

2018 April 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 immediately downstream of the Electric Dispersal Barrier.**

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

Electrofishing:

- Crews from USACE completed 33 electrofishing runs at fixed and random sites (8.25 hours total) in the Lockport, Brandon Rd and Dresden Island Pools in April.
- They collected 330 fish of 28 species.
- One adult Silver Carp was collected in the Dresden Island Pool, downstream of I-55.
- **No Asian carp were captured or observed in Lockport or Brandon Rd Pools.**

Commercial Netting:

- Contracted commercial fishers along with assisting IDNR biologists set 50.2 miles of gill net at fixed and targeted sites in the Lockport, Brandon Rd and Dresden Island Pools (including Rock Run Rookery) in April.
- They collected 1,137 fish of 15 species.
- Three Silver Carp were collected in Rock Run Rookery.
- Fourteen Bighead Carp and 77 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.**

Sampling results by pool below the electric dispersal barrier through April 2018, along with the same time period in 2016 and 2017 for comparison:

Lockport			
	2016	2017	2018
Yards of Net Fished	20,600	15,000	27,200
Miles of Net Fished	11.7	8.5	15.5
Hoop Net Nights	7.1	3.6	0.0
Mini Fyke Net Nights	3.3	3.6	0.0
Electrofishing Runs	16	24	27
Electrofishing Time (hrs)	4.0	6.0	6.8
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0

Brandon Rd			
	2016	2017	2018
Yards of Net Fished	19,700	16,900	23,000
Miles of Net Fished	11.2	9.6	13.1
Hoop Net Nights	7.2	7.6	0.0
Mini Fyke Net Nights	3.3	4.5	0.0
Electrofishing Runs	16	24	24
Electrofishing Time (hrs)	4.0	6.0	6.0
Total Asian Carp (AC)	0	0	0
Tons of AC Harvested	0	0	0
Dresden Island			
	2016	2017	2018
Yards of Net Fished	14,550	16,600	38,900
Miles of Net Fished	8.3	9.4	22.1
Hoop Net Nights	6.9	8.0	0.0
Mini Fyke Net Nights	3.5	8.0	0.0
Electrofishing Runs	32	34	21
Electrofishing Time (hrs)	8.0	8.5	5.3
Asian Carp (AC) upstream I-55	6	12	0
AC downstream I-55	138	150	397
Total AC	144	162	397
Tons of AC Harvested	1.0	1.5	3.0
AC/1000 yds of gill net	9.8	9.6	10.2
Rock Run Rookery			
	2016	2017	2018
Yards of Net Fished	12,400	9,000	15,400
Miles of Net Fished	7.0	5.1	8.7
Pound Net nights	0	0	4
Bighead Carp	24	21	23
Silver Carp	23	10	50
Total Asian Carp (AC)	47	31	73
Tons of AC Harvested	0.7	0.5	0.9
AC/1000 yds of gill net	3.8	3.4	4.7

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 April 2018, along with the same time period in 2016 and 2017 for comparison:

	2016	2017	2018
Number of Days Fished	26	21	17
Number of Net Crew Days	148	146	191
Yards of Net Fished	147,620	127,330	98,850
Miles of Nets Fished	83.9	72.3	56.2
Number of Pound Net nights	50	65	21
Number of Hoop Net nights	0	0	0
Number of Bighead Carp	2,963	787	743
Number of Silver Carp	34,069	32,322	33,162
Number of Grass Carp	162	61	187
Number of Asian Carp (AC)	37,194	33,170	34,092
Tons of AC Harvested	139.7	132.6	148.3
AC/1000 yds of gill net	207.1	253.1	333.0

Marseilles			
	2016	2017	2018
Yards of Net Fished	119,950	102,930	73,300
Miles of Nets Fished	68.2	58.5	41.6
Pound Net nights	20	35	15
Hoop Net nights	7.8	7.9	0.0
Mini Fyke Net Nights	3.6	8.0	0.0
Electrofishing Runs	24	12	12
Electrofishing Time (hrs)	6.0	3.0	3.0
Bighead Carp	2,611	531	604
Silver Carp	25,103	18,170	22,265
Grass Carp	19	21	14
Total Asian Carp	27,733	18,722	22,883
Tons of AC Harvested	114.1	82.1	109.1
AC/1000 yds of gill net	176.6	172.7	296.2

