

2016 November Summary

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

Fixed and Targeted Site Sampling Downstream of the Electric Dispersal Barrier

Electrofishing:

- Crews from IDNR, USACE and USFWS completed 74 electrofishing runs at fixed and random sites (18.5 hours total) in the Lockport, Brandon Road, Dresden Island, and Marseilles Pools in November.
- Crews collected 4,911 fish of 52 species.
- **No Bighead Carp or Silver Carp were reported captured or observed in the Lockport, Brandon Road or Dresden Island Pools.**
- Five adult Silver Carp were collected in the Marseilles Pool.

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 21.1 miles of net (168 sets) at fixed and targeted sites in the Lockport, Brandon Road and Dresden Island Pools (including Rock Run Rookery) in November.
- Crews collected 687 fish of 17 species and 2 hybrid groups.
- **No Bighead Carp or Silver Carp were captured or observed in the Lockport or Brandon Road Pools.**
- Thirteen Bighead Card and six Silver Carp (all adults) were collected in Rock Run Rookery.
- Five Bighead Card and six Silver Carp (all adults) were collected in the Dresden Island Pool downstream of the I-55 Bridge.

Hoop and Mini Fyke Netting:

- Crews from IDNR set and pulled 16 hoop nets (6' diameter) and 16 mini fykes in Lockport, Brandon Road, Dresden Island and Marseilles Pools in November.
- Crews collected 11 fish of 5 species during hoop net sampling and 446 fish of 14 species during mini fyke sampling (two of which were State threatened Banded Killifish).
- **No Bighead Carp or Silver Carp were reported captured or observed in any of the pools.**

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 December 2016, along with 2015 for comparison:

QUICK SUMMARY:	2015	2016
Number of Days Fished	69	101
Number of Net Crew Days	310	488
Yards of Net Fished	390,270	531,965
Miles of Nets Fished	221.74	302.25
Number of Pound Net nights	24	64
Number of Hoop Net nights	163.7	768.7
Number of Bighead Carp	8,206	7,972
Number of Silver Carp	137,485	145,873
Number of Grass Carp	857	681
Number of Asian Carp	146,548	154,526
Tons of Bighead and Silver Carp Harvested	486.3	539.8

Barrier Defense Asian Carp Removal Project – USFWS

A three-person crew with one electrified paupier boat from the US Fish and Wildlife Service, Columbia Fish and Wildlife Conservation Office, participated in barrier defense efforts November 15-17, 2016, in the Starved Rock Pool of the Illinois River (Table 1). The majority of fish were caught in the first two days when efforts were exclusively in the Fox River, a tributary of the Illinois River in Ottawa, IL. In those two days, 30 minutes of electrified paupier resulted in a total of 1,518 adult Silver Carp ranging from 535mm to 850 mm. Catch rates in the Fox River dropped on the third day and effort was spread to Sheehan Island Backwater and Side Channel, Delbridge Island, Fox River, and Heritage Harbor marina.

Table 1. USFWS Columbia Fish and Wildlife Conservation Office barrier defense efforts, November 15-17, 2016.

Number of Days Fished	3
Number of Crew Days	3
Fishing Time (hours)	12
Paupier Electroshocking Time (hours)	1.8
Person Fishing Hours (3 per crew)	36
Number of Bighead Carp	0
Number of Silver Carp	1623
Number of Grass Carp	0
Number of Asian Carp	1623
Est. Tons of Bighead and Silver Carp Harvested	4.0
CPUE (# of Asian Carp/day (5 hours))	676
CPUE (# of Asian Carp/fishing hour)	135
CPUE (# of Asian Carp/electroshocking hour)	902
CPUE (# of Asian Carp/person fishing hour)	45

Sampling results for all pools below the electric dispersal barrier through December 2016, along with 2014 and 2015 for comparison:

