

2019 October Summary

Bottom Line: Multiple agencies participated in monitoring Asian Carp (Bighead Carp, Black Carp, Grass Carp, and Silver Carp) in the upper Illinois Waterway during October 2019. **NO LIVE BIGHEAD CARP, BLACK CARP, GRASS CARP, or SILVER CARP were found in any new locations immediately downstream or upstream of the Electric Dispersal Barrier.**

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

Electrofishing:

- During October 2019, United States Army Corporation of Engineers (USACE) and Illinois Department of Natural Resources (IDNR) crews conducted 11 electrofishing runs in Lockport Pool, 13 in Brandon Road Pool, 20 in Dresden Island Pool, and 19 in Marseilles Pool at fixed and random sites.
- A total of 5,072 fish representing 60 species and 4 hybrid groups were captured across the four pools during October.
- **Five Silver Carp was captured in the Marseilles Pool with electrofishing during October 2019.**

Hoop netting:

- IDNR and the United States Fish and Wildlife Service (USFWS) - Wilmington set 140.32 hoop net nights in Lockport, Brandon Road, and Marseilles Pools during October 2019.
- A total of 1,009 fish representing 18 species were captured across the three pools with hoop nets during October 2019.
- **No Bighead Carp, Black Carp, Grass Carp, or Silver Carp were captured or observed in Lockport Pool, Brandon Road Pool, or Marseilles Pool during hoop netting during October 2019.**

Mini fyke netting:

- IDNR and USFWS - Wilmington set 55.2 mini fyke net nights in Brandon Road, Dresden Island Pools and Marseilles during October 2019.
- A total of 3,220 fish representing 45 species and 2 hybrid groups were captured across the two pools with mini fyke nets during October 2019.
- **No Bighead Carp, Black Carp, Grass Carp, or Silver Carp were captured or observed in Brandon Road, Dresden Island and Marseilles Pools during mini fyke netting in October 2019.**

Commercial Netting:

- Contracted commercial fishers with assisting IDNR biologists set 33.4 miles of gill/trammel net in Lockport, Brandon Road, and Dresden Island Pool (including Rock Run Rookery) during October 2019.
- 2,236 fish representing 20 species and 1 hybrid group were captured during contracted commercial netting effort in Lockport, Brandon Road, Dresden Island Pools during October 2019.
- **No bighead, 1 Grass Carp, and 3 Silver Carp were captured above the I55 bridge in Dresden Island Pool (excluding rock run rookery) during contracted commercial netting in October 2019.**
- **8 Bighead Carp, 2 Grass Carp, and 95 Silver Carp were captured below the I55 bridge in Dresden Island Pool bridge during contracted commercial netting in October 2019.**
- **2 Bighead Carp and 6 Silver Carp were captured in Rock Run Rookery during contracted commercial netting during October 2019.**

Sampling results below the electric dispersal barrier by pool through October 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 sampling protocol changes. Additionally, all effort may not be reported due to data processing so actual effort amount and catch is likely higher. Check 2019 interim summary, published at the end of the year, for complete results.)

Lockport Pool

	2017	2018	2019
Yards of Net Fished	75,600	72,300	48,200
Miles of Net Fished	43.0	41.1	27.4
Hoop Net Nights	46.6	48.8	163.8
Mini Fyke Net Nights	25.2	24.9	22.2
Electrofishing Runs	118	157	61
Electrofishing Time (hrs)	29.5	39.3	15.3
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Road Pool

	2017	2018	2019
Yards of Net Fished	88,600	70,400	44,600
Miles of Net Fished	50.3	40.0	25.2
Hoop Net Nights	50.3	47.1	158.8
Mini Fyke Net Nights	27.1	22.7	33.1
Electrofishing Runs	117	144	66
Electrofishing Time (hrs)	29.3	36.0	16.5
Total Asian Carp (AC)	1*	1*	0
Tons of AC Harvested	0	0	0

* Indicates that AC captured were Grass Carp

Dresden Island Pool (Including Rock Run Rookery)

