

## 2017 May 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, Random and Targeted Site Sampling Downstream of the Electric Dispersal Barrier

#### *Electrofishing:*

- Crews from IDNR, USACE and USFWS completed 70 electrofishing runs at fixed and random sites (17.5 hours total) in the Lockport, Brandon Road, Dresden Island and Marseilles Pools in May.
- Crews collected 3,183 fish of 49 species and 2 hybrid groups.
- Fifteen Silver Carp were collected in the Marseilles Pool.
- **No Bighead Carp or Silver Carp were reported captured or observed in the Lockport, Brandon Road or Dresden Island Pools.**

#### *Hoop and Mini Fyke Netting:*

- Crews from IDNR set and pulled 16 hoop nets (6' diameter) and 16 mini fykes from fixed sites in Lockport, Brandon Road, Dresden Island and Marseilles Pools in May.
- Crews collected 23 fish of 6 species during hoop net sampling and 124 fish of 20 species and 1 hybrid group during mini fyke sampling.
- **No Bighead Carp or Silver Carp were reported captured or observed in any of the pools.**

#### *Commercial Netting:*

- Contracted commercial fishers along with assisting IDNR biologists set 12.3 miles of net at fixed and targeted sites in the Lockport, Brandon Road and Dresden Island Pools (including Rock Run Rookery) in May.
- Crews collected 915 fish of 12 species and 1 hybrid group.
- One Silver Carp was collected upstream of I-55 in Mobil Bay.
- One hundred Bighead Carp and 11 Silver Carp were collected in Rock Run Rookery.
- Twenty-seven Bighead Carp and 56 Silver Carp were collected in the Dresden Island Pool downstream of I-55.
- One Bighead Carp and 145 Silver Carp were collected in the approximate lower 3 miles of the Kankakee River.
- The average weight of Asian carp caught in the Dresden Island Pool (including the Kankakee River) in May was 23.4 lbs for Bighead Carp and 14.6 lbs for Silver Carp. Asian carp from the Rock Run Rookery had an average weight of 35.1 lbs and 20 lbs, respectively.
- **No Bighead Carp or Silver Carp were captured or observed in the Lockport or Brandon Road 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 May 2017, which includes the Unified Fishing Method in HMS W Pit, along with same time period in 2015 and 2016 for comparison:

<b>QUICK SUMMARY:</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>
<b>Number of Days Fished</b>	20	42	42
<b>Number of Net Crew Days</b>	100	240	252
<b>Yards of Net Fished</b>	143,320	249,570	199,180
<b>Miles of Nets Fished</b>	81.4	141.8	113.2
<b>Number of Pound Net nights</b>	24	67	64
<b>Number of Hoop Net nights</b>	70	769	487
<b>Number of Bighead Carp</b>	3,997	5,050	1,399
<b>Number of Silver Carp</b>	43,673	60,425	65,299
<b>Number of Grass Carp</b>	442	395	590
<b>Number of Asian Carp (AC)</b>	48,112	65,870	67,288
<b>AC/1000 yds of gill net</b>	304	241	280
<b>Tons of Bighead and Silver Carp Harvested</b>	174	237	227

## Understanding Surrogate Fish Movement with Barriers

Tagging results for May 2017

### Fish Tagged:

Lockport Pool

- Common Carp – 3

Brandon Road Pool

- Common Carp – 3

Dresden Island Pool/Rock Run Rookery

- Bigmouth Buffalo – 9
- Black Buffalo – 1
- Common Carp – 20
- Common Carp x Goldfish hybrid – 1
- Smallmouth Buffalo – 30

Total – 68 fish tagged

### Recaptures:

Brandon Road Pool

- Common Carp – 1

Dresden Island Pool/Rock Run Rookery

- Bigmouth Buffalo – 3
- Black Buffalo – 2

## Barrier Defense Using Novel Gear

### *Diel Sampling*

The USFWS - Columbia Fish and Wildlife Conservation Office sampled Hanson Material Services East and West Pits of Marseilles Pool with the electrified paupier (May 23–26, 2017) to determine an optimal time period for mass removal of Asian carp in backwaters of the Illinois River. From evening to early morning, randomized sampling was standardized at 5 minute transects. Although results are preliminary, a graphical representation of average Bighead and Silver carp catch suggests a linear increase until approximately 11PM, after which catch declines (Figure 1). Moving forward, diel sampling will occur in summer and fall to assess seasonal effects.

