

2019 June 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 and upstream of the Electric Dispersal Barrier during June 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 the month of June 2019, United States Army Corporation of Engineers (USACE) crews conducted 1.5 hours of boat mounted electrofishing in Lower Lockport Pool and Brandon Road Pool.
- A total of 480 fish were captured.
- **No Bighead Carp, Black Carp, Grass Carp or Silver Carp were caught Lower Lockport Pool or Brandon Road pool in June during fixed and random site electrofishing.**

Hoop netting:

- Due to changes in the monitoring response plan this effort will be reported during July following the end of the first sampling period (June 15 through July 31).

Mini fyke netting:

- Due to changes in the monitoring response plan this effort will be reported during July following the end of the first period of sampling (June 15 through July 31).

Commercial Netting:

- Contracted commercial fishers along with assisting Illinois Department of Natural Resources (IDNR) biologists set 40.1 miles of gill/trammel net at fixed and targeted sites in Lockport Pool, Brandon Road Pool, and Dresden Island Pool (including Rock Run Rookery) of the Illinois River in June 2019.
- 513 fish representing 11 species were captured cumulatively in the three pools during June 2019.
- Two Bighead Carp and 20 Silver Carp were captured in Dresden Island Pool below the I55 bridge during June 2019.
- No Bighead Carp and 3 Silver Carp were captured in Dresden Island Pool above I55 bridge during June 2019.
- Two Bighead Carp and 1 Silver Carp were captured in Rock Run Rookery during June 2019.
- **No Bighead Carp, Grass Carp, or Silver Carp were captured or observed in Lockport Pool or Brandon Road Pool during contracted commercial netting during June 2019.**

Sampling results below the electric dispersal barrier by pool through June 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	25,000	42,700	16,400
Miles of Net Fished	14.2	24.3	9.3
Hoop Net Nights	17.9	16.8	0.0
Mini Fyke Net Nights	10.2	9.0	0.0
Electrofishing Runs	56	91	30
Electrofishing Time (hrs)	14.0	22.8	7.5
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Road Pool

	2017	2018	2019
Yards of Net Fished	27,600	43,000	4,200
Miles of Net Fished	15.7	24.4	2.4
Hoop Net Nights	21.7	15.6	0.0
Mini Fyke Net Nights	11.9	6.9	0.0
Electrofishing Runs	59	72	30
Electrofishing Time (hrs)	14.8	18.0	7.5
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Dresden Island Pool (Including Rock Run Rookery)

	2017	2018	2019
Yards of Net Fished	43,350	105,200	50,000
Miles of Net Fished	24.6	59.8	28.4
Hoop Net Nights	311.7	15.3	0.0
Mini Fyke Net Nights	15.4	7.9	0.0
Pound net night	0	4	0
Electrofishing Runs	102	91	0
Electrofishing Time (hrs)	17.0	19.8	0.0
Bighead Carp	243	283	19
Grass Carp	4	37	2
Silver Carp	380	649	106
Total AC	627	969	127
Asian Carp (AC) from Rock Run Rookery Lake (RR)	161	107	17
AC upstream I-55 (not in RR)	14	5*	3
AC downstream I-55	452	857	107
Tons of AC Harvested	7.2	8.3	2.0
AC/1000 yds of gill net	14.1	9.2	2.5

* indicates that the AC captured upstream of I-55 included Grass Carp.

Seasonal Intensive Monitoring

Seasonal Intensive Monitoring (SIM) took place above the electric dispersal barrier the during weeks of June 3th and June 10th. Electrofishing and commercial netting 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).

