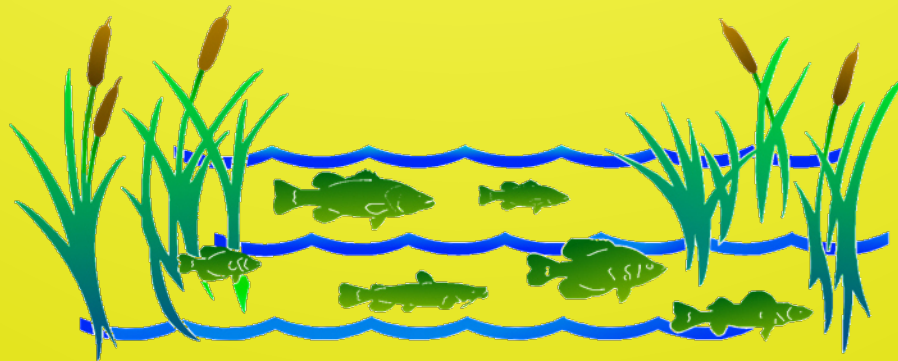


Tracking Asian Carp in the Tennessee River and Tenn-Tom Waterway with Acoustic Telemetry

Trevor Knight
MDWFP Fisheries Biologist



FISHERIES BUREAU



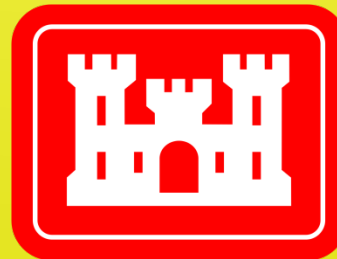
Project Objectives

- Evaluate Movements of Asian Carp in the TN River and TTW
- Evaluate Asian Carp Movement Through Locks and Dams
- Continue to Update Leading Edge of Asian Carp Invasion

Project Partners



TENNESSEE TECH
UNIVERSITY



MDWFP Sampling Efforts

- April 2015- Assist USFWS with eDNA Sampling at Bay Springs Lake and Lock E
- Dec. 2015- Gill Net Sampling in Pickwick
- Mar. 2016- Gill Net Sampling in Pickwick
- June 2016- Gill Net Sampling in TN River
- Oct. 2016- Gill Net Sampling in Pickwick
- Nov. 2016- Assist with A.C. Tagging at "Carp Blitz" on Kentucky Lake
- June 2017- Assist TN Tech with Carp Sampling in Pickwick
- Oct. 2017- Electroshock Divide Cut for Carp
- Nov. 2017- Gill Net/Electroshock Sampling and Tagging Asian Carp in Pickwick with TN Tech
- Nov. 2017- Assist USFWS with Gill Net Sampling in Pickwick and Deploy Vemco Receivers

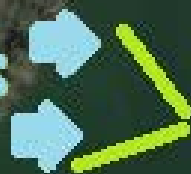
Gill Net/Electroshocking Method

- Gill Nets 300'x12'x3.5" mesh monofilament
- Set 2 Nets in V Shape
- Electroshock 5-10 Minutes with Two Boats
- Drive/Corral Fish Towards Nets
- Run Nets Immediately After Electroshock
- 8-14' Depth Range Flats and Humps

Kreamer
Branch

Blackard
Hollow

Shock Boats



Gill Nets



Acoustic Transmitters

- Vemco V16 Coded Tag
 - 69 kHz
 - Transmits Every 60 Seconds
 - Approx. Battery Life of 4-4.5 Years