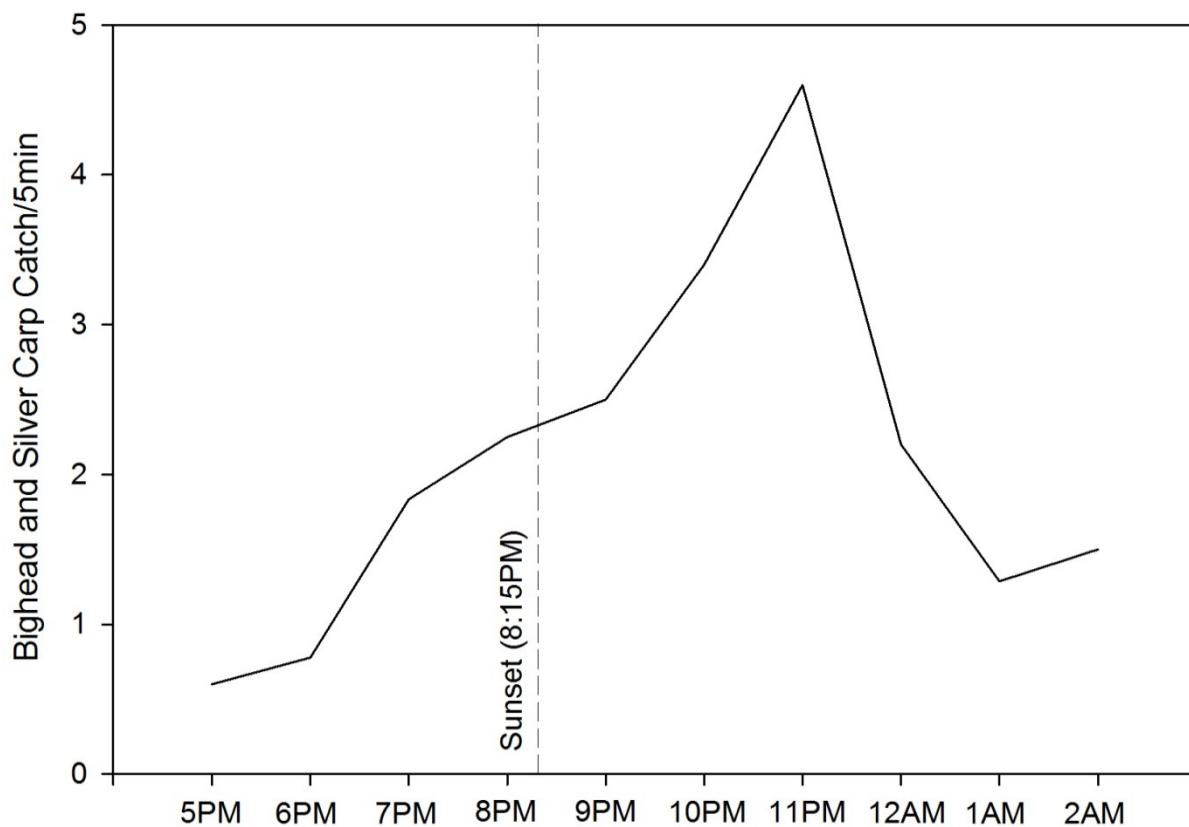


Figure 1. Hourly average Bighead and Silver carp catch per 5 minutes using the electrified paupier from 5PM to 2AM in Hanson Material Services East and West Pits, May 23 - 26, 2017. The vertical dashed line represents sunset (8:15PM).

## **Telemetry Monitoring**

USACE biologists completed a full system download of receivers within the CAWS from the Cal-Sag Channel to the Dresden Island Lock and Dam on 22-24 May. These receivers were analyzed for the period of mid-March to late-May. There were no detections indicating Electric Dispersal Barrier passage in either direction and no tagged Bighead or Silver Carp detected within the Lockport or Brandon Road Pools. The furthest upstream detection of Bighead or Silver Carp within the Dresden Island Pool occurred at the navigation marker island just upstream of Rock Run Rookery. The greatest number of unique transmitter detections occurred at the connecting channel to Rock Run Rookery (n=36). The top three receivers with the highest detection rates in Dresden Island were located at Harborside Marina (76.5%), Rock Run Rookery connecting channel (10.4%), and 1.5 miles into the Kankakee River (5.5%).

