

2017 October Summary

Bottom Line: Monitoring occurred in the CAWS and upper Illinois Waterway upstream and downstream of the Electric Dispersal Barrier in September. **NO LIVE BIGHEAD CARP OR SILVER CARP were found in any new locations immediately upstream or downstream of the Electric Dispersal Barrier.**

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

Electrofishing:

- Crews from USACE and IDNR completed 36 electrofishing runs at fixed and random sites (9 hours total) in the Lockport, Brandon Road and Marseilles Pools in October.
- Crews collected 3,027 fish of 42 species.
- One adult Silver Carp was collected in the Marseilles Pool.
- **No Bighead Carp or Silver Carp were reported captured or observed in the Lockport or Brandon Road Pools.**

Hoop and Mini Fyke Netting:

- Crews from IDNR set and pulled 16 hoop nets and 16 mini fykes from fixed sites in Lockport, Brandon Road, Dresden Island and Marseilles Pools in October.
- Crews collected 39 fish of 7 species during hoop net sampling and 1,977 fish of 31 species during mini fyke sampling.
- **No Bighead Carp or Silver Carp were reported captured or observed with either gear in any of the pools.**

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 19.8 miles of gill net at fixed and targeted sites in the Lockport, Brandon Road and Dresden Island Pools (including Rock Run Rookery) in October.
- Crews collected 313 fish of 11 species.
- Two Bighead Carp and 5 Silver Carp were collected in Rock Run Rookery.
- Two Bighead Carp and 3 Silver Carp were collected in the Dresden Island Pool, downstream of I-55.

No Bighead Carp or Silver Carp were captured or observed in the Lockport or Brandon Road Pools

Unified Fishing Method (UFM) – Dresden Island Pool

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 20.3 miles of gill net during the UFM in the Dresden Island Pool (including Rock Run Rookery) the week of October 16th.
- Crews collected 3,544 fish of 18 species and 1 hybrid group.
- One Silver Carp was collected upstream of I-55 (~0.3 miles downstream of the casino).
- Nine Bighead Carp and 9 Silver Carp were collected in Rock Run Rookery.
- Five Bighead Carp and 35 Silver Carp were collected downstream of I-55.

Pound Net:

- Contracted commercial fishers along with an assisting IDNR biologist fished the pound net in the chute that connects Rock Run Rookery and the Dresden Island Pool (with the throat of the net facing towards the main channel).
- The crew collected 757 fish of 16 species.
- Two Bighead Carp and 2 Silver Carp were also collected.

Electrofishing:

- Crews from IDNR used boat electrofishing to drive fish during the UFM.
- Eighty-eight Common Carp and 1 Grass Carp were collected.

Paupier Boat:

- The electrified paupier did a total of 3.7 hours (221 minutes) of sampling and caught 41 fish. Species captured included Gizzard Shad, Smallmouth Buffalo, Threadfin Shad, Silver Redhorse, and Emerald Shiner.
- On Monday, October 16, discharge was high and the paupier was used to "herd" fish with electricity for nearly 3 hours (177 minutes).

A total of 4,431 fish of 28 species and 1 hybrid group were collected during the UFM, including 16 Bighead Carp, 47 Silver Carp and 16 Grass Carp

Unified Fishing Method (UFM) – Dresden Island Pool



Sampling results by pool below the electric dispersal barrier through October 2017, along with same time period in 2015 and 2016 for comparison:

Lockport			
	2015	2016	2017
Yards of Net Fished	77,550	89,175	75,600
Miles of Net Fished	44.1	50.7	43.0
Hoop Net Nights	58.7	53.2	46.6
Mini Fyke Net Nights	28.5	26.0	25.2
Electrofishing Runs	114	103	118
Electrofishing Time (hrs)	28.5	25.8	29.5
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Rd			
	2015	2016	2017
Yards of Net Fished	78,800	81,825	88,400
Miles of Net Fished	44.8	46.5	50.2
Hoop Net Nights	58.2	53.5	50.3
Mini Fyke Net Nights	27.6	26.1	26.2
Electrofishing Runs	96	103	117
Electrofishing Time (hrs)	24.0	25.8	29.3
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Dresden Island			
	2015	2016	2017
Yards of Net Fished	88,550	78,025	119,800
Miles of Net Fished	50.3	44.3	68.1
Hoop Net Nights	110.8	53.7	343.3
Mini Fyke Net Nights	30.6	27.8	30.9
Electrofishing Runs	132	200	166
Electrofishing Time (hrs)	33.0	50.0	41.5
Asian Carp (AC) upstream I-55	33	13	28
AC downstream I-55	147	287	551
Total AC	180	300	579
Tons of AC Harvested	1.3	2.0	5.8