	2017	2018	2019
Yards of Net Fished	155,800	216,500	146,850
Miles of Net Fished	88.5	123.0	83.3
Hoop Net Nights	343.3	44.3	76.3
Mini Fyke Net Nights	30.9	23.7	66.2
Pound net night	4	8	2
Electrofishing Runs	172	189	73
Electrofishing Time (hrs)	43.0	47.3	18.3
Bighead Carp	302	396	42
Grass Carp	25	51	8
Silver Carp	515	1178	262
Total AC	842	1625	312
Asian Carp (AC) from Rock Run Rookery Lake (RR)	226	119	45
AC upstream I-55 (not in RR)	31*	9*	9*
AC downstream I-55	584	1497	258
Tons of AC Harvested	9.2	15.4	4.9
AC/1000 yds of gill net	5.2	7.4	2.1

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

Unified Fishing Method (UFM) – Dresden Island Pool

During the week of October 15th, 2019, a Unified Fishing Method event was completed in Dresden Island Pool. Multiple agencies and contracted commercial fishing crews fished the entire navigation pool starting at Brandon Road Lock and Dam tail waters to the approach channel downstream of the Dresden Island Lock and Dam. Sampling area also included Rock Run Rookery Lake and the downstream end of the Kankakee River. Crews used several fish driving methods (e.g., complex noise, banging, revving motors), in conjunction with multiple capture methods (e.g., electrofishing, gill and trammel nets, and a pound net) to capture and remove Asian Carp (Figure 1). Below is a summary of effort and catch during the UFM.

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 14.8 miles of gill/trammel net during the Dresden Island Pool UFM (including Rock Run Rookery and the Kankakee River).
- Crews collected 1,471 individual fish representing 14 species.
- **No Bighead Carp, Grass Carp, or Silver Carp were collected upstream of I55 (excluding Rock Run Rookery).**
- **4 Bighead Carp, 3 Grass Carp, and 21 Silver Carp were collected downstream of I-55**
- **No Bighead Carp, 0 Grass Carp, and 3 Silver Carp were collected in Rock Run Rookery.**

Pound Net:

- Contracted commercial fishers with assisting IDNR biologist set a pound net in the chute connecting Rock Run Rookery and the Dresden Island Pool (throat of the net facing the main channel) for 2 net nights.
- The crew collected 44 individual fish representing 11 species.
- **No Bighead Carp or Silver Carp were collected with the pound net during the UFM.**

Electrofishing:

- The USACE, USFWS and Illinois Natural History Survey (INHS) - Illinois River Biological Station used electrofishing boats to assist in herding fish into contracted commercial fishers gill nets.
- No effort or catch was recorded.

Shallow Drive boats

- The IDNR and INHS used one shallow drive boat to herd fish from shallow water areas into contracted commercial fishers gill nets and downstream.
- This gear was not used to capture individuals thus no effort was recorded.

Noise boats

- The United States Geological Survey (USGS) - Columbia Environmental Center used two boats equipped with complex noise speakers to herd fish into contracted commercial fisher gill nets and prevent fish from moving back up stream.



Figure 1. Boats collaboratively utilizing complex noise, electrofishing, and motor revving to herd fish into passively fishing gill/trammel nets.

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 October 2019, including 18 weeks of contracted fishing and two UFM's. For comparison purposes, data from the same time period in 2017 and 2018 are included.

Overall

	2017	2018	2019
Number of Days Fished	77	76	94
Number of Net Crew Days	257	357	488
Yards of Net Fished	399,185	345,500	519,155
Miles of Nets Fished	226.8	196.3	295.0
Number of Pound Net Nights	78	30	28
Number of Hoop Net Nights	953.8	1628.2	0.0
Number of Bighead Carp	2,874	3,379	3,013
Number of Silver Carp	122,369	109,468	172,552
Number of Grass Carp	893	1,092	2,659
Number of Asian Carp (AC)	126,136	113,939	178,224
Tons of AC Harvested	438.5	442.2	645.7
AC/1000 yds of gill net	278.1	312.6	342.3

Additional samples have been collected, but sample processing is not completed, and those data have not been entered into the database. Check the 2019 interim summary published at the end of the year for results.