Tagging Results

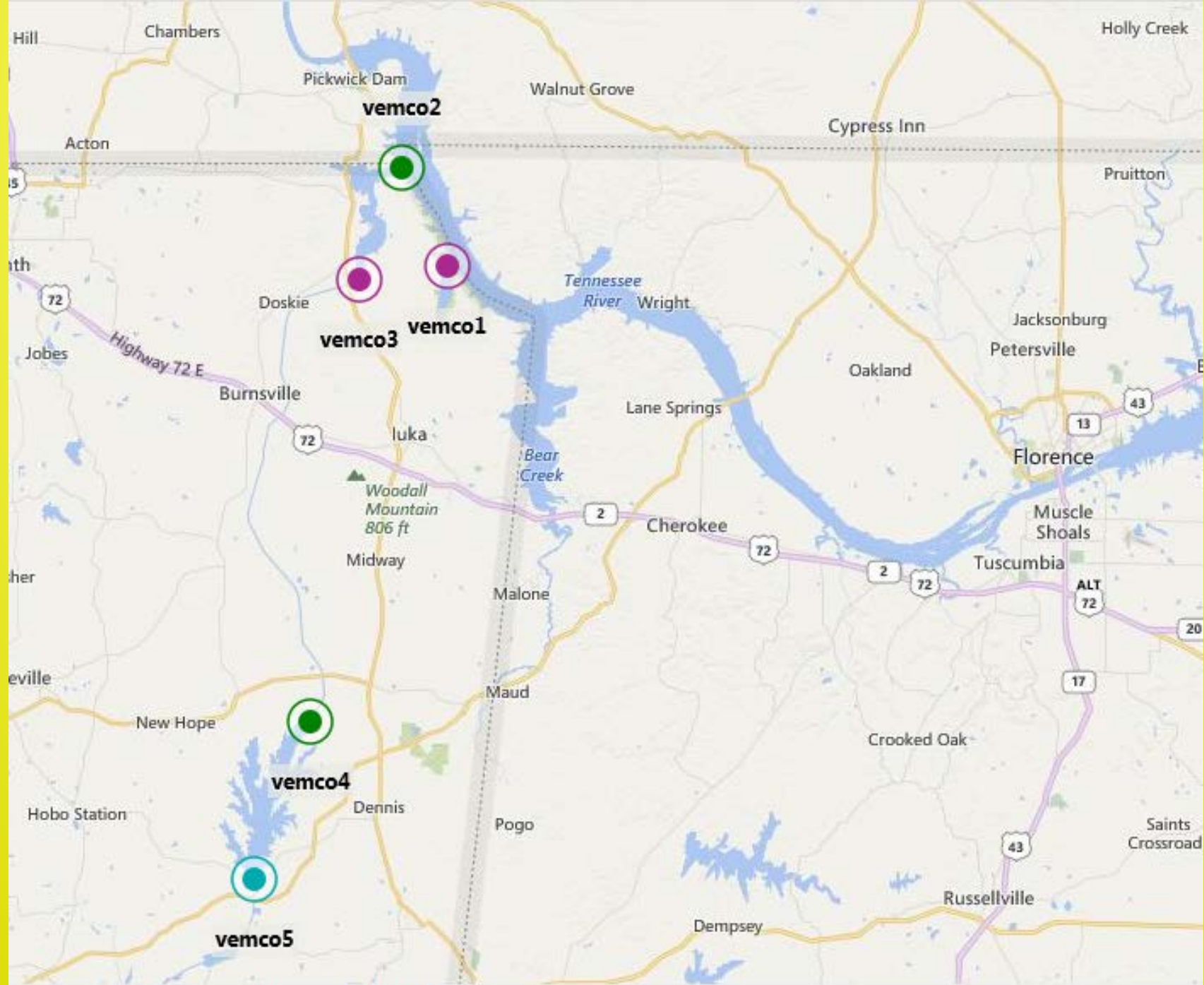
- 10 Adult Silver Carp Implanted with Acoustic Tags and External Floy Tags
- Size Ranged from 710-805 mm
- Average Length was 747 mm
- Water Temperature 59°F (15°C)