Starved Rock			
	2016	2017	2018
Yards of Net Fished	27,670	24,400	25,550
Miles of Nets Fished	15.7	13.9	14.5
Hoop Net nights	0	0	0
Bighead Carp	352	256	139
Silver Carp	8,989	14,207	10,897
Grass Carp	153	44	174
Total Asian Carp	9,494	14,507	11,210
Tons of AC Harvested	25.6	50.6	39.2
AC/1000 yds of gill net	340.4	594.5	438.7

Using Long-term Asian Carp Abundance and Movement Data to Reduce Uncertainty of Management Decisions

Analyses were completed for hydroacoustic surveys conducted before and after unified method harvest in the HMS East and West pits. Silver Carp and Bighead Carp densities decreased in both backwaters following unified methods, with largest density reductions for Silver Carp (Figure 1).

March hydroacoustic surveys in Dresden Island Pool indicated that Asian carp (Silver Carp and Bighead Carp combined) densities were highest in the Kankakee River, primarily along the eastern shoreline within the Kankakee River (Figure 2). Densities were low throughout the Dresden Island main channel, with moderate densities near the power plant effluent by the Dresden Island Lock & Dam and just upstream of the I-55 bridge. No Asian carp were estimated to be present in the Treats Island or Mobil Bay backwaters.

March Asian carp densities in Marseilles Pool were concentrated in the Sugar Island side channel and the HMS East and West Pit backwaters (Figure 3). Asian carp densities in the East Pit backwater were highest in the northeast bay and were concentrated in the western end of the West Pit backwater (Figure 4).

All stationary telemetry receivers were downloaded in the Starved Rock pool in early April.

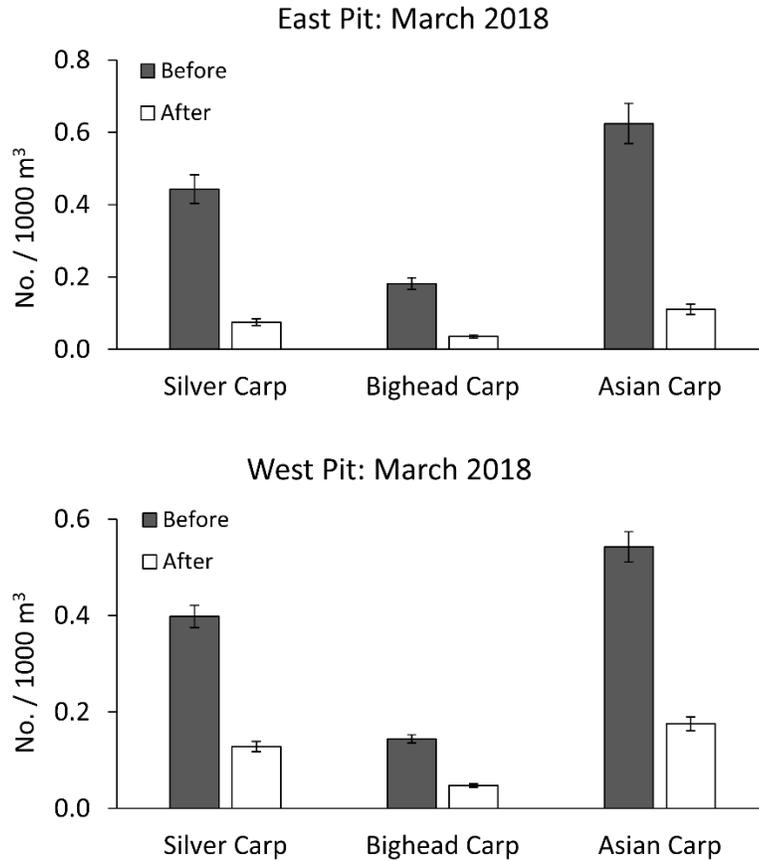


Figure 1. Mean (SE) densities from hydroacoustic surveys conducted before and after unified method harvest in the HMS East and West pit backwaters of the Marseilles Pool (Asian Carp: Silver Carp and Bighead Carp combined).