Marseilles Pool

	2017	2018	2019
Yards of Net Fished	235,435	144,800	187,610
Miles of Nets Fished	133.8	82.3	106.6
Pound Net nights	74	22	26
Hoop Net nights	98.0	270.8	141.2
Mini Fyke Net Nights	28.0	23.7	68.9
Electrofishing Runs	120	144	86
Electrofishing Time (hrs)	30.0	36.0	21.5
Bighead Carp	1,479	1,372	951
Grass Carp	68	43	43
Silver Carp	37,161	31,608	35,174
Total Asian Carp	38,708	33,023	36,168
Tons of AC Harvested	171.3	157.6	201.5
AC/1000 yds of gill net	156.9	217.7	190.3

Additional samples have been collected, but sample processing is not completed, and those data have not been entered into the database. Check the 2019 interim summary published at the end of the year for results.

Starved Rock Pool

	2017	2018	2019
Yards of Net Fished	163,750	200,700	331,545
Miles of Nets Fished	93.0	114.0	188.4
Hoop Net nights	905.1	1403.7	108.2
Mini Fyke Net Nights	0.0	0.0	67.9
Electrofishing Runs	0	0	115
Electrofishing Time (hrs)	0.0	0.0	28.8
Bighead Carp	1,093	1,611	2,026
Grass Carp	799	998	2,636
Silver Carp	84,694	76,682	138,026
Total Asian Carp	86,586	79,291	142,688
Tons of AC Harvested	262.5	269.3	443.3
AC/1000 yds of gill net	447.4	373.2	427.4

Additional samples have been collected, but sample processing is not completed, and those data have not been entered into the database. Check the 2019 interim summary published at the end of the year for results.

Monitoring Bigheaded Carp Movement and Density in the Illinois River

Hydroacoustic sampling occurred in each pool from Dresden Island to Alton pool throughout October. This included two surveys in Dresden Island Pool in support of the Unified Method. Asian carp density heatmaps were generated and shared with IDNR before the Unified Method to inform harvest, and differences in density before and after the Unified Method will be compared.