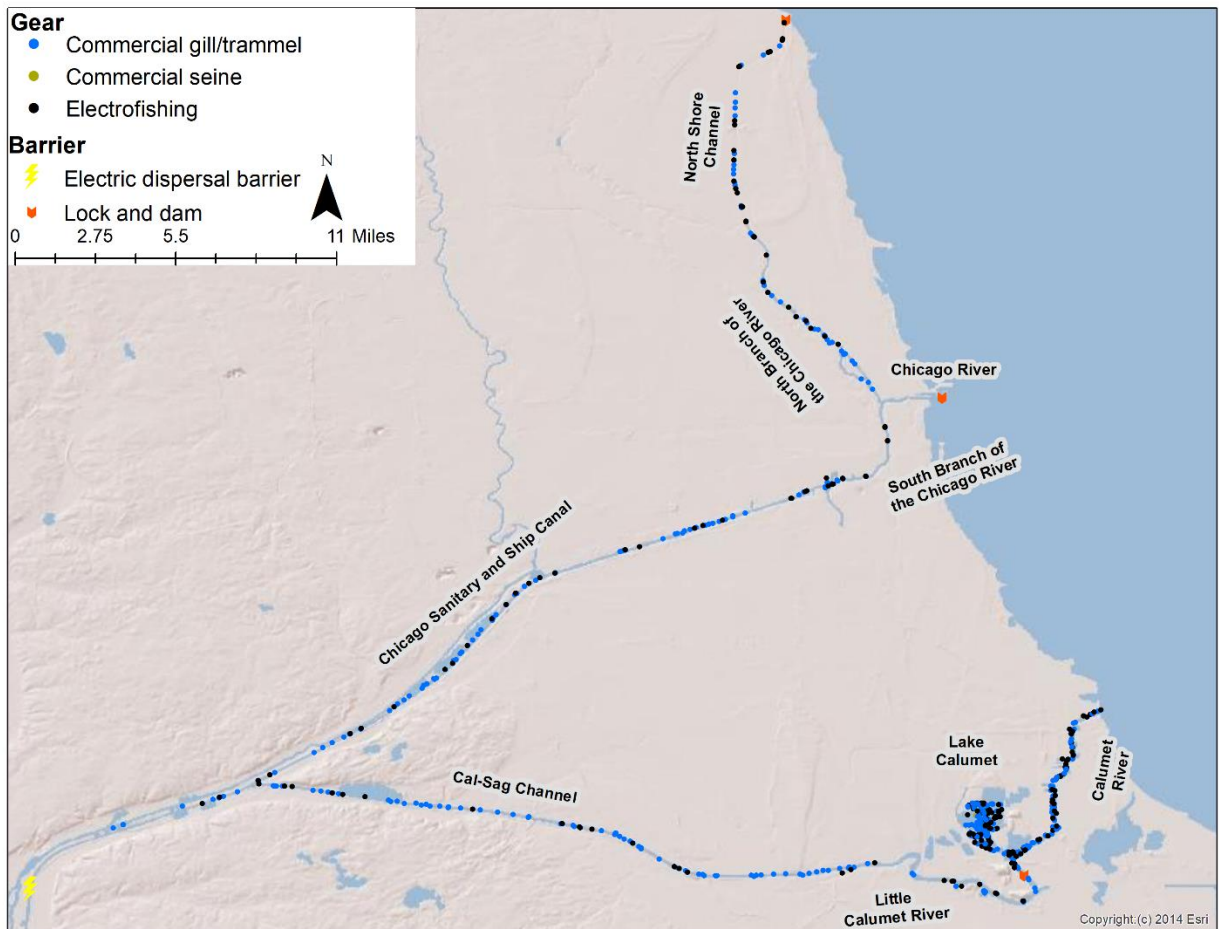


Figure 1. Spatial distribution of commercial gill/trammel net sets (blue dots), commercial seining samples (green dots), and electrofishing runs (black dots) within the Chicago Area Waterway during the 2019 spring Seasonal Intensive Monitoring event.

Electrofishing:

- Crews from IDNR, USACE, and the United States Fish and Wildlife Service (USFWS) completed 238 electrofishing runs at fixed and random sites (59.5 hours total).
- Crews collected 9,526 fish representing 42 species.

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 7,457 fish representing 14 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 1,156 fish representing 17 species and 1 hybrid group.
- Two Grass Carp were captured in Lake Calumet (41.68663, -87.58829 & 41.68700, -87.58231) during commercial netting.