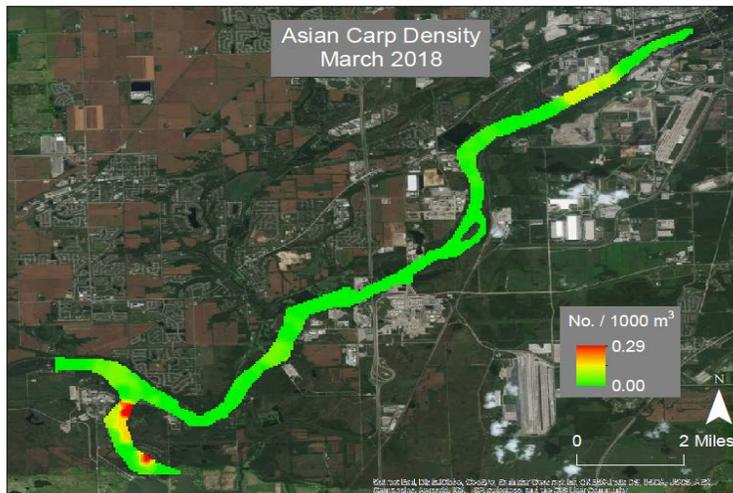


Figure 2. Asian carp (Silver Carp and Bighead Carp combined) density distributions from hydroacoustic surveys conducted in Dresden Island pool in March 2018.

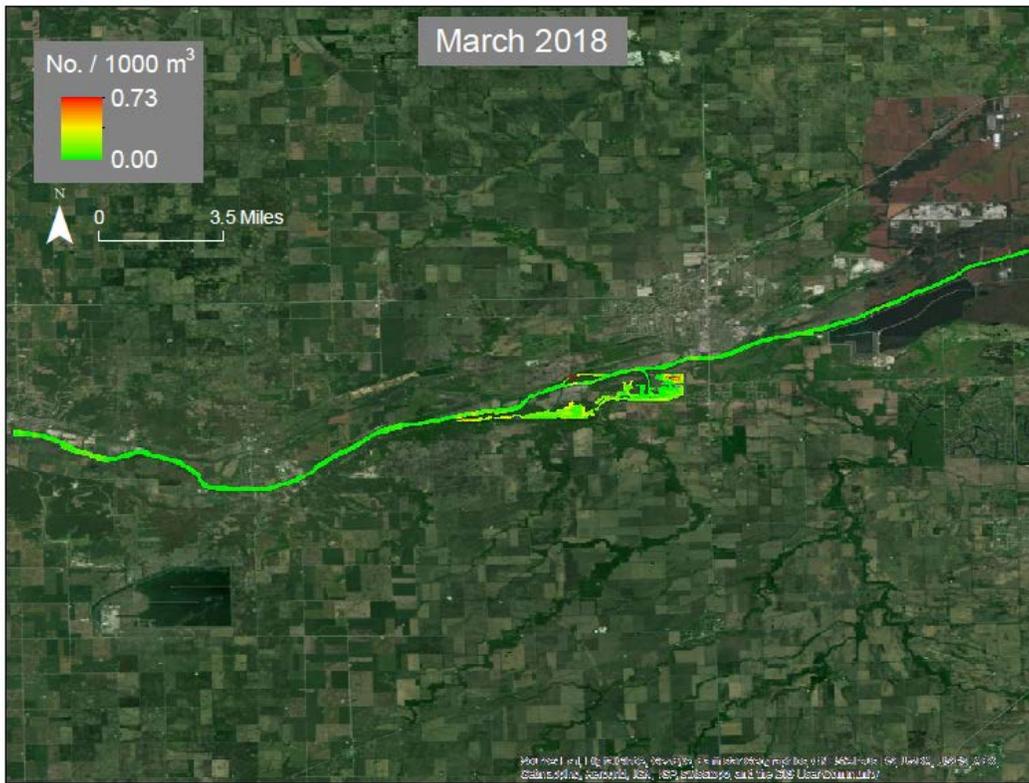


Figure 3. Asian carp (Silver Carp and Bighead Carp combined) density distributions from hydroacoustic surveys conducted in Marseilles Pool in March 2018.