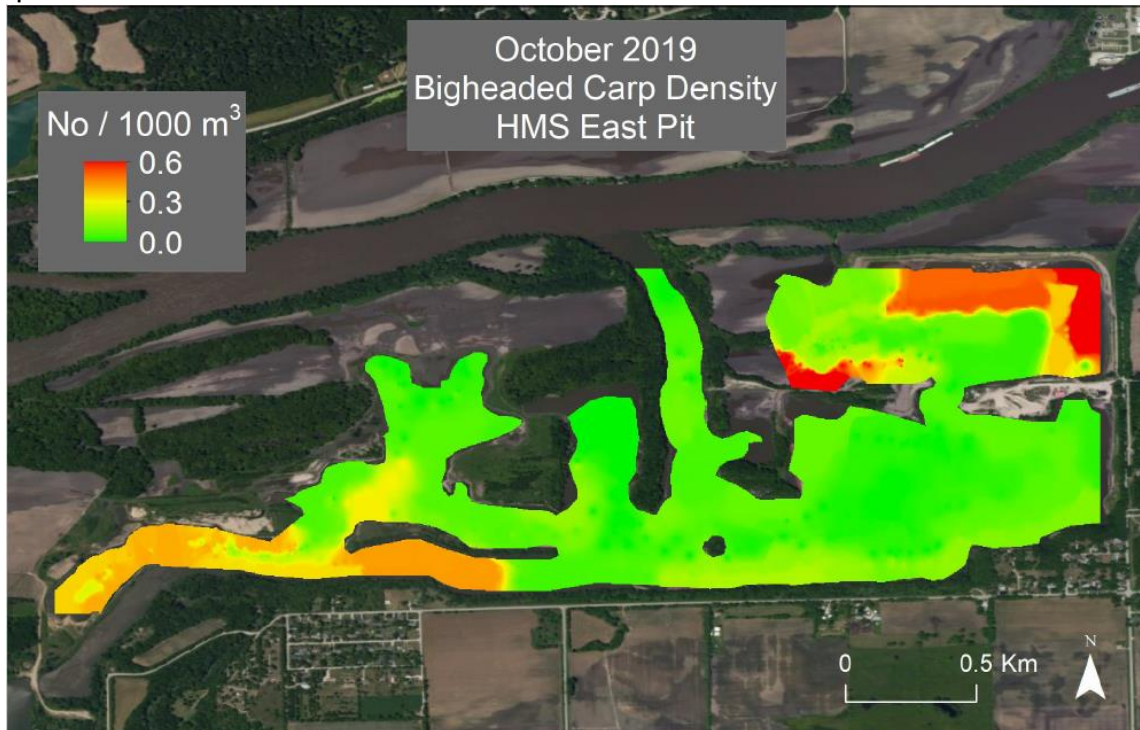


Figure 2. Bigheaded Carp (Bighead Carp and Silver Carp) density estimate within Hanson Material East Pit produced from hydroacoustic surveys during October 2019 provided as an example of how these data are visualized.

Telemetry fieldwork as part of the SIU-USACE collaboration evaluating the use of Common Carp as a surrogate species for Silver Carp also occurred from 10/14 – 10/16. Active tracking took place throughout Starved Rock Pool and downstream of Starved Rock Lock & Dam (SRLD) for later comparisons of Silver Carp and Common Carp habitat use. Stationary telemetry receivers around SRLD were also downloaded as part of this project.

Work was also completed on an experiment assessing the relative effects of acoustic telemetry methods on Silver Carp survival, wound healing, and growth. Fish were stocked into SIU experimental ponds in spring 2019 and received either: surgery with an acoustic transmitter and a jaw tag; surgery with an acoustic transmitter; only a jaw tag; or no surgery/tag. Additional ponds were stocked with Silver Carp that received either a jaw tag or dorsal loop tag to compare external marking methods on survival and growth. Throughout 2019, fish were removed from the study for assessing wound healing, growth, and survival through time. In October, the final fish were collected from ponds in order to assess endpoints after five months.

Telemetry
USACE

USACE biologists worked with IDNR biologists and commercial fishermen to collect and subsequently tag and release 21 Silver Carp and 2 Bighead Carp with ultrasonic transmitters in October. Surgery was completed on 2 and 10 October in the Dresden Island Pool where all fish were collected and released. No receiver downloads completed in the month of October.

USGS

One real-time receiver near the culvert in the Hanson gravel west pit near Morris, IL detected 1 Bighead Carp and 1 Silver Carp during the month of October 2019. The maximum number of fish detected on one day was one and the minimum was zero.

One real-time receiver place above Dresden Island Lock and Dam near Minooka, IL detected 4 Bighead Carp and 6 Silver Carp during the month of October 2019. The maximum number of fish detected on one day was three and the minimum was zero.

No Bighead Carp and 3 Silver carp were detected at the Utica, IL real-time receiver during the month of October 2019. The maximum number of fish detected on one day was two and the minimum was zero.

No fish were detected moving among the upper Illinois River pools with these receivers.