Acoustic Monitoring Receivers

- Vemco VR2W-69 kHz
- Battery Life ~ 15 Months
- Download Data Via Bluetooth







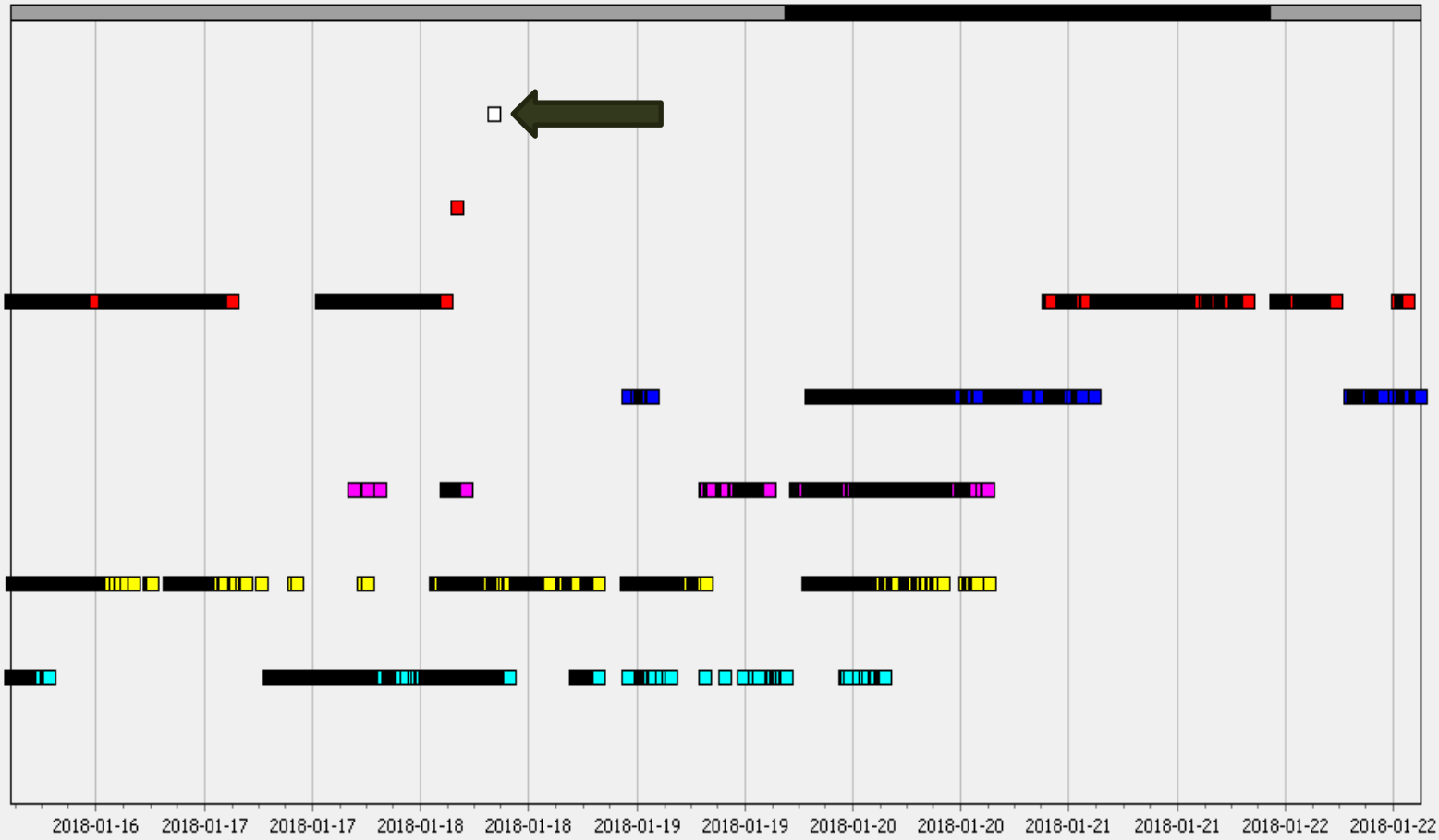