## **Barrier Maintenance & Fish Suppression**

The Electric Dispersal Barriers were successfully operated with minimal loss to power in water in the month of May and did not require fish suppression or clearing actions. There was 1 severe weather event which required the barriers to be operated on generator power resulting in 2 minor power outages at the Barrier IIB arrays. Barrier IIA maintained power to the water continuously while Barrier IIB was transferred to and from emergency generator power. 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 experienced on minor power outage as power was transferred from one pulse generating equipment to another during quarterly maintenance by the manufacturer. This power outage was less than 30 seconds in duration and Barrier IIB was fully operational during the outage. The narrow, high field array of Barrier IIA, wide and narrow arrays of Barrier IIB and the demonstration barrier are currently operational. The wide array of Barrier IIA is offline.

## **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 every week in May. 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. Water temperatures during the first two weeks of May were consistently below 18° C, but rose above this threshold during the week of May 15. Large-diameter eggs were collected during this week at Havana and Lily Lake in the LaGrange Pool. Water temperatures fell by 2 -3° C the following week, and no suspected Asian carp eggs were observed at this time and through the end of May. Ichthyoplankton sampling will continue on a weekly basis through the end of June, and will occur biweekly from July to October. Processing of 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.

### **Monitoring Fish Abundance and Spatial Distribution in Lockport, Brandon Road, and Dresden Island Pools and the Associated Lock and Dam Structures**

A mobile split-beam acoustic survey was conducted in the Lockport Pool of the Illinois Waterway the last week of May 2017 to determine fish density within the study reach. Preliminary results will be communicated when available.

### **Monitoring Fish Abundance, Behavior, Identification, and Fish-Barge Interactions at the Electric Dispersal Barrier, Chicago Sanitary and Ship Canal, Illinois**

Mobile hydroacoustic fish surveys were performed at the Electric Dispersal Barrier during the fourth week of May 2017. Preliminary results follow:

**Purpose:** The USFWS conducts hydroacoustic fish density surveys on a bi-weekly basis to estimate the number, sizes, and location of fish immediately downstream of the Electric Dispersal Barrier System (EDBS). These surveys provide “real time” information to fisheries managers and EDBS operations managers to facilitate fish management decisions and EDBS maintenance operations. Hydroacoustic surveys occur within the area downstream of the Romeoville, IL Electric Dispersal Barrier System (EDBS). The area of analysis extends from immediately downstream of Barrier IIA to a point approximately 300 m downstream of the EDBS. The acoustic beam produced by the side looking transducer sampled the water column across the entire canal.

**Preliminary Results 5-24-2017** Density of large (>6”) and small (< 6”) fish near the EDBS was very low during this week’s survey (Table 1). The largest estimated fish size was 438 mm. Water temperature was 16.1°C.

### **Distribution and Movement of Juvenile Asian carp**

Sampling to monitor for juvenile Asian carp (TL <160mm) was conducted for the Marseilles, Starved Rock, and Peoria reaches during May 2017. Boat electrofishing was conducted in Marseilles pool (5/1/2017 to 5/12/2017) at 32 locations (8 hours fishing time) throughout the reach. Additionally, mini-fyke nets were used for 6 net nights total. This effort resulted in 1340 fish captured representing 39 species. Only adult silver carp (n= 66) were captured, all above 400mm in total length (TL).

Boat electrofishing and mini-fyke nets were used in Starved Rock pool for 28 locations (7 hours fishing time) and 6 net-nights/locations, respectively. This effort resulted in 1524 fish caught representing 40 species. Silver carp 200mm to 300mm TL (n=1) and 300mm to 400mm TL (n=4) were captured, but none were observed less than 200mm. Additionally, Silver carp (n=411 fish) and Bighead carp (n=1 fish) 400mm TL or greater were captured.

Both electrofishing and mini-fyke nets were also used in Peoria pool (5/30/2017 to 6/1/2017). Electrofishing was conducted for 3.75 hrs at 15 locations and mini-fyke nets were set out at 12 locations/net nights. One young of year silver carp at 116mm TL was captured in Henry, IL at Sawmill Lake using boat electrofishing. Silver carp 200mm to 300mm TL (n=4) and 300mm to 400mm TL (n=15) were captured as well as fish greater than 400mm TL (n=91).

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

No Grass Carp were captured by the FWS in the month of May. Sampling occurred throughout the Dresden Island Pool, with focused effort below the Brandon Road Lock and Dam and at the confluence of the Kankakee River. Sampling also occurred in the Kankakee River upstream to the railroad bridge near the Interstate 55 Bridge.