Overall:

- **A total of 18,139 fish representing 49 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.**

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 June 2019, including 10 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	41	52
Number of Net Crew Days	131	160	255
Yards of Net Fished	204,980	155,600	278,165
Miles of Nets Fished	116.5	88.4	158.0
Number of Pound Net Nights	74	22	26
Number of Hoop Net Nights	879.8	1217.1	0.0
Number of Bighead Carp	1,490	1,610	1,028
Number of Silver Carp	70,134	57,744	117,303
Number of Grass Carp	592	562	2,305
Number of Asian Carp (AC)	72,216	59,916	120,636
Tons of AC Harvested	249.1	227.0	486.8
AC/1000 yds of gill net	283.7	352.4	432.2

Marseilles Pool

	2017	2018	2019
Yards of Net Fished	139,830	91,000	118,900
Miles of Nets Fished	79.4	51.7	67.6
Pound Net nights	74	22	26
Hoop Net nights	72.0	239.9	0.0
Mini Fyke Net Nights	15.5	7.9	0.0
Electrofishing Runs	48	72	0
Electrofishing Time (hrs)	12.0	18.0	0.0
Bighead Carp	800	917	386
Grass Carp	48	32	38
Silver Carp	22,856	23,999	27,750
Total Asian Carp	23,704	24,948	28,174
Tons of AC Harvested	102.7	120.5	159.6
AC/1000 yds of gill net	159.6	259.1	233.5

Starved Rock Pool

	2017	2018	2019
Yards of Net Fished	65,150	64,600	159,265
Miles of Nets Fished	37.0	36.7	90.5
Hoop Net nights	831.2	992.6	0.0
Bighead Carp	690	694	642
Grass Carp	553	538	2267
Silver Carp	47,444	33,810	89,553
Total Asian Carp	48,687	35,042	92,462
Tons of AC Harvested	150.2	109.3	327.2
AC/1000 yds of gill net	550.0	484.0	580.5

Monitoring Bigheaded Carp Movement and Density in the Illinois River

Acoustic Telemetry

Active tracking for the surrogate fish project [Southern Illinois University (SIU) & USACE collaboration] occurred June 11th and 12th in Starved Rock Pool. Of the 32 Common Carp at large in this pool, 15 were located. High water levels somewhat limited our tracking ability. Active tracking of surrogate fish in and around Starved Rock Pool will occur monthly, weather permitting. Additionally, downloads of stationary receivers will occur in July and August if water levels are sufficiently low.

During the week of June 17th, the first ponds were drained and fish necropsied in the studies evaluating 1) healing and the effects of acoustic tag implantation and 2) loop tag (Figure 2A) and jaw tag (Figure 2B) effects on growth, survival, and healing. Additionally, sutures on fish implanted with dummy acoustic transmitters had dissolved and dummy tag placement was evaluated (Figure 2C). Some bacteriological and histological samples were collected and were sent to USFWS La Crosse. Pond draining and necropsies for the 2 month time point will occur in mid-July.



Figure 2. Images of fish necropsied one month after receiving (A) a loop tag, (B) a jaw tag, or (C) surgical implantation of a dummy acoustic transmitter.

Hydroacoustic Sampling

Mobile hydroacoustic sampling was conducted in the Dresden Island and Marseilles Pools from June 21-25, 2019. Density heatmaps (Figure 3) were generated to update contracted harvest efforts on the spatial distributions of bigheaded carp and were submitted to IDNR.