Events Chart



Stations

Showing 8192 of 23744 detections

☐ Day/Night Shading



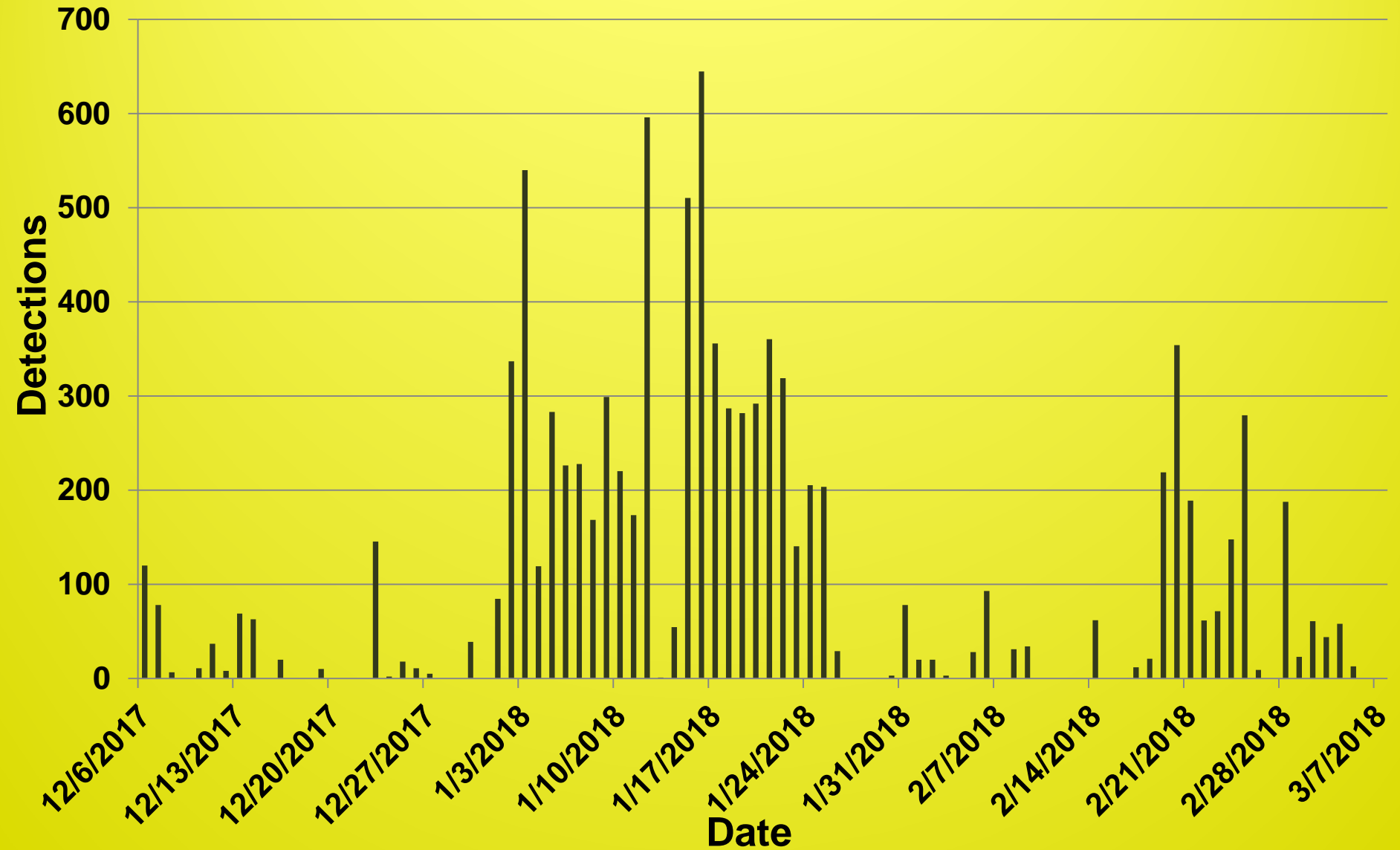
Group Detections By:

