

## 2015 March Summary

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

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

#### *Electrofishing:*

- Crews from IDNR and USACE completed 72 electrofishing runs at fixed and random sites (18 hours total) in the Lockport, Brandon Road, Dresden Island, and Marseilles Pools during the weeks of March 16th and March 30th.
- Crews collected 630 fish of 32 species and 2 hybrid groups.
- **No Bighead Carp or Silver Carp were reported captured or observed in the Lockport and Brandon Road Pools.**
- One Silver Carp was observed in the Dresden Island Pool, downstream of the I-55 Bridge.
- Two Silver Carp were collected and five Silver Carp observed in the Marseilles Pool.

#### *Commercial Netting:*

- Contracted commercial fishers along with assisting IDNR biologists set 16.9 miles of net (135 sets) at fixed and targeted sites in the Lockport, Brandon Road and Dresden Island Pools (including Rock Run Rookery) during the weeks of March 16th and March 30th.
- Crews collected 506 fish of 12 species and 1 hybrid group.
- **No Bighead Carp or Silver Carp were captured or observed in the Lockport and Brandon Road Pools.**
- Seven Silver Carp and 13 Bighead Carp were collected in the Dresden Island Pool, downstream of the I-55 Bridge.
- 42 Bighead Carp and 3 Silver Carp were collected in Rock Run Rookery.

#### *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 during the week of March 30th.
- Crews collected 17 fish of 6 species and 1 hybrid group during hoop net sampling and 316 fish of 20 species and 1 hybrid group during mini fyke sampling.
- **No Bighead Carp or Silver Carp were reported captured or observed in Lockport, Brandon Road, Dresden Island and Marseilles Pools.**

## **Barrier Defense Asian Carp Removal Project**

Due to hazardous ice conditions and inclement weather, Barrier Defense was cancelled the week of March 9<sup>th</sup> and rescheduled, however starting the week of March 23<sup>rd</sup> Barrier Defense resumed. Modified from previous years, Barrier Defense specifically takes place in the Marseilles and Starved Rock Pools. Also in 2015, contracted commercial fisherman will be deploying and fishing modified 6-foot diameter hoop nets in the main channel border and side channel habitats as conditions allow. These habitats have been difficult to fish with gill and trammel nets during high flow events. Below is a summary of barrier defense activities for 2015.

### **QUICK SUMMARY:**

<b>Number of Days Fished</b>	4 days
<b>Number of Net Crews</b>	20 crew-days
<b>Yards of Net Fished</b>	29,720 Yards
<b>Miles of Nets Fished</b>	16.9 Miles
<b>Number of Bighead Carp</b>	773 Fish
<b>Number of Silver Carp</b>	8,011 Fish
<b>Number of Grass Carp</b>	177 Fish
<b>Number of Asian Carp (AC)</b>	8,961 Fish
<b>Tons of AC Harvested</b>	26.4 Tons

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

Mobile hydroacoustic surveys of the Lockport, Brandon Road, and Dresden Island pools were completed the week of March 15<sup>th</sup>. Additionally, a hydroacoustic survey was conducted at the Brandon Road lock chamber on March 19<sup>th</sup>. Data processing of survey results is ongoing.

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

Weekly mobile split beam hydroacoustic surveys of fish density directly below the Electric Dispersal Barrier have taken place throughout March. Fish density in the area remained low throughout the month.

### **Understanding Surrogate Fish Movement with Barriers**

A total of 178 surrogate fish were captured and floy tagged while conducting fixed, random and targeted monitoring in the pools downstream of the Electric Dispersal Barrier. Below are the current fish tag totals, recaptures and fish movement summary.

#### Fish Species Tagged

- Bigmouth Buffalo – 5
- Black Buffalo – 10
- Common Carp – 32
- Common Carp X Goldfish Hyb. – 1
- Smallmouth Buffalo – 130

Total – 178 fish tagged

#### Recapture Totals

- Dresden Pool – 1 Smallmouth Buffalo
- Rock Run – 1 Smallmouth Buffalo

Total – 2 recaptures

#### Fish Movement

- 2 recaptures by Upper Caudal Fin but didn't have tags (No data on movement)

#### Notable

- 2 recapture where tagged in 2014 due to the location of the fin clip on the upper caudal