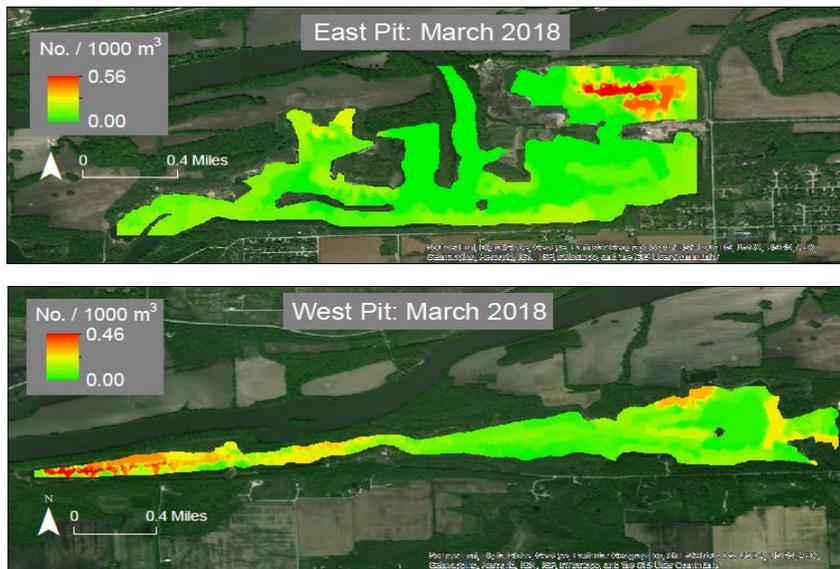


Figure 4. Asian carp (Silver Carp and Bighead Carp combined) density distributions from hydroacoustic surveys conducted in the HMS East and West pit backwaters of Marseilles Pool following unified method harvest in spring 2018. Note differences in scale between maps.