Rock Run Rookery			
	2015	2016	2017
Yards of Net Fished	35,150	47,525	36,800
Miles of Net Fished	20.0	27.0	20.9
Bighead Carp	189	131	176
Silver Carp	41	34	49
Total Asian Carp (AC)	230	165	225
Tons of AC Harvested	3.7	2.6	3.6

Barrier Defense Asian Carp Removal Project

Barrier Defense specifically takes place in the Marseilles and Starved Rock Pools. Below is a summary of all IDNR Barrier Defense activities through October 2017, which includes the Unified Fishing Method in HMS W Pit, along with same time period in 2015 and 2016 for comparison:

	2015	2016	2017
Number of Days Fished	52	86	70
Number of Net Crew Days	244	416	384
Yards of Net Fished	310,370	471,535	400,985
Miles of Nets Fished	176.3	267.9	227.8
Number of Pound Net nights	24	67	74
Number of Hoop Net nights	163.8	768.7	871.8
Number of Bighead Carp	7,476	7,626	2,530
Number of Silver Carp	109,072	118,561	120,814
Number of Grass Carp	591	579	860
Number of Asian Carp (AC)	117,139	126,766	124,204
AC/1000 yds of gill net	359.5	256.6	275.4
Tons of Bighead and Silver Carp Harvested	390.9	441.7	425.0

Marseilles			
	2015	2016	2017
Yards of Net Fished	189,190	330,005	237,235
Miles of Nets Fished	107.5	187.5	134.8
Pound Net nights	24	67	74
Hoop Net nights	83.4	136.5	96.1
Mini Fyke Net Nights	31.4	25.5	29.9
Electrofishing Runs	132	132	122
Electrofishing Time (hrs)	33.0	33.0	30.5
Bighead Carp	5,051	5,669	1,432
Silver Carp	51,078	53,475	37,137
Grass Carp	80	94	68
Total Asian Carp	56,209	59,238	38,637
Tons of Bighead and Silver Carp Harvested	212.6	256.4	170.8

Starved Rock			
	2015	2016	2017
Yards of Net Fished	121,180	141,530	163,750
Miles of Nets Fished	68.9	80.4	93.0
Hoop Net nights	141.2	683.1	823.2
Bighead Carp	2,514	1,977	1,116
Silver Carp	58,286	66,054	84,250
Grass Carp	523	516	811
Total Asian Carp	61,323	68,547	86,177
Tons of Bighead and Silver Carp Harvested	179.9	189.3	256.9

Understanding Surrogate Fish Movement with Barriers

Fish Tagged:

Brandon Road Pool

- Common Carp – 3
- Total – 3 fish tagged

Recaptures:

Dresden Island Pool/Rock Run Rookery

- Smallmouth Buffalo – 15
 - **No recaptured fish demonstrated movement between pools**

Telemetry Monitoring

USACE biologists completed downloads at 13 receivers within the Dresden Island Pool on 13 October in support of the Unified Fishing effort for the following week. Maps were generated indicating the location of the receivers displaying the number of detections and unique transmitters for each location for the first two weeks of October. These maps were provided to ILDNR for distribution and use during the unified effort to maximize harvest. The findings can be summarized as follows:

- The lower pool held the greatest number of detections and unique tag IDs, specifically at Dresden Island Lock and Harborside Marina.
- The Rock Run Rookery connecting channel had longer duration detection strings compared to the main channel receivers; indicating more staging within the backwater and greater activity in the main channel.
- No Bighead or Silver Carp detections upstream of Rock Run Rookery in the Des Plaines River or upstream of the Des Plaines Fish and Wildlife state boat launch on the Kankakee River.