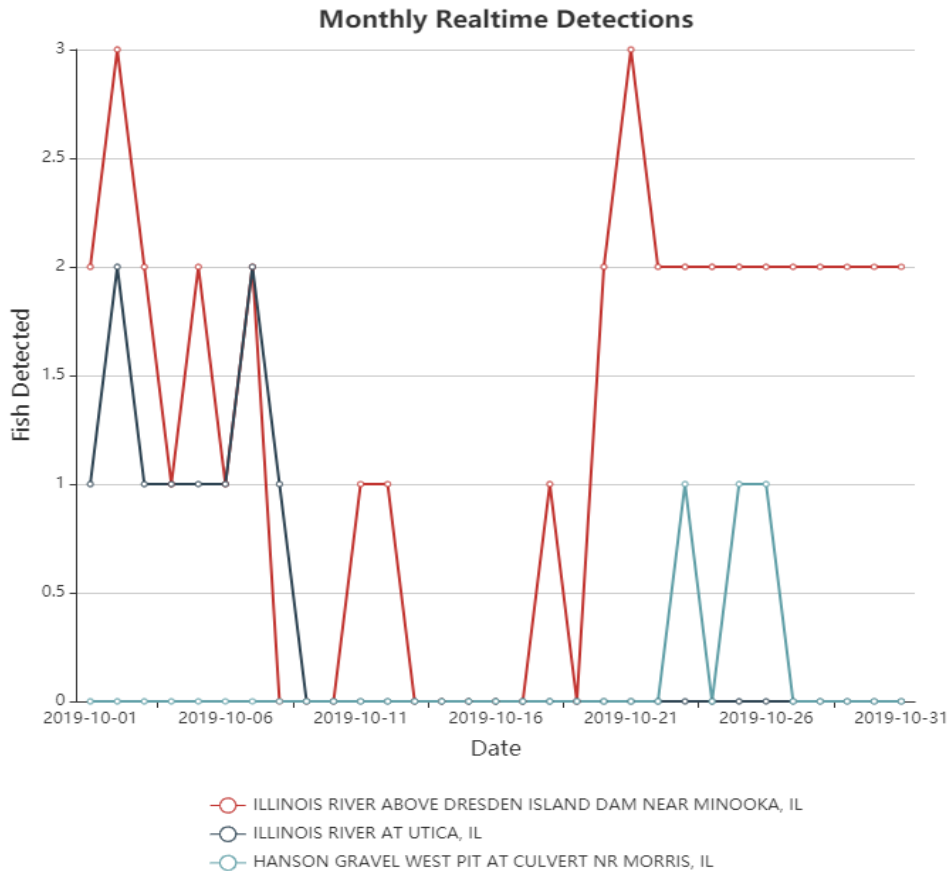


Figure 3. Fish detections for 1 October – 31 October 2019 from telemetry receivers in the Illinois River near Minooka, IL, Utica, IL, and in the Hanson Materials West Gravel Pit in Morris, IL.

DISCLAIMER

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 U.S. Geological Survey (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.

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

The U.S. Fish and Wildlife Service conducted three mobile hydroacoustic fish surveys at the Electric Dispersal Barrier System (EDBS) during November 2019. The surveys were completed on November 1, 2019, November 15, 2019, and November 26, 2019. Objective of these surveys was to monitor for the presence and distribution of large fishes greater than 12 inches (30.5 cm) total length in the vicinity of the EDBS. Hydroacoustic technology does not distinguish or identify fish species. However, the purpose of these hydroacoustic surveys is to aide in assessing the risk of fish detected in the vicinity of the EDBS, potentially 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:

Five large fish (≥ -28.7 dB; 30.5 cm) were detected above Romeo Road on November 1, 2019. Four fish were detected between Barrier IIA and Barrier IIB. One fish was detected between the Romeo Road Bridge and Barrier IIA. Thirteen large fish were detected below the EDBS. Fish were detected during all three replicate surveys.

Eight large fish (≥ -28.7 dB; 30.5 cm) were detected within the EDBS on November 15, 2019. Two fish were detected between Barrier IIA and Barrier IIB. Six fish were detected between Barrier IIB and the Demonstration Barrier. Eight large fish were detected below the EDBS. Fish were detected during all three replicate surveys.

No large fish (≥ -28.7 dB; 30.5 cm) were detected within the EDBS on November 26, 2019. Two large fish were detected below the EDBS. All fish targets were detected during Survey Replicate #3.

Barrier Operational and Maintenance Status

Status as of 31 Oct 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 were Open throughout the month

The Demonstration Barrier was shut down at 08:00 on 16 October 2019 and was powered back on by 14:00 on 17 October 2019. The shutdown was in support of design work and contractor inspections. Barrier IIA and Barrier IIB remained in operation for the duration of the Demonstration Barrier shutdown. This shutdown did not require a clearing action or decision by the MRWG per the 2019 MRP.

Barrier IIA and Barrier IIB wide and narrow arrays were operational throughout the month of October with no loss of power to the water greater than one minute in duration.