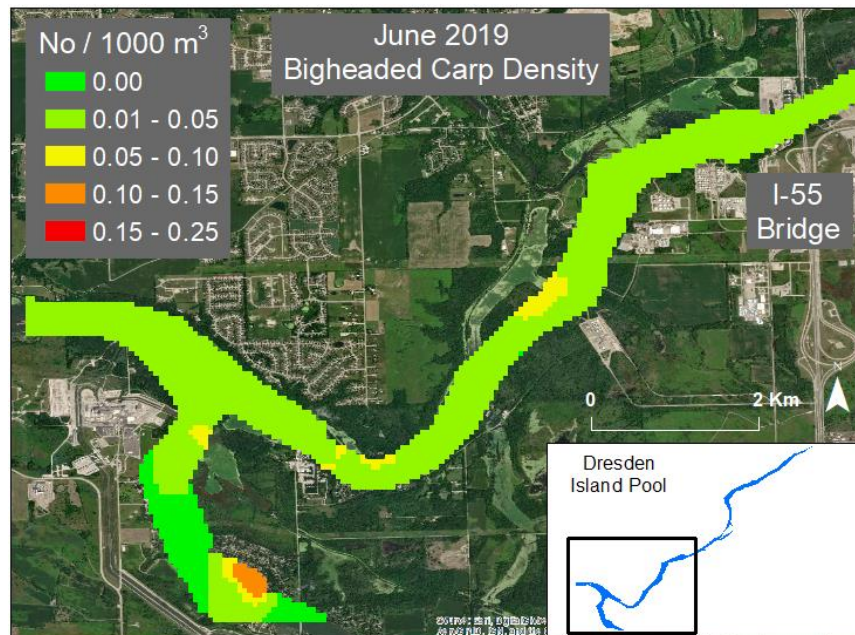


Figure 3. Example of bigheaded carp density heatmap in Dresden Island Pool from mobile hydroacoustic surveys conducted in late June 2019.

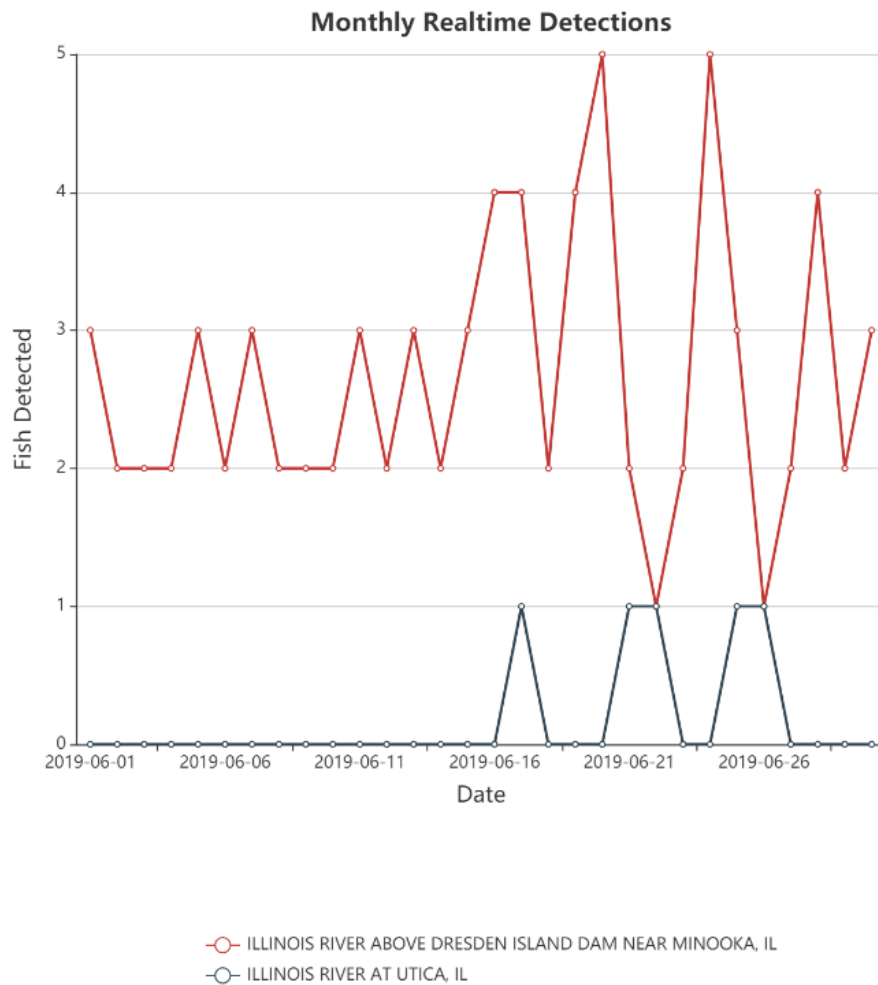


Figure 5. Fish detections for 1 June – 30 June 2019 at Utica, and Minooka receivers.