### **Asian Carp Gear Development and Evaluation**

- In March 2015, Columbia Fish and Wildlife Conservation Office staff spent six days sampling tributaries of the Missouri River with the electrified Paupier. Sampling goals included targeting the 2014 year class, testing a new anode configuration, and recording fish response data to electrical settings.
- Over 700 invasive carps were captured during March 2015 sampling efforts. Twelve bighead carp were captured but silver carp dominated the catch at 696 fish. Silver carp ranged from 72 to 866 mm with 24 measuring less than 300 mm. Water temperatures fluctuated from a low of 5°C (41°F) to a high of 13.9°C (57°F).
- A new anode design was built and tested in the electrified Paupier and compared with previously developed configurations. The new design is suspended in the net frame and concentrates the electrical field in front and inside nets to reduce escape during sampling. Since it is attached to the net frame, it can be lowered with the nets to fish deeper water. The electrical field was mapped for comparison with other anode designs completed in December 2014. Results are still being analyzed.
- Video recordings of electrified Paupier sampling are being evaluated to determine invasive carp behavioral responses to electrofishing. Following field capture, videos are viewed in the office and fish behavior is characterized as jumping, taxis, or immobilization. This process will identify electrical settings eliciting desired responses in various environmental conditions and habitats.

### **Evaluation of Gear Efficiency**

No field sampling for the gear evaluation project occurred during the month of March. Work performed during this time included preparations for the upcoming sampling season, including repair and purchase of nets and other equipment, and coordination with USFWS and USGS partners to plan for juvenile Asian carp sampling efforts to take place during the month of April.

### **Larval Fish Monitoring**

No field sampling for the larval fish monitoring project occurred during the month of March. Work performed during this month included additional estimation of daily ages from otoliths of larval and juvenile Asian carp collected in 2014. Results of these analyses will be reported once available.

### **Unconventional Gear Development**

No field sampling for the unconventional gear development project occurred during the month of March. Work performed during this month included purchase of nets and conference calls to prepare for upcoming sampling with USFWS and USGS partners. Great Lakes trap (pound) nets will be set during spring or summer 2015 to test feeding attractants for Asian carp.

### **Telemetry Monitoring Plan**

On the week of 9 March, USACE biologists deployed a network of 32 VR2W stationary receivers from the Cal-Sag confluence with the CSSC upstream of the Dispersal Barriers to the Dresden Island Lock and Dam. A total of 8 receivers that were left in place throughout the 2014-15 winter were downloaded and mobile tracking occurred throughout the study area. A total of 76 tagged fish were detected on the reduced winter network of receivers. Preliminary analysis revealed no fish crossing the barriers and no Asian carp detected upstream of Rock Run Rookery in the Dresden Island Pool. The majority of Asian carp detections occurred from the Rock Run Rookery and the mouth of the Kankakee River.

On 19 and 20 March, USACE biologists worked in conjunction with commercial fishermen and IDNR observers to capture and tag Asian carp in the Dresden Island Pool. In total there were 49 Asian carp captured. Fifteen from the Dresden Island Pool open channel mainly from the mouth of the Kankakee (11 BH and 4 Silver) and 34 from Rock Run Rookery (31 BH and 3 Silver). A total of 33 Bighead Carp and 6 Silver Carp were tagged with telemetry transmitters and released back into the system.

USACE biologists have also spent 12 days downloading VR4 stationary receivers at the barriers location from the shoreline. Approximately 70% of data was downloaded in later half of the month with continued effort into April to complete the collection of this data.

## **Fish Suppression and Clearing in Support of Barrier Maintenance**

Within the Month of March the Dispersal Barrier System continuously maintained power to the water at one or more barrier arrays resulting in no direct opportunities for fish passage. However, due to continuing issues with barrier power consumption in relation to high conductivity concentrations in the canal and interference with nearby railroad crossing signals the barriers operating parameters experienced several changes to peak voltage gradients, frequency and pulse width. Changes to the barriers operating parameters were made on 7, 19-21, 24-25, and 30-31 March. Each operational change was communicated to core members of the MRWG to relay information as quickly as possible and to discuss the need for clearing actions. No clearing actions were deemed necessary but increased surveillance of the barriers and lower Lockport Pool was initiated. Additional monitoring included targeted commercial netting near the barriers location, telemetry data downloads/analysis and weekly sonar surveys by USFWS using side scan sonar and split-beam hydroacoustics. Monitoring actions revealed no reason to initiate further clearing actions for removal of fish between the barriers. Current operating conditions at the barriers are as follows:

