.

Dresden Island Pool:

A mean density of 7.6 large fish targets per 100,000 m³ were detected in Dresden Island Pool. Fifty-two fish were detected, on the -9.6° subsurface transducer, in 536,268 m³ of ensonified water. Sixty-nine fish were detected, on the -3.2° surface transducer, in 1,258,784 m³ of ensonified water.

Telemetry

USACE

No new telemetry data were collected from the receivers during August 2019. No new transmitters were implanted into any fish in August.

United States Geological Services (USGS)

Seven bigheaded carp (six Bighead carp and one Silver carp) were detected at the Minooka, IL real-time receiver above Dresden Island Lock and Dam during the month of August 2019. The maximum number of fish detected on one day was four and the minimum was zero. In addition to bigheaded carps, one grass carp was detected in the Hanson Material Service east pit connecting channel. No fish were detected moving among pools. No bigheaded carp were detected at any other receivers in August. All data can be found at: <https://umesc-gisdb03.er.usgs.gov/Fishtracks/Report/MonthlyRealtimeReport>. Contact Travis Harrison (tharrison@usgs.gov) with questions.

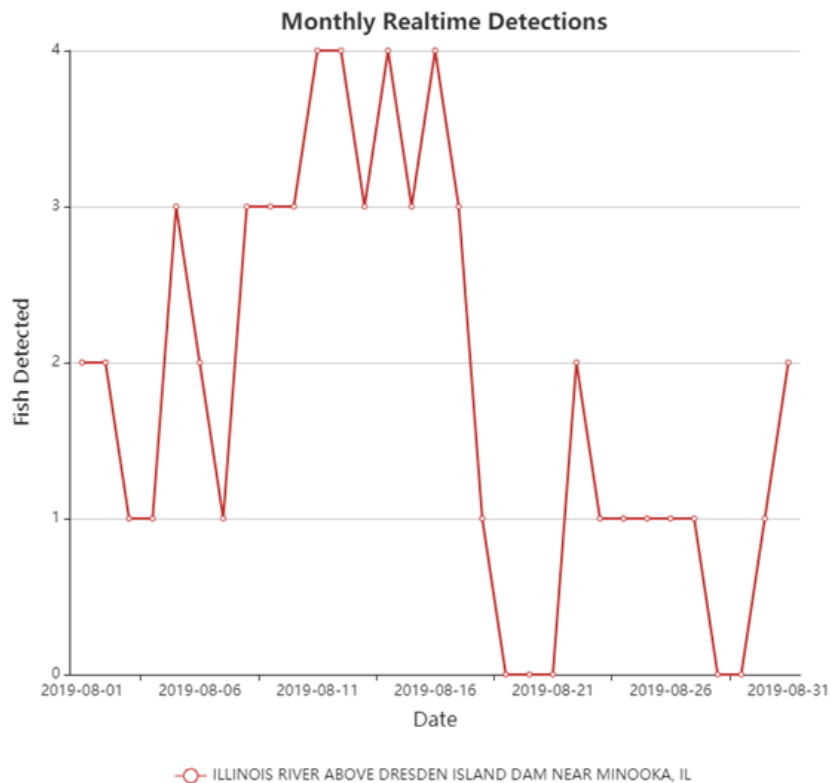


Figure 1. Bigheaded carp (Bighead carp and Silver carp) detections for 1 August – 31 August 2019 at the Minooka receiver.

These data are preliminary or provisional and are subject to revision. They are being provided to meet the need for timely best science. The data have not received final approval by the USGS and are provided on the condition that neither the USGS nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the data. For additional details, on the hydrographs figure please contact Marybeth Brey (mbrey@usgs.gov).

Juvenile Silver carp habitat use and movement (telemetry)

In August 2019, USFWS Wilmington office conducted a total of 1.5 weeks of effort for the Juvenile Silver carp habitat use and movement (telemetry) project. Efforts focused on downloading data and performing maintenance on both acoustic and radio stationary receivers. River conditions throughout 2019 have prevented crews from locating 5 underwater acoustic receivers. More effort will be conducted to attempt location of this equipment or the equipment will be replaced during the month of October 2019. Additionally, during October 2019, one of the radio telemetry stations will be relocated and one additional station will be deployed in preparation for fall fish tagging. Fishing effort and tagging for juvenile Silver carp will take place during the second half of October 2019.