Strategy for eDNA Sampling in the CAWS

On October 8-10, USFWS collected 376 eDNA samples (414 including field blanks) above the electric dispersal barrier (see specific sample breakdown below). Sample results, including maps, for this event were posted online on [November 1](#) and showed a large number of samples positive for Bighead and/or Silver Carp DNA, particularly in Bubbly Creek (Figure 4). Samples taken in Bubbly Creek were collected approximately 48 hours after a Racine Avenue Pump Station (RAPS) event in that area. Due to the unusual number of positive samples from this October 8 event, mainly in Bubbly Creek, USFWS conducted repeat sampling of 156 samples (172 including field blanks) in Bubbly Creek and the surrounding barge slips on October 29-30. During this follow up sampling event, a RAPS event occurred while the crew was collecting samples in Bubbly Creek on 10/30. Sample results for this second event were posted on [November 22](#) and reflected a similar, large number of samples positive for Bighead and/or Silver Carp DNA, again mainly in Bubbly Creek (Figure 5).

IDNR coordinated an intense multiple agency two-week sampling response utilizing contracted gill netting and electrofishing gears in areas with unusual positivity in November. These results will be reported in the November summary. Inquiries and additional sampling or studies may be conducted in the future to determine a potential link between positive samples and RAPS events in Bubbly Creek.

Date - Target Area: number of samples (total including field blanks)

10/8 - CSSC: 28 (31)

10/8 - S.Branch Chicago River: 128 (128)

10/9 - Lake Calumet: 180 (198)

10/10 - Little Calumet River: 40 (44)

10/29 - CSSC/S. Branch Chicago River (barge slips): 93 (102)

10/30 - S. Branch Chicago River (Bubbly Creek): 63 (70)

Bighead and Silver Carp eDNA Early Detection Results:
 Chicago Area Waterway System
 Sampling Period Week: Week of October 7, 2019
 Number of Samples Collected: 414