Demo Barrier: Active - 5 Hz, 4 ms, 1 V/in

Barrier IIB: Narrow Array – Active – 33 Hz, 2.3 ms, 1.7 V/in

Wide Array – Active – 33 Hz, 2.3 ms, 1 V/in

Barrier IIA: Narrow Array – Active – 33 Hz, 2.3 ms, 1.7 V/in

Wide Array – Inactive

## **Identifying Movement Bottlenecks and Changes in Population Characteristics of**

### **Asian Carp in Illinois River**

#### *Hydroacoustics*

No hydroacoustic surveys have been undertaken yet in 2015, we anticipate our first survey will be in the upper Illinois River in April / May (depending on river conditions). Processing and analysis of hydroacoustic data collected during previous years is ongoing.

#### *Telemetry*

Vemco VR2W acoustic receivers were downloaded from Dresden Lock and Dam downstream to LaGrange Lock and Dam between 11 March and 22 March.

Additionally, five new receivers were installed: one between Bulls Island and river right bank (RM 240.6), two upstream of Starved Rock Lock and Dam on river left (RM 231.3, RM 232.5), and two downstream of Starved Rock Lock and Dam (RM 230.8, RM 229.3). We now have 44 receivers in the Illinois River (Alton= 8, LaGrange= 8, Peoria= 8, Starved Rock= 9, Marseilles= 6, one in each lock chamber= 5). Additional receivers will be installed by the end of May 2015 around Starved Rock Lock and Dam to investigate movements of Asian Carp around Starved Rock Lock and Dam, eventually monitoring up to 17 receivers around the structure and tagging (acoustic transmitters) 100 Asian Carp downstream of the structure. March tagging efforts were limited due to unfavorable weather conditions. On March 23, with the assistance of IDNR, we tagged and released two silver carp (530mm, 590mm) at the mouth of the Vermilion River.

## **Researchers please follow these protocols if a tagged Asian carp is collected.**

- 1) Write down the tag number.
- 2) Write down the GPS coordinates
- 3) If the tag says "REWARD" or "\$5 REWARD," remove the fish from the water, get a length and or weight and report the information to SIU (currently Matt [Lubejko-mlubejko@siu.edu](mailto:mlubejko@siu.edu) and Ruairi Mac Namara [rmacnamara@siu.edu](mailto:rmacnamara@siu.edu)). This fish can be killed.
- 4) If the tag says "\$50 REWARD" OR "\$50 REWARD-KEEP FISH FOR REWARD", write down the length/weight, condition of the fish, and GPS coordinates and place the fish back in the water. Unless the fish does not look like it is going to survive OR it is collected near/above Brandon Rd. Lock and Dam, PLEASE PUT THE FISH BACK IN THE WATER. Still report the information to SIU or Matt Shanks at the USACE.
- 5) In addition, if the tag has a number < 1000, you can remove it from the water (give SIU all information and the tags). If the jaw tag # is between 2001 and 2500 you can remove it from the water after 6/1/2015 (again, give all info to SIU).

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

- The Illinois Department of Natural Resources Invasive Species Unit (ISU) attended a Webcrawler training event to provide input on improving the system and learn how to use the search tool to identify individuals or companies selling invasive species.
- The ISU updated the invasive species curriculum to be used at the Conservation Police academy to teach the newly hired Conservation Police Officers invasive species enforcement techniques and laws.
- The ISU inspected a fish hauler in Chinatown and found the shipment to be properly labeled and permitted.
- The ISU observed an aquatic life dealer in Chinatown advertising live Crucian Carp for sale. Invoices were obtained identifying the supplier, but it was determined the business falsely labeled Goldfish as Crucian Carp after IDNR biologists were sent photographs of the fish.
- The ISU inspected 4 fish markets in the Chicagoland area and identified a non-resident wholesale aquatic life dealer from Pennsylvania selling aquatic life to the store without a license.
- The ISU attended the Great Lakes Fishery Commission Law Enforcement meeting in Ypsilanti, MI.
- The ISU completed the High Tech and Advanced High Tech Computer course.