October 2017 USGS Real-time receiver report

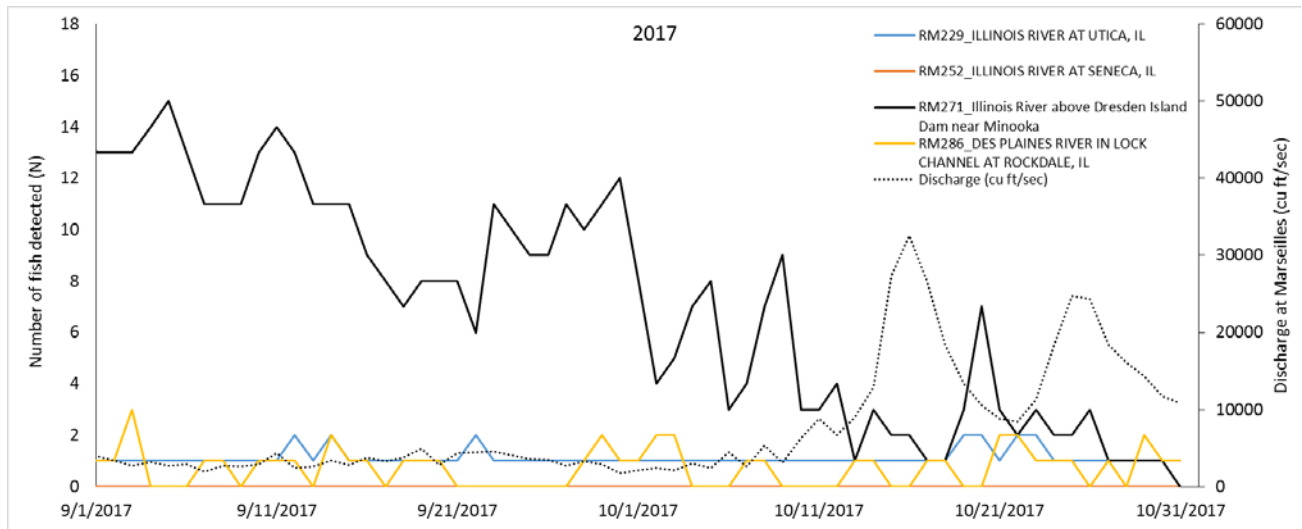


Figure 1. Graph showing the individual fish detections on real-time receivers located at IL river miles 229, 252, 271, and 286 for October 2017 with the associated average daily discharge for Marseilles IL (USGS site: 05543500).

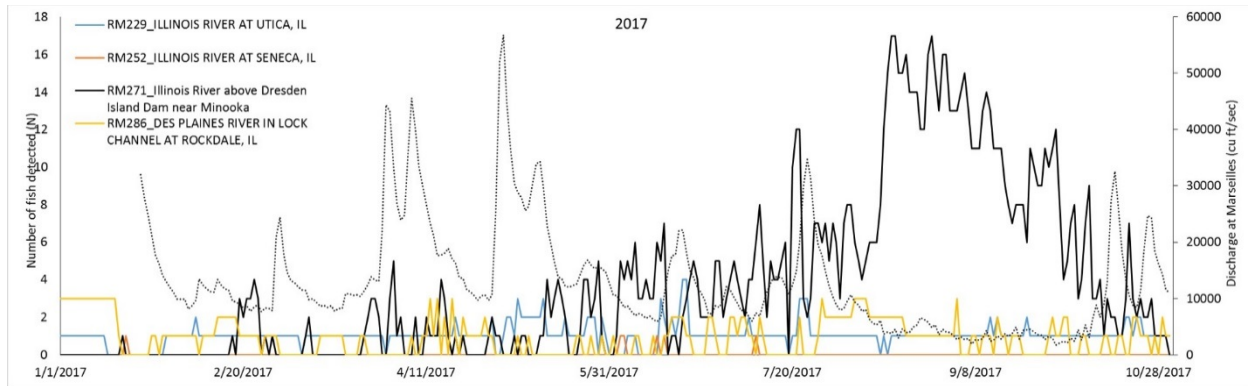


Figure 2 (also attached). Graph showing all available data for fish detections on real-time receivers located at IL river miles 229, 252, 271, and 286 for 2017, with the associated average daily discharge for Marseilles IL (USGS site: 05543500).