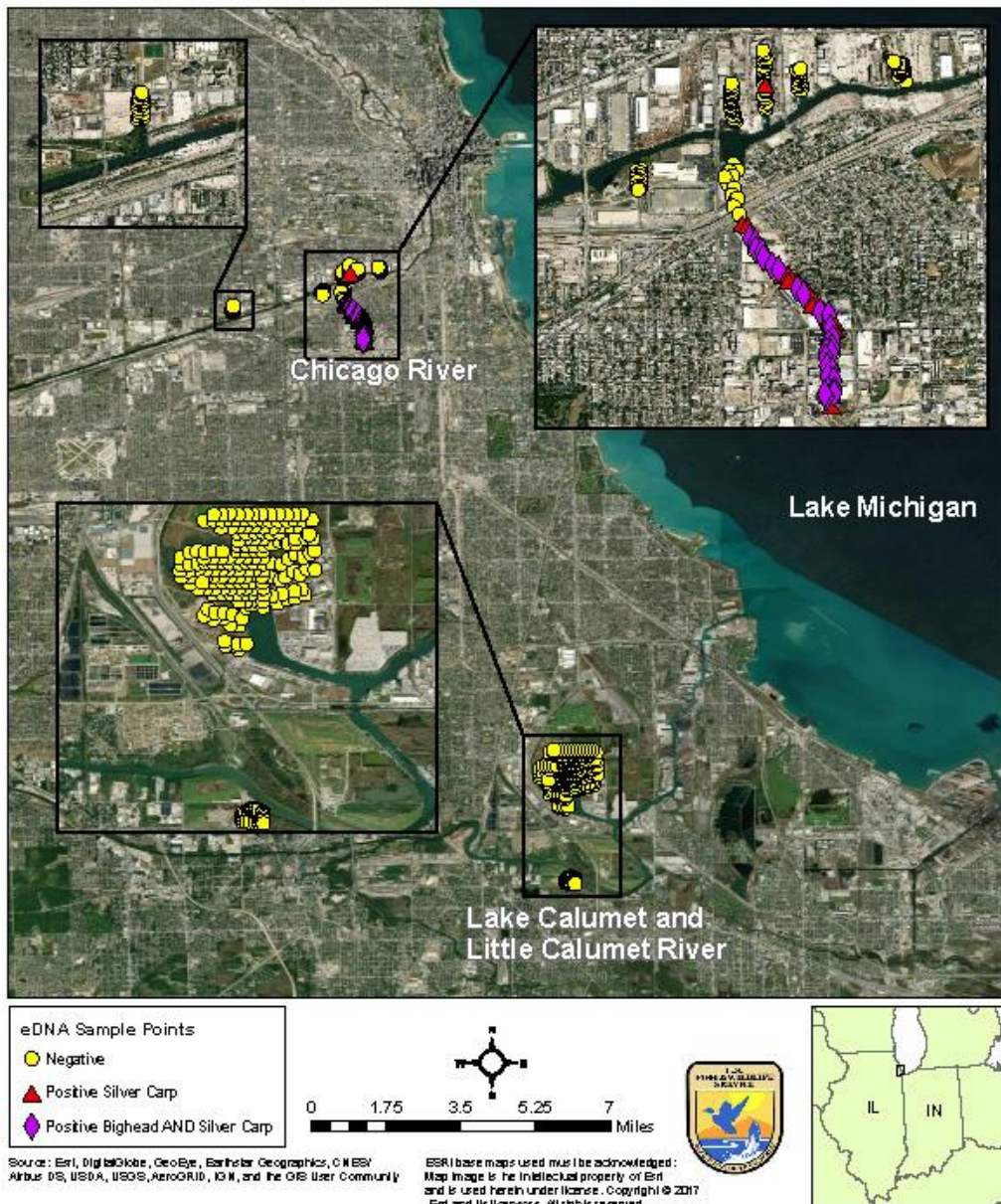


Figure 4. Water collection locations and results of the environmental DNA analyses of those water samples taken on October 8 – 10, 2019 in the Chicago Area Waterway.

Bighead and Silver Carp eDNA Early Detection Results:
 Chicago Area Waterway System
 Sampling Period: Week of October 28, 2019
 Number of Samples Collected: 172