Lockport			
QUICK SUMMARY: 2016	2014	2015	2016
Yards of Net Fished	54,200	84,750	100,575
Miles of Net Fished	30.8	48.2	57.1
Number of Net Sets	271	405	484
Hoop Net Nights	64	64	64
Mini Fyke Net Nights	28	32	32
Electrofishing Runs	172	132	130
Electrofishing Time (hrs)	43.0	33.0	32.5
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Rd			
QUICK SUMMARY: 2016	2014	2015	2016
Yards of Net Fished	53,000	87,000	92,025
Miles of Net Fished	30.1	49.4	52.3
Number of Net Sets	264	405	439
Hoop Net Nights	64	64	64
Mini Fyke Net Nights	28	32	32
Electrofishing Runs	187	116	125
Electrofishing Time (hrs)	46.8	29.0	31.3
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Dresden Island			
QUICK SUMMARY:	2014	2015	2016
Yards of Net Fished	90,700	95,550	89,025
Miles of Net Fished	51.5	54.3	50.6
Number of Net Sets	420	372	381
Hoop Net Nights	64	114.5	64
Mini Fyke Net Nights	32	32	32
Electrofishing Runs	188	155	229
Electrofishing Time (hrs)	47.0	38.8	57.3
Asian Carp (AC) upstream I-55	5	27	7
AC downstream I-55	69	159	304
Total AC	74	186	311
Tons of AC Harvested	0.5	1.4	2.1

Rock Run Rookery			
QUICK SUMMARY: 2016	2014	2015	2016
Yards of Net Fished	18,400	39,550	52,125
Miles of Net Fished	10.5	22.5	29.6
Number of Net Sets	23	98	186
Total Asian Carp (AC)	55	236	184
Tons of AC Harvested	0.5	2.0	1.5

Marseilles			
QUICK SUMMARY:	2014	2015	2016
Yards of Net Fished	386,050	251,440	372,735
Miles of Nets Fished	219.3	142.9	211.8
Number of Net Sets	606	434	590
Pound Net nights	18	24	64
Hoop Net nights	56	86.5	149.7
Mini Fyke Net Nights	32	32	32
Electrofishing Runs	199	169	156
Electrofishing Time (hrs)	50	42	39
Bighead Carp	7,828	5,387	5,944
Silver Carp	28,640	69,105	63,463
Grass Carp	198	228	109
Total Asian Carp	36,666	74,720	69,516
Tons of Bighead and Silver Carp Harvested	186.6	276.6	302.2

Starved Rock			
QUICK SUMMARY:	2014	2015	2016
Yards of Net Fished	186,750	138,830	159,230
Miles of Nets Fished	106.1	78.9	90.5
Number of Net Sets	295	229	305
Hoop Net nights	421.7	141.2	683.1
Bighead Carp	4,430	2,908	2,048
Silver Carp	63,037	68,681	83,383
Grass Carp	561	641	605
Total Asian Carp	68,028	72,230	86,036
Tons of Bighead and Silver Carp Harvested	299.9	211.3	241.6

Assessing movement and behavior of Asian carp at a lock and dam structure to inform control strategies

And

Assessing Asian carp populations across ecologically significant ecosystems: quantifying abundance, biomass, and size distributions

Hydroacoustics

We worked on processing hydroacoustic data for the Illinois River (Alton – Dresden Island Pools) throughout November. We also identified sampling locations (main channel, side channel, and tributary sites) for hydroacoustic surveys in Pool 19 of the Mississippi River that will be sampled December 5–9.

Telemetry

Fall stationary receiver downloads were completed throughout the Illinois River by the end of November. Additionally, Master's student Matthew Lubejko completed and defended his M.S. thesis examining the movement of Bighead and Silver Carp through Starved Rock Lock and Dam.

Monitoring Asian Carp using Netting with Supplemental Capture Techniques

Netting for adult Asian carp with supplemental capture techniques took place in Dresden Island, Brandon Road and Lockport Pools during the month of November. In Dresden Island 400 yards of net were deployed, resulting in the capture of one fish. In Brandon Road 850 yards of net were deployed, resulting in the capture of zero fish. In Lockport 1050 yards of net were deployed, resulting in the capture of one fish. Of the fish captured during the month of November, none were Asian carp.

Analysis of feral Grass Carp in the CAWS and Upper Illinois River

During the month of November, manual tracking for tagged Grass Carp was done in Dresden Island, where five of the six tagged fish were detected. Telemetry gear was retrieved for the 2016 field season.