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).

Monitoring Bigheaded Carp Movement and Density in the Illinois River

During spring 2019, the USFWS – Columbia Fish and Wildlife Conservation Office implemented year two of a fisheries-independent, standardized sampling protocol to update parameter estimates and address data gaps associated with the Spatially Explicit Asian carp Population (SEAcARP) model. Data collections include Silver Carp length and sex structure, maturity status, and relative abundance during spring and fall in the Alton, La Grange, Peoria, Starved Rock, Marseilles, and Dresden Island (2019 only) pools of the Illinois River. Peoria and La Grange pools were sampled during the weeks of 10 June and 17 June respectively. Catch rates averaged about 1 fish per 5 minute trawl in both pools (Table 1). Although not fully recruited to the dozer trawl, a total of 29 Silver Carp measuring

less than 10 mm total length were captured in the La Grange Pool (Figure 6). In contrast, no Silver carp less than 380 mm total length were captured from Peoria Pool the previous week of sampling. Aside from young-of-year Silver Carp captured from La Grange Pool, Silver Carp length distributions in the two pools spanned a comparable size range (Figure 4). Due to on-going flooding, sampling was not conducted in the Alton Pool in spring 2019. Fall sampling will begin in September 2019.

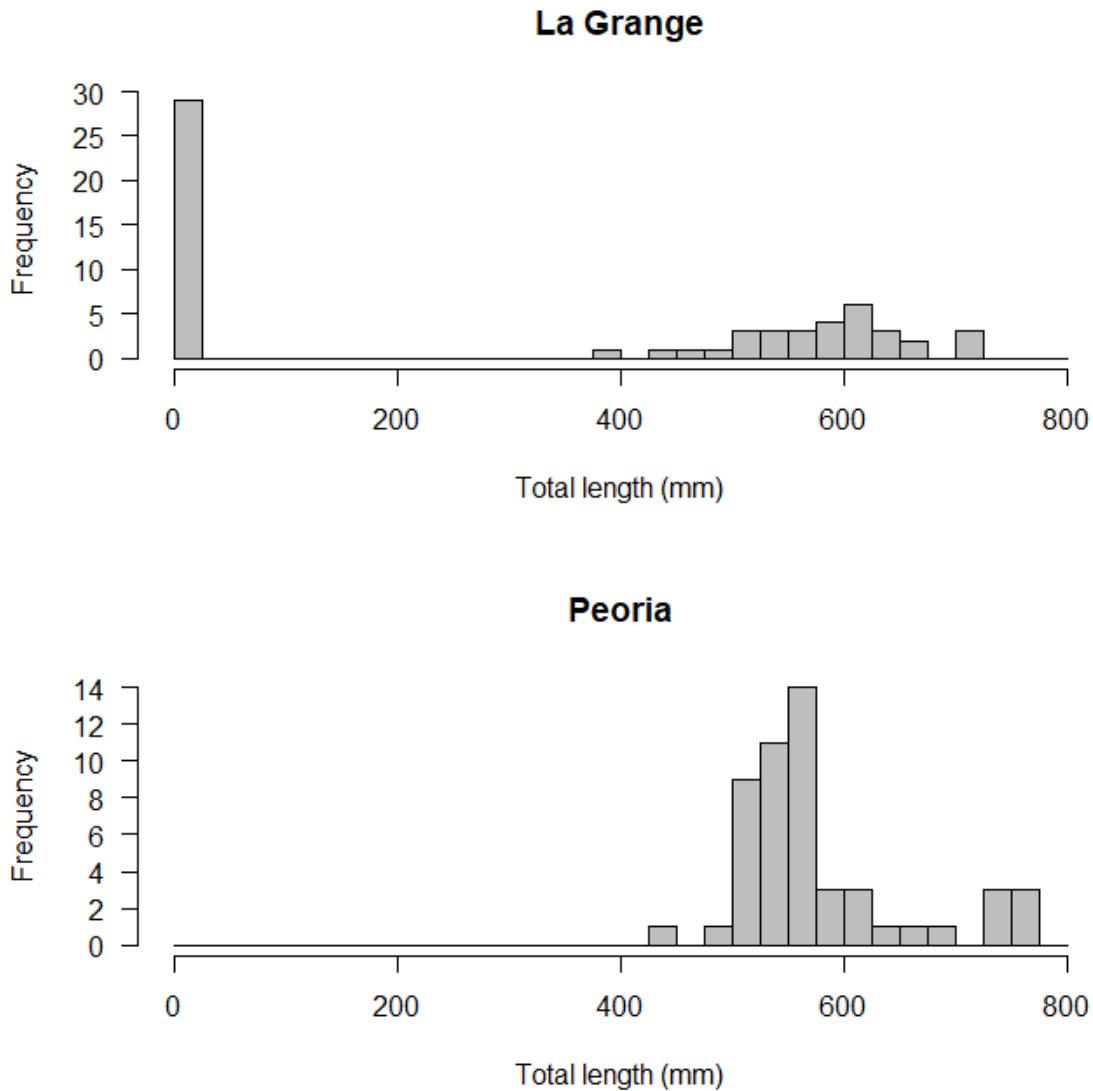


Figure 6. Length frequency distributions of Silver Carp captured from La Grange and Peoria pools of the Illinois River during the weeks of 10 and 17 June 2019 using electrified dozer trawl (N = 50-5 minute trawls per pool). Note that y-axes have different scales.

Table 1. Sampling effort and preliminary results, June 2019.

Pool	Total Silver Carp Captured	Sample Size (# of 5 min trawls)	Mean CPUE (Silver Carp /5 min trawl)	Standard Error	Silver Carp Size Range (mm)
La Grange	74	50	1.2	0.37	7-720
Peoria	51	50	1.0	0.23	430-760

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 June 3 and June 17. 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 every week of June. 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. Much of the Illinois River was above flood stage during the entire month of June, and water temperatures were consistently above the threshold thought to be conducive to Asian carp spawning. However, no Asian carp eggs have been identified thus far from samples collected during the month of June. Processing of samples and identification of larval fish and eggs is ongoing. Ichthyoplankton sampling will continue to occur biweekly from July to 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.