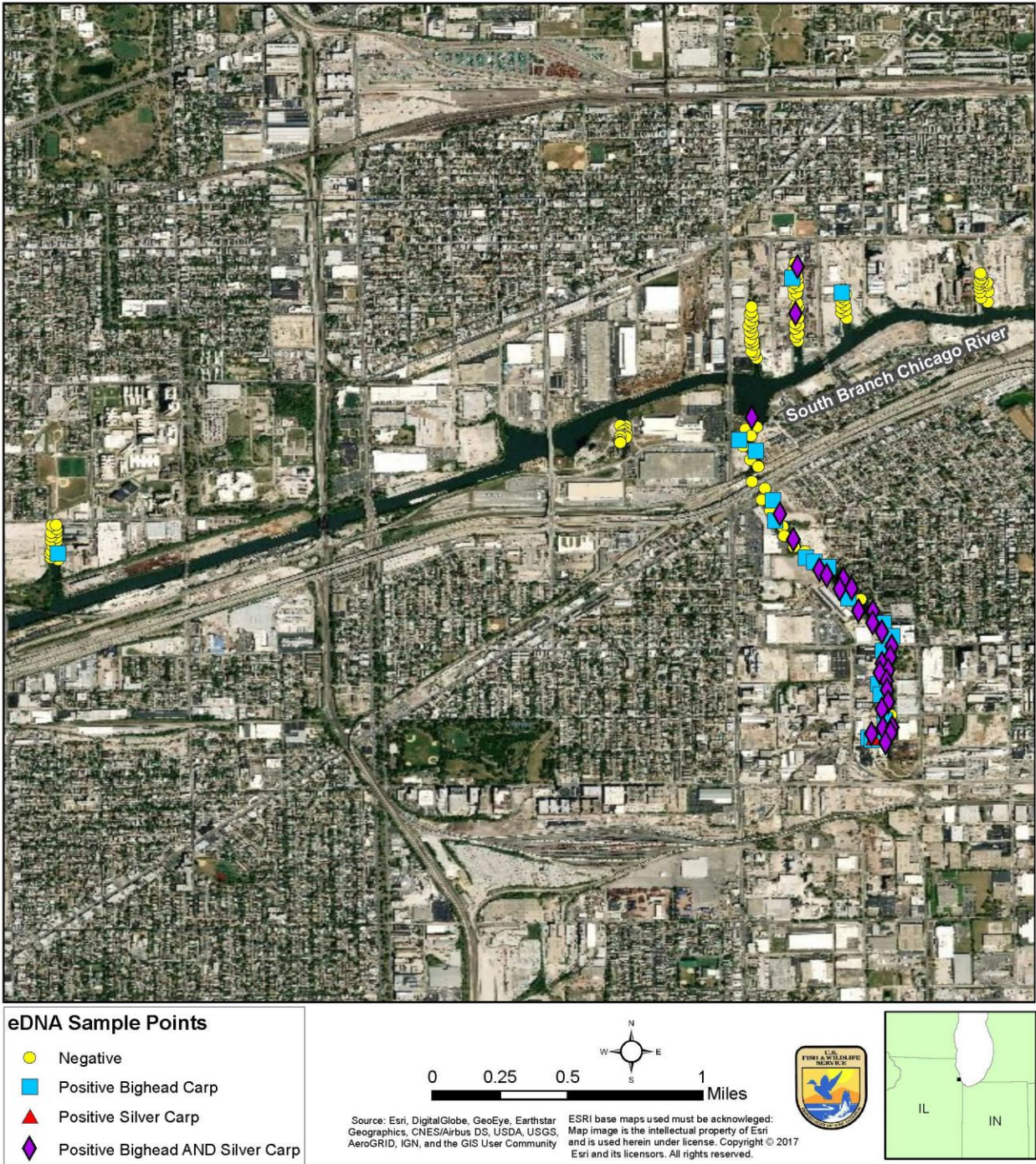


Figure 5. Water collection locations and results of the environmental DNA analyses of those water samples taken on October 29 – 30, 2019 in the Chicago Area Waterway.

Lake Michigan Monitoring (through annual sportfish assessment program)

- IDNR crews conducted electrofishing runs in North Point Marina, Waukegan South, Jackson Park and Diversey harbors (12.7 hours total).
- IDNR crews set and pulled gill nets targeting spawning lake trout at Waukegan and Lake Bluff- 10 Mile reefs for total of 4 net nights (533 yards of net).
- *No new Aquatic Invasive Species were captured during these sampling events. The following introduced species were detected: Gizzard Shad and Common Carp.*
- **No Asian Carp were captured or observed at any sites sampled in Lake Michigan during October.**

Alternate Pathway Surveillance in Illinois - Law Enforcement

Invasive Species Unit (ISU) is investigating a fish dealer from the Western part of the U.S. who illegally imported and sold live trout, channel catfish, tilapia, and rainbow trout to Illinois customers without the proper import permits or non-resident aquatic life dealer's license.

ISU assisted a District 1 CPO with a bait shop owner inquiry into the possibility of importing frozen "Lake Erie Salted Shiners" into Illinois to sell as bait. The bait was identified as Emerald Shiners, a VHS susceptible species, which would require testing prior to the importation. The bait shop owner decided the idea would not be cost effective to pursue.

ISU inspected an aquaculture facility in Winnetka, IL that applied for a permit and Letter of Authorization to raise tilapia. No deficiencies were observed during the inspection. ISU assisted a D4 CPO with the random inspection on a university raising tilapia under an aquaculture permit. No unauthorized species were located during the inspection.

ISU assisted the Jackson County Health Department with identifying an individual illegally selling aquatic life on Facebook without wholesale or retail aquatic life dealer's licenses and in violation of several local health code regulations. No live invasive species were being sold by the individual.

ISU investigated a complaint of an Illinois resident purchasing live Red swamp crayfish in Louisiana, driving them to Illinois, and then selling them out of his garage. ISU identified the subject as someone who was cited in March of 2019 for the same activities. It was determined the suspect was now only selling live blue crabs. The individual's Facebook page contained several comments of his dislike for the IDNR and Illinois regulations on live Red swamp crayfish.

ISU investigated a complaint of an individual running an unlicensed bait shop out of his house and selling live Asian carp as bait. ISU determined the complaint was unfounded and the species thought to be Asian carp were Goldfish. The bait shop was licensed. ISU had spoken with the owner months earlier to inform him of the bait shop regulations during a random inspection of his facility.

ISU provided the Quebec Wildlife Enforcement Office with information relevant to a case made by the ISU of two college students who performed a cultural/merit release in 2017 of largemouth bass and tilapia into a local lake. The information will assist with the training of Quebec officers on the matter.