Transmitters

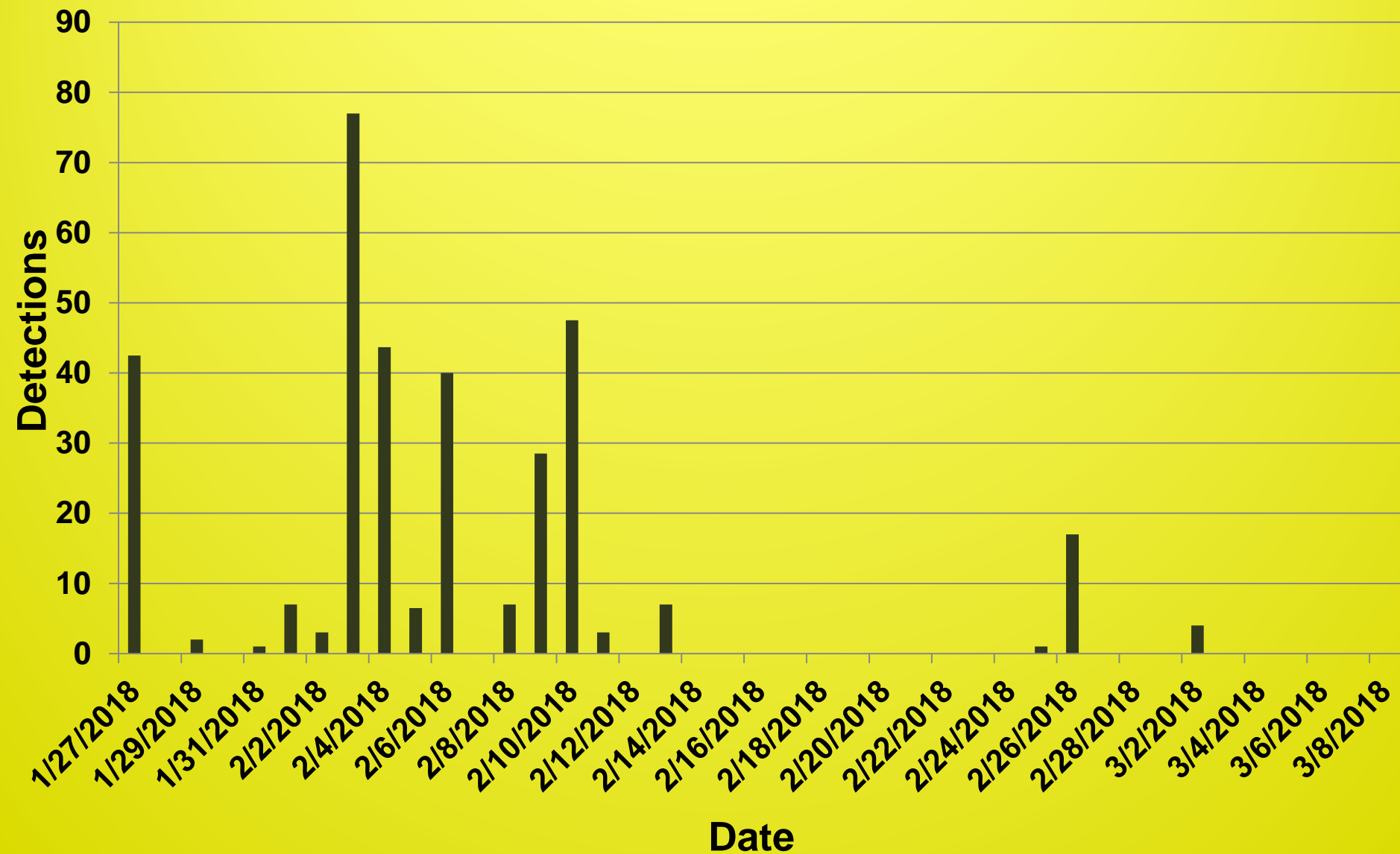
- Transmitters (7)
- ☐ A69-1601-4376
- ☒ A69-1601-38157
- ☒ A69-1601-56722
- ☒ A69-1601-56725
- ☒ A69-1601-56729
- ☒ A69-1601-56733
- ☒ A69-1601-56736