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

The USFWS conducted two mobile hydroacoustic fish surveys at the Electric Dispersal Barrier System (EDBS) during June 2019. The surveys were completed on June 24, 2019 and June 26, 2019 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. Surveys scheduled for earlier in the month were postponed due to barrier maintenance. The purpose of these hydroacoustic surveys is to aid in assessing the risk of fish detected in the vicinity of 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:

Five large fish targets were detected within the EDBS on June 24, 2019. One fish was detected upstream of Barrier IIA and downstream of Barrier IIB. One fish was detected within Barrier IIB. Three fish were detected between Barrier IIB and the Demonstration

Barrier. Additionally, four large fish targets were detected downstream of the EDBS. The US Army Corps of Engineers electrofished within the EDBS the following day (6/25/2019) and removed Common Carp from the area.

No large fish targets were detected within the EDBS on June 26, 2019. Eight large fish were detected below the EDBS.

Barrier Operational and Maintenance Status

Status as of 30 June 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 IIA experienced a minor loss of power to water at both arrays of less than one minute on 2 June 2019. The wide and narrow arrays were powered off on 5 June 2019 in support of annual maintenance, troubleshooting, and repair work and were returned to operation on 19 June 2019 by 17:00. Two minor losses of power to the water occurred on 30 June for less than one minute each at 14:18 and 14:38 due to utility power outages during a storm. Back-up emergency generator power initialized immediately for each event.

Barrier IIB wide and narrow arrays were active throughout the month of June with no interruption to power in the water. The narrow array was outputting approximately 2000 V which equates to a peak voltage gradient of 2.3 V/in at the surface of the water.

Demo Barrier lost power to the water at 10:20 on 15 June 2019 for just over 1.5 hours due to control system issues. The Demo lost power to the water on 26 June at 20:58 for less than one minute due to a power failure.