During the month of October, twenty-three (23) live fish were detected three of the four receivers. No live fish were detected at the Seneca station. Four grass carp were detected at the receiver in the Dresden Island Lock approach (RM286), and 18 fish (15 bighead carp, 1 silver carp, 1 hybrid carp, and 1 grass carp) were detected at the Minooka receiver (RM271). No fish were detected moving among pools (upstream or downstream) during the month of October. Once additional receiver was recently installed above Brandon Road Lock approach. This receiver will be included in upcoming reports. More detailed detection data can be found at <https://my-beta.usgs.gov/fishtracks/index> or by contacting Marybeth Brey at USGS UMESC.

Contact: Marybeth Brey, mbrey@usgs.gov, (608)781-6243.

Barrier Maintenance & Fish Suppression

USACE continued operation of the Electric Dispersal Barriers throughout October with minimal loss of power to the water at one or more barriers. During this time, there were three events which lead to a minor loss of power to water at Barrier IIB as power was transferred between utility and generator. The process of switching resulted in 5 minor power outages (<30 sec each) at the Barrier IIB arrays. The final event occurred on 30 October and Barrier IIB was powered by generator through 6 November 2017. Barrier IIA remained operational during the Barrier IIB switches. There was one event requiring generator power at Barrier IIA and the Demo barriers on 30 October 2017. The generators for each barrier activated immediately and carried power until the utility power was restored. This transfer of power between utility and generators resulted in 2 minor power outages in the water (<30 sec each) for the Demo Barrier. Barrier IIA maintained power to the water continuously through the UPS. Barrier IIB was active during these minor power transfer events.

The wide and narrow arrays of Barrier IIA, wide and narrow arrays of Barrier IIB and the demonstration barrier are currently operational. Current operating parameters for all barriers are provided below:

Barrier IIA wide: 800 V (.75 V/in); 34 Hz, 2.3 ms
 Barrier IIA narrow: 2000 V (2 V/in); 34 Hz, 2.3 ms
 Barrier IIB wide: 800 V (.75 V/in); 34 Hz, 2.3 ms
 Barrier IIB narrow: 2200 V (2.3 V/in); 34 Hz, 2.3 ms
 Demo Barrier: 400 V (.5 V/in); 5 Hz; 4 ms

Gear Evaluation for Mass Removal and Monitoring of Juvenile Asian Carp

Table 1. Silver Carp (SVCP) captured by the USFWS - Columbia Fish and Wildlife Conservation Office in October 2017 during the gear evaluation study using three gears (PA – electrified paupier, DT – electrified dozer trawl, EF – standard electrofishing). Study sites are in the LaGrange (Quiver Lake) and Marseilles (Hansen Material Services East, Hansen Material Services West) pools of the Illinois River, IL. No Silver Carp less than 200 mm were captured.

Site	Gear	N	Time (min)	SVCP	SVCP/5 min	SVCP < 200mm	SVCP range (mm)
Quiver Lake	PA	7	35.00	124	3.54	0	214-758
	DT	8	40.33	52	1.29	0	422-650
	EF	8	40.17	22	0.55	0	467-750
Hansen Materials East	PA	8	40.00	8	0.20	0	547-869
	DT	8	40.00	8	0.20	0	584-715
	EF	8	40.00	5	0.13	0	618-718
Hansen Materials West	PA	8	40.00	7	0.18	0	579-733
	DT	8	40.12	13	0.32	0	625-862
	EF	8	40.00	3	0.08	0	674-845

Distribution and monitoring of juvenile Asian carp

Field crews sampled the Marseilles pool for juvenile Asian carp (TL <160mm) during October 2017. Electrofishing was used from 10/23 to 10/26 at a total of 18 sites (3 hrs fishing time) and resulted in a total of 649 fish captured representing 29 species. Five adult Silver Carp were caught with electrofishing. Efforts for the remainder of the year will include one more week sampling in the Starved Rock pool.