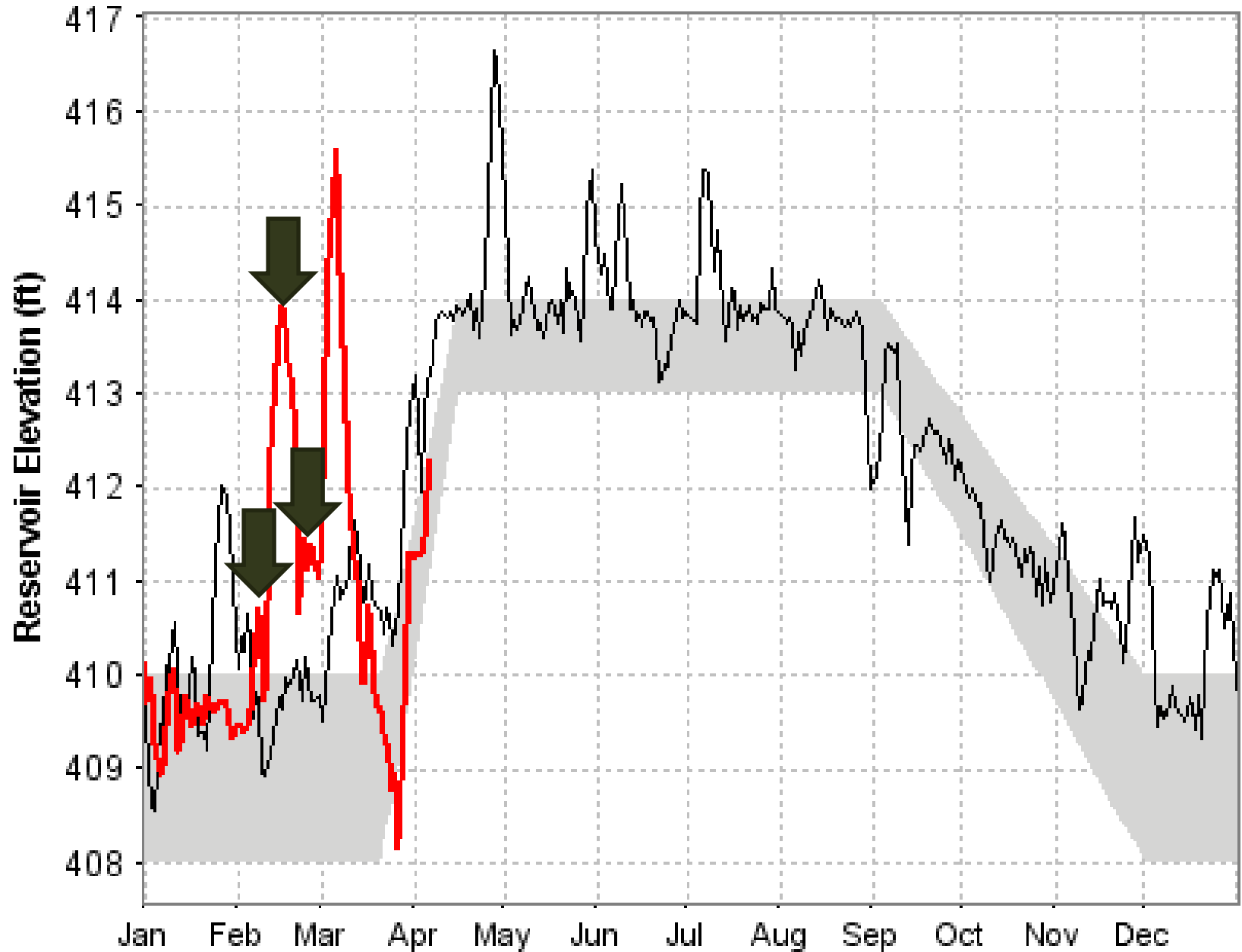
Results To Date

Mean Daily Detections Indian Creek



Mean Daily Detections Mouth of Yellow Creek





Normal Operating Zone — Last Year Observed Headwater

Observed Headwater

- 8 of 10 Tagged Carp Have Been Detected at Indian Creek Receiver
- 9 of 10 Tagged Carp Have Been Detected at Mouth of Yellow Creek
- Carp Appeared to Over-winter in Indian Creek
- Pulses in Current Appeared to Trigger Movement Between Indian and Yellow Creeks
- Shortest Time Between Detection of a Carp at Indian and Yellow Creeks was 8 Hours 49 Minutes

Future Work

- Continue to Download and Analyze Receiver Data
- Continue to Tag Fish During Cool Water (50-60°F) Periods
- Continue to Track Asian Carp Movement and Passage Through Lock & Dams
- Possibly Add More Receiver Sites

Questions