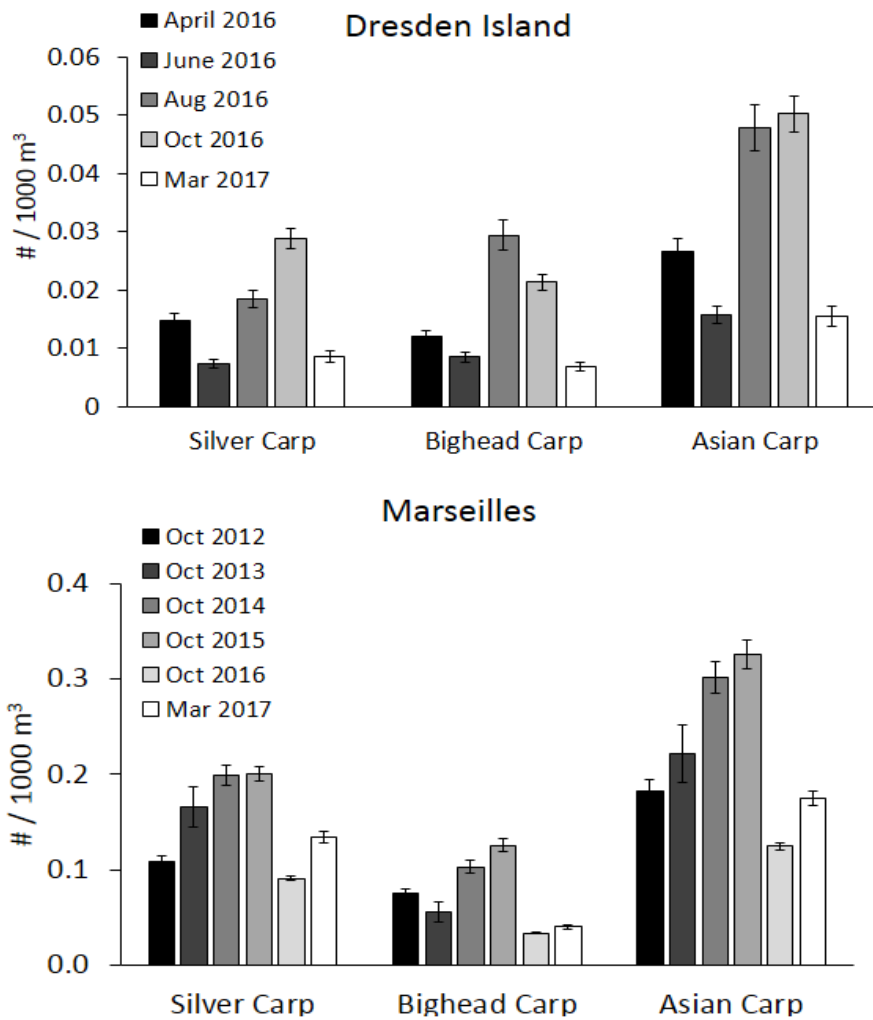
### **Assessing movement and behavior of Asian carp at a lock and dam structure to inform control strategies and Assessing Asian carp populations across ecologically significant ecosystems: quantifying abundance, biomass, and size distributions**