Real-time USGS Acoustic Telemetry Receiver Summary

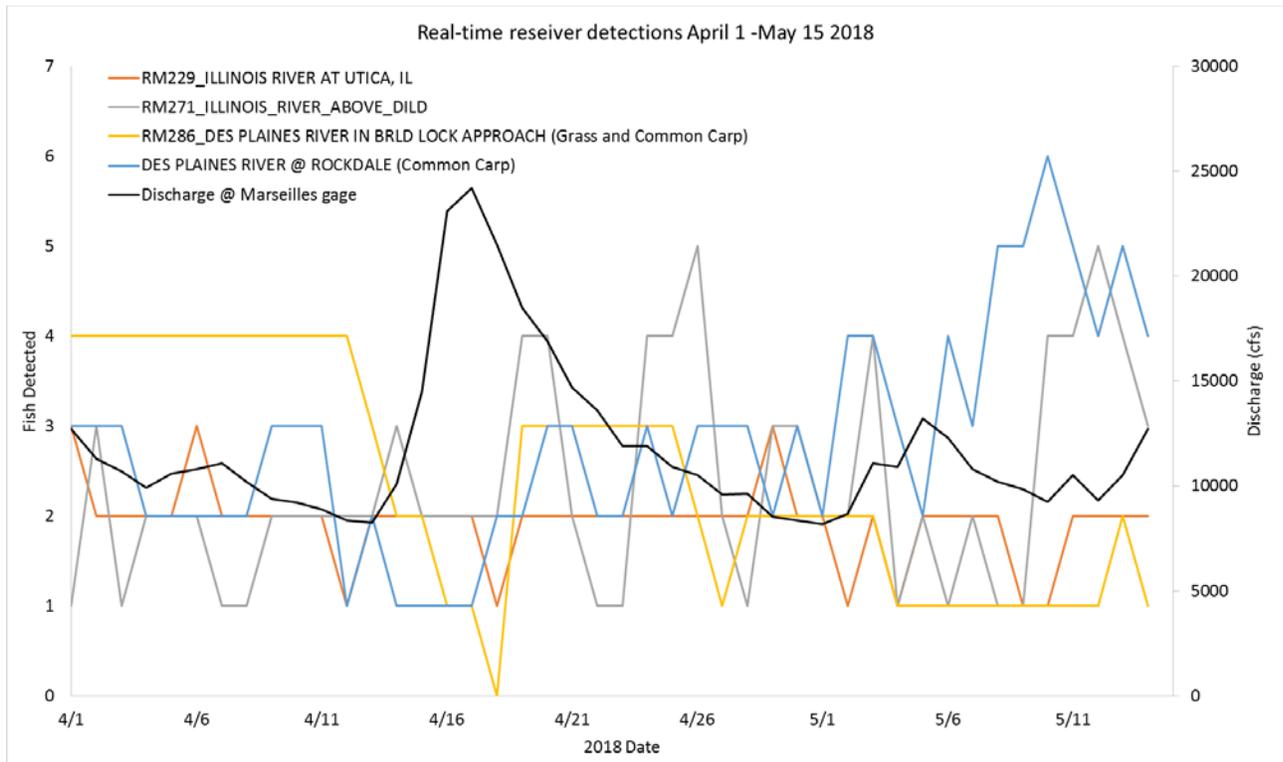


Figure 1. Graph showing fish detections for 1 April – 15 May at Utica, Minooka, and Rockdale receivers. All fish shown for Utica (RM 229; orange) and Minooka (RM 271; grey) are Silver or Bighead carp. Discharge for the Marseilles gaging station (USGS 05543500) is shown as a black line.

Twenty-one bighead or silver carp were detected on real-time receivers from 1 April – 15 May 2018. All bighead or silver carp were detected at Utica (N = 8 silver carp) or at Minooka above Dresden Island Lock and Dam (N = 11 bighead carp, 1 big/silver hybrid, 1 silver carp). Additional common or grass carp were detected at the Rockdale receiver below Brandon Road Lock and Dam (N = 5 grass carp, 1 common carp), at Rockdale above Brandon Road Lock and Dam (N = 7 Common Carp), and at Minooka (N = 1 grass carp). For additional details, please refer to the attached spreadsheet and graphs. For questions, please contact Marybeth Brey (mbrey@usgs.gov).

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 U.S. Geological Survey (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.

Distribution and monitoring of juvenile Asian carp

Field crews sampled Marseilles and Dresden Island pools for small Silver and Bighead carps (TL <153mm) during April 2018. Boat electrofishing was used in Dresden Island during 2 weeks from April 17 to April 25 at a total of 24 sites (6 hrs total fishing time) and resulted in a total of 708 fish captured representing 35 species. No Silver or Bighead carp were caught during sampling in Dresden Island. Marseilles was sampled on April 11 at a total of 7 sites (105 minutes fishing time). Poor river conditions and limited staff heavily limited field time for this week. A total of 3472 fish representing 18 species were captured including 2 adult Silver Carp and 1 Bighead Carp.

Habitat Use and Movement of Juvenile Silver Carp (Telemetry)

One week of effort was spent in Peoria Pool from April 23 to April 27 sampling for juvenile Silver carp as part of monitoring for distribution of small Silver and Bighead carp while simultaneously locating fish for telemetry tagging. Crews also performed maintenance on stationary acoustic receivers and radio telemetry stations. Electrified dozer trawl was used for 13 runs (61 minutes fishing time) and boat electrofishing was used for two runs (23 minutes fishing time) between the areas of Hennepin, IL and Chillicothe, IL. A total of 585 fish representing 14 species were captured. Juvenile Silver carp (<400mm total length, n = 43 fish) were captured throughout sampling. The mean length of juvenile Silver Carp captured was 362mm TL and the smallest fish was 222mm in TL. Additionally, 143 adult Silver carp were captured as a result of sampling.

Telemetry Monitoring

No action taken in April on Telemetry. This is a bi-monthly program with additional activities performed on an as needed basis.

Barrier Maintenance & Fish Suppression

Electrode replacement at Barrier IIA was completed on 3 April 2018. Barrier IIA and IIB experienced periods of concurrent outages during normal business hours during the dive operations necessary to replace electrodes. Barrier IIB was placed back into operation during non-working hours and the Demonstration Barrier remained on the entire time of the maintenance action. The MRWG held weekly meetings during the period of outages to assess risk of Asian carp presence. Additional monitoring actions and a complex sound barrier were deployed to supplement routine monitoring during this time.