The Des Plaines Bypass Barrier is fully functional. The turtle gates were opened on 15 March 2019 for the season to allow for passage of amphibians and reptiles. No overtopping events occurred during the month of June and turtle gates remained open.

The Chicago District Army Corps maintained bi-weekly conference calls with the MRWG and stakeholders throughout the month of June to maintain situational awareness on barrier operations and outages. These calls provided the opportunity for assessment of the risk of Asian carp presence at the barriers and to take any clearing actions deemed necessary. The following message was provided to the ACRCC and LRC Command on 1 July 2019:

“An opportunity for fish advancement to Barrier IIB and subsequent entrainment above Barrier IIA was identified with the recent changes in operation at the Electric Dispersal Barriers System (EDBS) in support of required maintenance activities. The MRWG, as represented by the co-chairs and leads from USACE, IDNR, and USFWS, has prescribed numerous

assessments of fish presence and abundance within the Lower Lockport Pool and within the EDBS in response to this identified risk. The MRWG has reviewed this data in combination with ongoing detection activities in the vicinity. Based on the most current understanding, the MRWG believes there to be an extremely low risk for allowing Asian carp passage and recommends continuation of planned work at Barrier IIB and the Demonstration Barrier. The planned maintenance and repair work will ensure continued efficacy and redundancy of the EDBS. The MRWG appreciates the close coordination and timely communication of Barrier operational changes and requests that collaboration continue throughout the maintenance activity.”

Alternate Pathway Surveillance in Illinois - Law Enforcement

An out-of-state pond stocking company investigated and criminally charged by the Invasive Species Unit (ISU) pled guilty to unlawfully importing Viral Hemorrhagic Septicemia (VHS) susceptible species without a permit, which is a Class A Misdemeanor. The court ordered restitution to the Department in the amount of \$11,494.00. Records showed the company imported, sold, and stocked live gizzard shad, fathead minnows, bluegill, red ear sunfish, and largemouth bass in Illinois. These fish were sold without a non-resident aquatic life dealer’s license and some of the fish were imported without a VHS import permit. Further investigation revealed the gizzard shad came from an Arkansas farm and did not have any health records certifying them as VHS free as required by IDNR.

ISU inspected wholesale and retail fish markets in the Chicagoland area as part of Operation Fishbook. The operation focused on obtaining business records, conducting interviews, and taking enforcement action on aquatic life dealer’s operating illegally. A total of 19 businesses were inspected resulting in 13 citations and 13 written warnings issued.

ISU seized over 100 pounds of live red swamp crayfish from an Asian market in the Chicagoland area that were illegally imported into the State. Red swamp crayfish are not on the approved species list and therefore, illegal to ship, transport, or possess without special authorization from the Department. The manager of the store said customers purchased the crayfish for food, but many customers were purchasing them to use as bait for fishing. The owner of a Chicago based company was cited for operating as a wholesale aquatic life dealer without the required license. Business records indicated the company purchased over 450 pounds of Asian carp heads from an Illinois Asian carp processing plant and sold/shipped them to China. ISU assisted the owner with purchasing the required license and answered questions regarding Illinois laws.

ISU drafted an outreach letter as part of an initiative proposed by the Great Lakes Law Enforcement committee to notify distributors throughout the United States of live red swamp crayfish regulations for all the jurisdictions within Great Lakes.

ISU reviewed a series of Commercial Fish Removal Special Use Permits and assisted the Division of Fisheries and Office of Law Enforcement with deciphering administrative rules regulating the live transportation of VHS susceptible species into Illinois from out-of-state commercial fishermen and non-resident aquatic life dealers.

ISU assisted an out-of-state law enforcement agency with surveillance of a suspect believed to be illegally transporting live injurious species from Illinois into the other agency's jurisdiction.

ISU participated in a Great Lakes Fishery Commission funded interview that studies manager priorities and outreach strategies related to invasive species.

ISU attended the Wildlife Fraud Investigators Training Conference in Scottsdale, AZ.