Telemetry Monitoring

USACE biologists captured 7 Common Carp from the Upper Lockport Pool near the Cal-Sag confluence on 7 November 2016. These fish were implanted with Vemco V16 transmitters and released back into the Lower Lockport Pool at the Cargill boat launch. All tagged fish were marked by an anal ray fin clip before release.

A full system mobile track and receiver download occurred on November 21, 22 and 30. Thirty three receivers were downloaded between the Cal-Sag confluence and the Dresden Island Lock and Dam. This included five receivers on the Kankakee River between the mouth and the Kankakee Dam. Detection data was reviewed for the previous two months since the last download took place. Preliminary analysis of the data indicates no passage in either direction through the Electric Dispersal Barrier System and fish activity in the Lower Lockport Pool was minimal. No Asian carp were detected at receivers upstream of the Hollywood Casino within the Dresden Island Pool (RM 283). There were 27 individual tags detected within the Dresden Island Pool with the highest detection rate at the Harborside Marina which included 85% of all tags detected within the Pool (n=23). There were no detections of any fishes in the Kankakee River upstream of the first receiver (1.5 miles upstream from mouth) and only two detections at that location.

A majority of the receivers were pulled from the system for the winter and will be replaced next spring. Thirteen receivers were left in place at strategic points throughout the focus area to facilitate winter data collection. These locations are primarily around lock and dams or the Electric Dispersal Barrier System.

Barrier Maintenance & Fish Suppression

The Electric Dispersal Barrier System continuously supplied power to the water during the month of November. There were no planned or unplanned outages at Barrier IIA or IIB during the month of October greater than 1 minute in duration. There were 3 occasions which required Barrier IIB to be powered on generator power causing 6 minor interruptions to power in the water for less than one minute each. Each power transfer from utility to generator or generator to utility results in a momentary loss of power to the water (< 30 sec) at that specific array. Barrier IIA was operational during all power transfer events at Barrier IIB. Barrier IIA experienced several system faults on 19 November due to power quality issues which are still under investigation. Each Barrier IIA fault was cleared automatically by the control system and resulted in loss of power to the water of less than 7 seconds each. Barrier IIB was operational throughout each of the minor Barrier IIA faults. The Demonstration Barrier was powered down on 28 November in support of construction activity at Permeant Barrier I and remained off through the remainder of the month.

The current status of each barrier array as of 1 December 2016 is provided here:

Barrier array: Applied Voltage (Voltage Gradient), Pulse width, Frequency

Barrier IIA narrow: 2200 V (2.3 V/in), 2.3 ms, 34 Hz

Barrier IIA wide: offline

Barrier IIB narrow: 2200 V (2.3 V/in), 2.3 ms, 34 Hz

Barrier IIB wide: 800 V (1.0 V/in), 2.3 ms, 34 Hz

Demonstration Barrier: offline

Larval Fish Monitoring

INHS concluded 2016 Illinois Waterway ichthyoplankton sampling at the end of September. Sample processing continued through the month of November. All samples collected in 2016 from the CAWS, the Brandon Road, Dresden Island, and Marseilles Pools, and the Kankakee River have now been processed. No Asian carp eggs or larvae have been identified from any locations in or upstream of the Dresden Island Pool. A sample collected from the Marseilles Pool at Morris on August 29 contained a number of suspected Asian carp eggs, but no Asian carp eggs or larvae have been identified from any other samples from this location. Sample processing has been completed through the month of June for samples collected in and downstream of the Starved Rock Pool. Very low numbers of Asian carp eggs and larvae appear to have been present in the Illinois Waterway downstream of the Marseilles Lock and Dam during May and June 2016 compared to the numbers observed during these months in the previous 2 years. Processing of samples for the remainder of 2016 will continue until all collected fish eggs and larvae have been identified. Subsamples of eggs and larvae will be prepared for genetic analyses to confirm visual identifications in the coming months. Complete results from 2016 ichthyoplankton sampling will be summarized and reported once sample processing has been finalized.

Alternate Pathway Surveillance in Illinois - Law Enforcement

Invasive Species Unit (ISU) investigated a complaint initiated by Kentucky Fish and Wildlife of a Kentucky fish dealer illegally importing and selling sport fish into Illinois without the proper import permits or non-resident aquatic life dealer's license. The investigation is ongoing.