Zooplankton as dynamic assessment targets for Asian carp removal

Illinois Natural History Survey (INHS) collected zooplankton and water chemistry samples 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 5 and August 19. Zooplankton samples are being processed to estimate both density and biomass of different zooplankton taxa throughout the Illinois Waterway. The collected data will be combined with historical and recent data on Illinois Waterway zooplankton communities to inform management agencies of ecosystem responses to Asian carp removals and develop dynamic targets for diminishing the ecological impacts of Asian carp.

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 August 5 and August 19. Four larval fish samples were collected at each site. Additional samples were collected in Illinois River tributaries. Water levels in the Illinois River were low and relatively stable during the month of August, and no Asian carp eggs or larvae were observed upon initial inspection of August samples. Processing of samples and identification of larval fish and eggs is ongoing. Ichthyoplankton sampling will continue to occur biweekly through October. Ichthyoplankton data will be used 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. Results, particularly regarding occurrences of Asian carp eggs or larvae, will be reported as soon as they are available.

Barrier Operational and Maintenance Status

Status as of 31 July 2019

- 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 are Open

Barrier IIB wide and narrow arrays were powered down for just over six hours on 3 July 2019 in support of cooling tower repair work. Barriers IIA and the Demonstration Barrier were active during this work. No opportunity for fish passage occurred.

The Demonstration Barrier was powered down for annual maintenance from 9am on 8 July 2019 through 2pm on 10 July 2019. The Demo was powered back down at 8am on 16 July for inspections and was brought back online by 8 am on 17 July 2019. Barrier IIA and IIB were fully functional during this outage and no opportunity for fish passage occurred.

Barrier IIA experienced a minor loss of power to the water for less than 30 sec at its narrow array on 24 July as power was transferred from its primary to secondary pulser around 7am. A wide array outage also occurred on 24 July from 7am to 10am. The operating pulser for the narrow array was toggled between the primary and secondary units on 25 July at 1am and 7am for two more minor losses of power to the water. The wide array was powered down between 7am and 3pm on 25 July 2019. The narrow array for Barrier IIA was shut down around 11pm on 25 July and was turned back on for ten hours on 31 July 2019 between 10am and 7pm before being turned back off. Barrier IIA narrow array was powered back on for full time operation on 2 August 2019. Barrier IIB and the Demonstration Barriers were fully operating during these Barrier IIA outages. A notification was sent to the MRWG on 5 August indicating an opportunity for fish passage had occurred at Barrier IIA.

Alternate Pathway Surveillance in Illinois - Law Enforcement

Invasive Species Unit (ISU) inspected two aquaculture facilities in Lake County that were applying for permits to raise non-indigenous species. ISU conducted two enforcement details on the Chain O' Lakes focusing on bait regulations and the illegal transportation of aquatic plants and animals in navigable waters and on the highways. ISU assisted Region 4 CPOs with the inspection of a fish hauler transporting Asian carp. No violations were detected. ISU inspected a commercial warehouse in Chicago that was requesting a Special Circumstance permit to possess and sell an injurious plant in Illinois that is scheduled to be delisted as injurious soon. ISU assisted a District 9 CPO with an investigation into a commercial fisherman collecting crayfish in Illinois and selling them in another state as bait. ISU conducted live fish market inspections in Cook county, and no live injurious species were detected. ISU investigated 5 Illinois restaurants/markets alleged by an animal welfare group to be selling shark fin products in violation of Illinois law. None of the businesses were operating illegally and it was determined the allegations were based upon old websites or menus the welfare group located on the Internet. ISU seized live Red swamp crayfish and invoices from two separate Asian markets in Schaumburg. Enforcement action was taken on both stores for possessing and selling a non-approved species and one of the stores was cited for operating a fish market without a retail aquatic life dealer's license.