#### *Repeated sampling in Dresden and Marseilles*

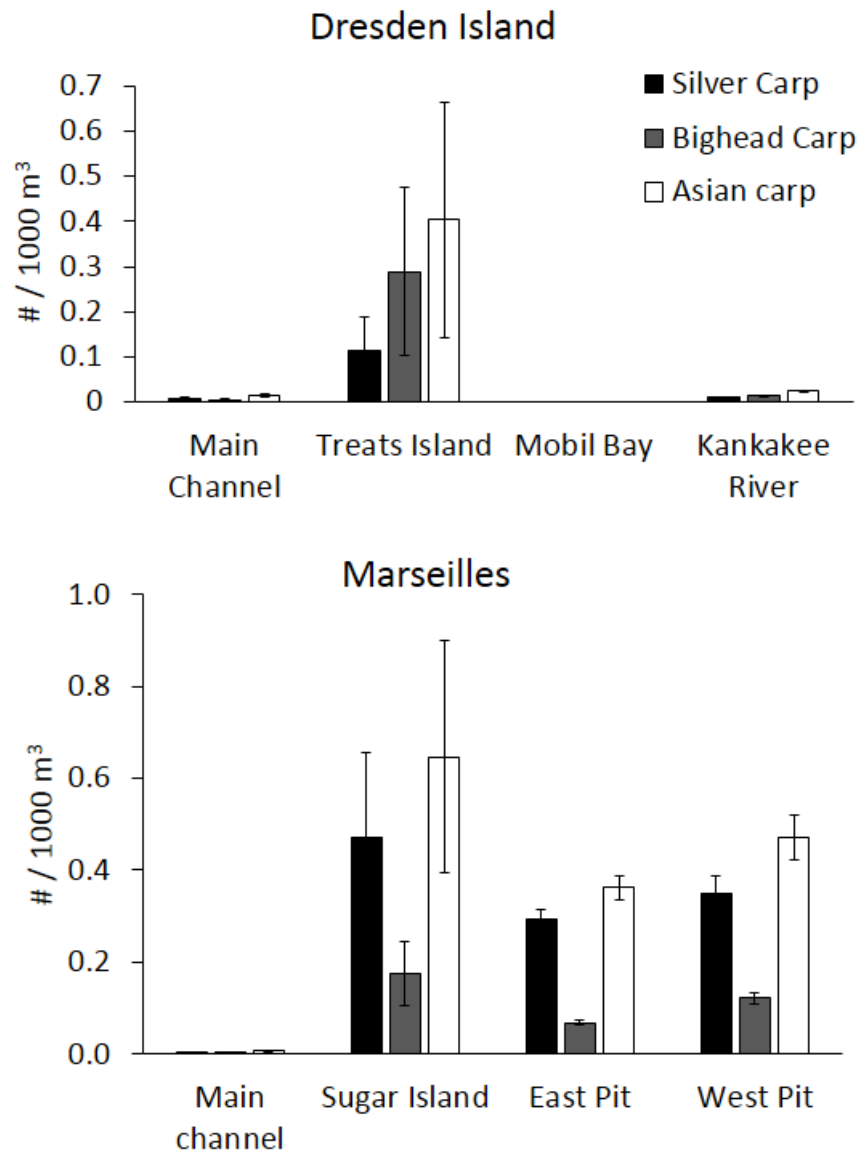
The first hydroacoustic surveys of 2017 were conducted throughout the Marseilles and Dresden Island pools in March, with final analyses now complete. Pool-wide Asian carp densities in Dresden Island Pool were relatively low and were similar to densities observed during June 2016 (Figure 1). Dresden Island density was low among all sites sampled. Densities were similar between the Kankakee River tributary and the main channel (Figure 2), and although Treats Island mean Asian carp density was high, it was not statistically different from other sites. Additionally, no Asian carp were detected in the Mobil Bay backwater. Note that the Rock Run Rookery was not included in these density surveys in Dresden Island Pool. Marseilles pool-wide Asian carp densities were slightly higher than the previous surveys (previous surveys only occurred in October; Figure 1), with the Sugar Island side-channel and the Hanson Material Services West Pit and East Pit having similar densities (Figure 2). The next hydroacoustic surveys to assess Asian carp densities in the Marseilles and Dresden Island pools will occur the first week in June 2017.

#### *Telemetry Array*

Stationary receiver downloads were conducted in Starved Rock Pool the week of May 29<sup>th</sup>. Downloads in other river pools will begin in the middle of June 2017.



**Figure 1.** Mean (SE) Silver Carp, Bighead Carp, and Asian carp (Silver and Bighead Carp combined) pool-wide densities throughout the Marseilles and Dresden Island pools in March 2017, with past density estimates provided for comparison. Seasonal densities were assessed in Dresden Island Pool during every other month in 2016. Marseilles densities were only assessed in October in previous years as part of annual river-wide fall surveys. Note differences in y-axis values between pools.



**Figure 2.** Mean (SE) site-specific densities of Asian carp (Silver Carp and Bighead Carp combined) in the Marseilles and Dresden Island Pools surveyed in March 2017.



## **Alternate Pathway Surveillance in Illinois - Law Enforcement**

On May 22, 2017, a fish broker in Northern Illinois pled guilty in court to one count of unlawful importation, transportation and sale for profit of Grass Carp in Illinois, and paid \$9582.97 in restitution to the IDNR. The fish broker illegally imported Grass Carp from Arkansas into Illinois and stocked them in 27 different bodies of water without the proper restricted species transportation permits. The investigation revealed the broker falsified applications for the permits to the IDNR and also imported and stocked VHS susceptible species in Illinois without VHS import permits. The Illinois Attorney General's Office Environmental Crimes Bureau prosecuted the case.

The ISU identified 3 businesses selling aquatic life without the required aquatic life dealer's licenses. Inspections of the facilities did not locate any Asian Carp being sold, but one of the locations had live tanks for selling Tilapia and Largemouth Bass. The ISU is assisting the businesses with obtaining their licenses.

The ISU received a complaint of a Chicago food market selling live grass carp, and after checking records from the store it was determined the company delivering the fish had the required non-resident aquatic life dealer's license and restricted species transportation permit to sell grass carp.