Habitat usage and movement of juvenile Asian carp (telemetry)

Telemetry of juvenile Asian carp continued in the Peoria reach through October 2017. A total of 71 juvenile Asian carp have been implanted with transmitters. During this month, 14 new juvenile Asian carp were tagged using both radio and acoustic transmitters in each fish. Additionally, eight radio telemetry monitoring stations were set up in the Peoria reach from Hennepin, IL to the Peoria Lock and Dam. Efforts for the remainder of the year will include setting up two more radio monitoring stations, tagging more fish, and analyzing the data collected to present. Telemetry equipment will remain deployed over winter.

Hydroacoustic Fish Density Survey at the Romeoville, IL Electric Fish Dispersal Barrier System

Preliminary Results 10-25-2017 Barrier Scan: Density of large (>6") fish near the EDBS was very low (7 large fish tracks detected (199-478 mm)). Small (< 6") fish density near the EDBS was moderate during this week's survey. Water temperature was 15.5°C.

Larval Fish Monitoring

INHS conducted ichthyoplankton sampling 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 October 2 and October 16. Four larval fish samples were collected at each site, and zooplankton and water chemistry samples were also collected. Additional samples were collected in Illinois River tributaries to evaluate the potential for Asian carp spawning in these rivers. Sample processing has been completed for all samples collected through July, with preliminary data indicating at least 2 large Asian carp spawning events took place in late June and late July, but with no Asian carp eggs or larvae observed at any site upstream of Ottawa thus far during 2017. Processing of additional samples and identification of larval fish and eggs is ongoing. Results, particularly regarding occurrences of Asian carp eggs or larvae, will be reported once available.

Alternate Pathway Surveillance in Illinois - Law Enforcement

The Invasive Species Unit (ISU) provided support and security for the Aquatic Pet Surrender event held at the Evanston Ecology Center where residents were encouraged to bring any unwanted aquatic pets and turn them in instead of releasing them into the wild.

ISU conducted a fish truck inspection on an out of state fish dealer delivering live fish to Chinatown in Chicago. The inspection discovered an expired restricted species transportation permit, but no other violations. Appropriate enforcement action was taken.

The ISU responded to an anonymous complaint of an art gallery in McHenry County selling illegal wildlife. An inspection of the location discovered illegal wild bird parts and turtle parts being sold as jewelry. The bird and turtle parts were voluntarily turned over to the Department and proper enforcement action was taken.

ISU found two stores in Chicago illegally selling American Eels, which are on the Illinois Threatened List. Further investigation revealed the American Eels were being imported from New York and Massachusetts by companies that didn't have non-resident aquatic life dealer's licenses.

A Kentucky fish dealer entered a negotiated guilty plea in Massac County to the charge of importing untested VHS susceptible species into Illinois without the proper permits or a non-resident aquatic life dealer's license. A total of \$5000 in restitution was awarded to the Department.

ISU investigated a complaint of a wholesale pet dealer in Kane County selling diploid grass carp. A site visit to the facility confirmed the company was selling the fish, but only for the aquarium industry which is an exempted activity of IDNR restricted species regulations. The 3-4-inch grass carp are imported into Illinois from Israel.

Assessing Spatiotemporal Changes in Asian Carp Abundance and Density to Target Management Actions and Control Strategies

Mobile hydroacoustic surveys were conducted in the Illinois River from Dresden Island to Alton pools. These surveys were conducted at standardized sites to assess long-term (2012 – Present) abundance and biomass trends in each pool. Two surveys (pre- and post-harvest) were conducted in the Dresden Island Pool to assess changes in bigheaded carp densities and spatial distributions following Unified Method harvest. Data from these surveys are currently being processed.

USGS/USFWS Herding Study – October 11-20

Trammel Netting

- In the West pit, 3200 yards of trammel net was set the week of October 11, and 3200 yards of trammel net the week of October 16. In the East Pit, 3200 yards of trammel net was set the week of October 16.
- The week of October 11, 377 individuals were collected from the West Pit, representing 6 species. 257 of the fish collected were silver carp, and 17 were bighead carp.
- The week of October 16, 105 individuals were collected from the West Pit, representing 8 species. 58 of the fish collected were silver carp, and 1 was a bighead carp.
- The week of October 16, 67 individuals were collected from the East Pit, representing 7 species. 41 of the fish collected were silver carp, and 5 were bighead carp.

A total of 549 fish of 8 species were collected from the pits during the two-week study, including 356 silver carp, and 23 bighead carp.