The Demonstration Barrier experienced one transfer to back up power on 17 April 2018 in support of utility power supply maintenance. The backup generator provided power

to the water with minimal loss of power to the water during transfer to and from the generator. Barriers IIA and IIB were operational throughout this period.

Barrier IIA was powered down for annual maintenance at 10:30 am on 24 April 2018 and was returned to operation on 2 May 2018. In order to minimize risk to human safety, Barrier IIB was shut off for approximately 30 minutes to allow appropriate grounding protocols at Barrier IIA at the beginning of the annual maintenance. The Demonstration Barrier was operational throughout the annual maintenance period. The MRWG reviewed relevant monitoring results, executed a hydroacoustic scan of the barriers, and maintained the complex sound barrier downstream of the barriers in response to this outage. No further action was deemed necessary and the risk of Asian carp presence at the barriers was considered low.

Ecosystem Response to Asian Carp Barrier Defense and Removal

INHS collected zooplankton and water chemistry samples at 15 main channel and backwater sites located in the Brandon Road, Dresden Island, Marseilles, Starved Rock, Peoria, LaGrange, and Alton Pools during the weeks of April 9 and April 23. The collected data will be compared to previous years' data from the same locations and will be used to assess changes in zooplankton densities and community composition in response to changing Asian carp densities.

Larval Fish Monitoring

INHS began 2018 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 April 23 and April 30. 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. Water temperatures during these first two weeks of sampling were below the threshold thought to be conducive to Asian carp spawning. No large-diameter eggs were observed upon initial inspection of all samples. Ichthyoplankton sampling will continue on a weekly basis through May and 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.

Unconventional Gear Development

INHS evaluated alternative pound net configurations at Chautauqua National Wildlife Refuge during the weeks of April 9 and April 23. Pound nets have previously been used to block entire channels, but they have the potential to be used in larger, open-water areas as well. During each week, INHS staff set one pound net perpendicular to shore and another parallel to shore to compare catch rates and species composition between

these alignments. Pound nets were set on Monday each week, and fished until Friday. Nets were attended daily, at which time all fish were removed, measured, and weighed. A total of 192 fish were captured from the north pool of Chautauqua, including 99 Silver Carp, and 161 total fish were captured from the south pool, including 117 Silver Carp, 13 Bighead Carp, and 7 Grass Carp. The parallel net configuration produced more fish in the north pool, averaging 21 Silver Carp per night versus 3.75 per night for the perpendicular set. However, the perpendicular configuration captured considerably more fish in the south pool, averaging 27.75 Silver Carp, 3.25 Bighead Carp, and 1.25 Grass Carp per night versus 1.5 Silver Carp, 0.5 Grass Carp, and no Bighead Carp in the parallel set. Given the highly variable catches that different configurations of pound nets have produced, it is not possible at this time to recommend a given configuration for setting pound nets in open-water areas. Site-specific conditions and fish distribution may influence catch rates more than net configuration.

Upper Des Plaines Monitoring

Crews from FWS and SIU completed 16 electrofishing runs (4 hours) in the upper Des Plaines River. No Bighead or Silver Carp were collected or observed. Low water levels rendered netting sites inaccessible.

Alternate Pathway Surveillance in Illinois - Law Enforcement

The Illinois Department of Natural Resources Invasive Species Unit (ISU) conducted a follow up inspection of a fish market in Chicago's Chinatown that was previously operating without an aquatic life dealer's license and that was receiving live shipments of tilapia from an unidentified fish hauler. The business had purchased the license and all live species being sold were legal to possess and sell. The ISU identified the company that was illegally delivering fish to the store.

The ISU inspected an aquaculture facility in Bureau county and issued written warnings to the owner for raising tilapia with an expired aquaculture permit and for not submitting a 2017 aquaculture annual report.

The ISU interviewed a complainant who reported suspected illegal activities of a fish transportation company delivering fish into Illinois.

The ISU assisted District 4 CPOs with commercial inspections of fish and minnow dealers.

The ISU attended the 36-hour Advanced Undercover Tactics and Survival Course in Mason, Ohio.

ISU is investigating a bait shop for selling live rusty crayfish. One witness has been interviewed and the investigation is on-going.

ISU assisted a CPO with a resident license fraud investigation by using open source intelligence tools. ISU provided the CPO with evidence for prosecution.