

Identifying Invasive Carp Spawning Locations Through Statewide Larval Fish Surveys

**Quenton Fontenot¹, Shasta Kamara¹, April Simmons²,
Robby Maxwell³, and Rob Bourgeois³**

¹Nicholls State University

²MI Department of Natural Resources

³LA Department of Wildlife and Fisheries



Invasive Carp

- Adults in LA
- Potential to alter river ecology
- Location of preferred spawning habitats may aid future eradication efforts



2013-14 LDWF Statewide Larval Fish Survey



Inland Fisheries personnel

3 samples at each site (both banks and middle)

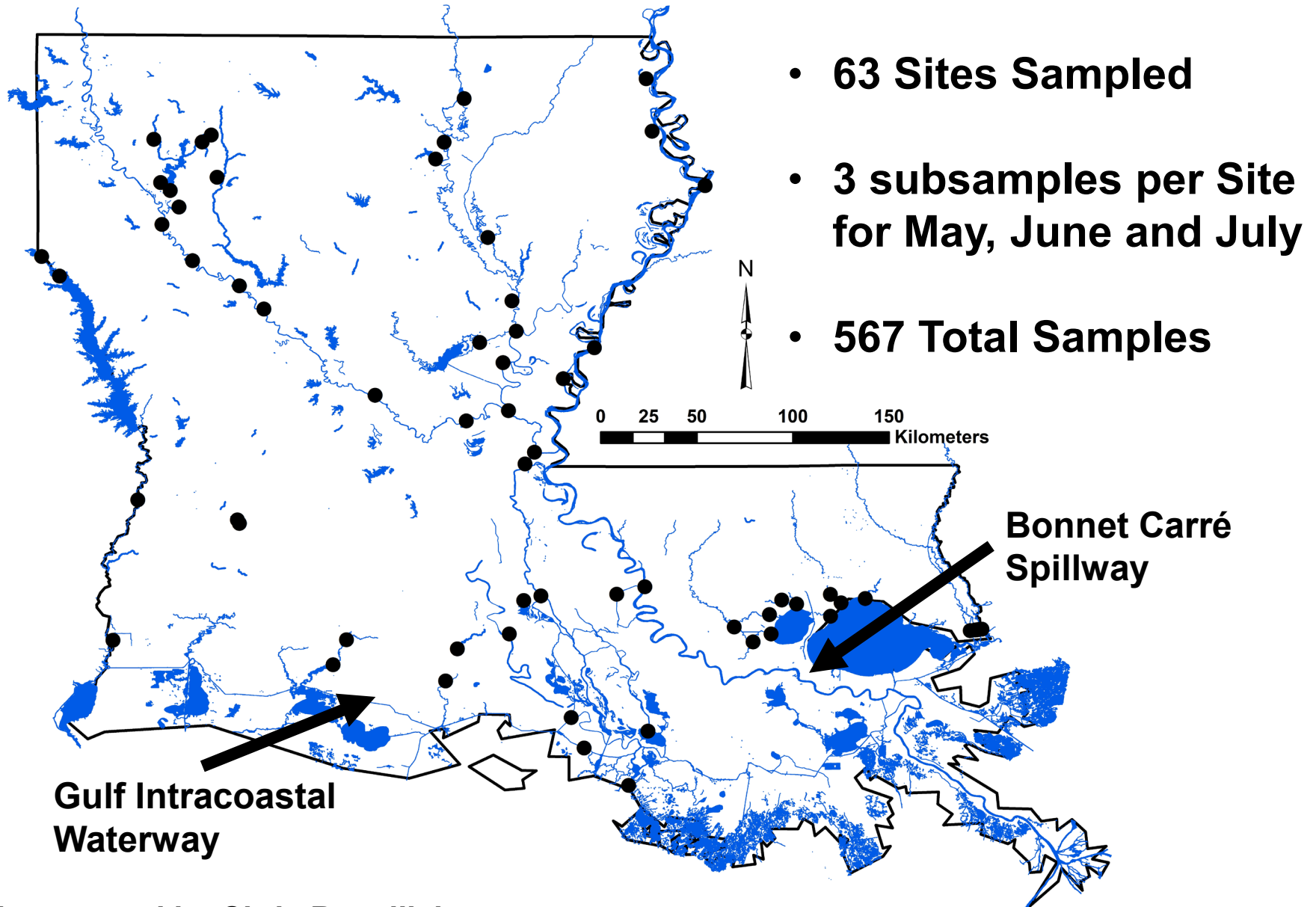
Target sample duration = 600 seconds (10 minutes)

Larvae Identified and Enumerated

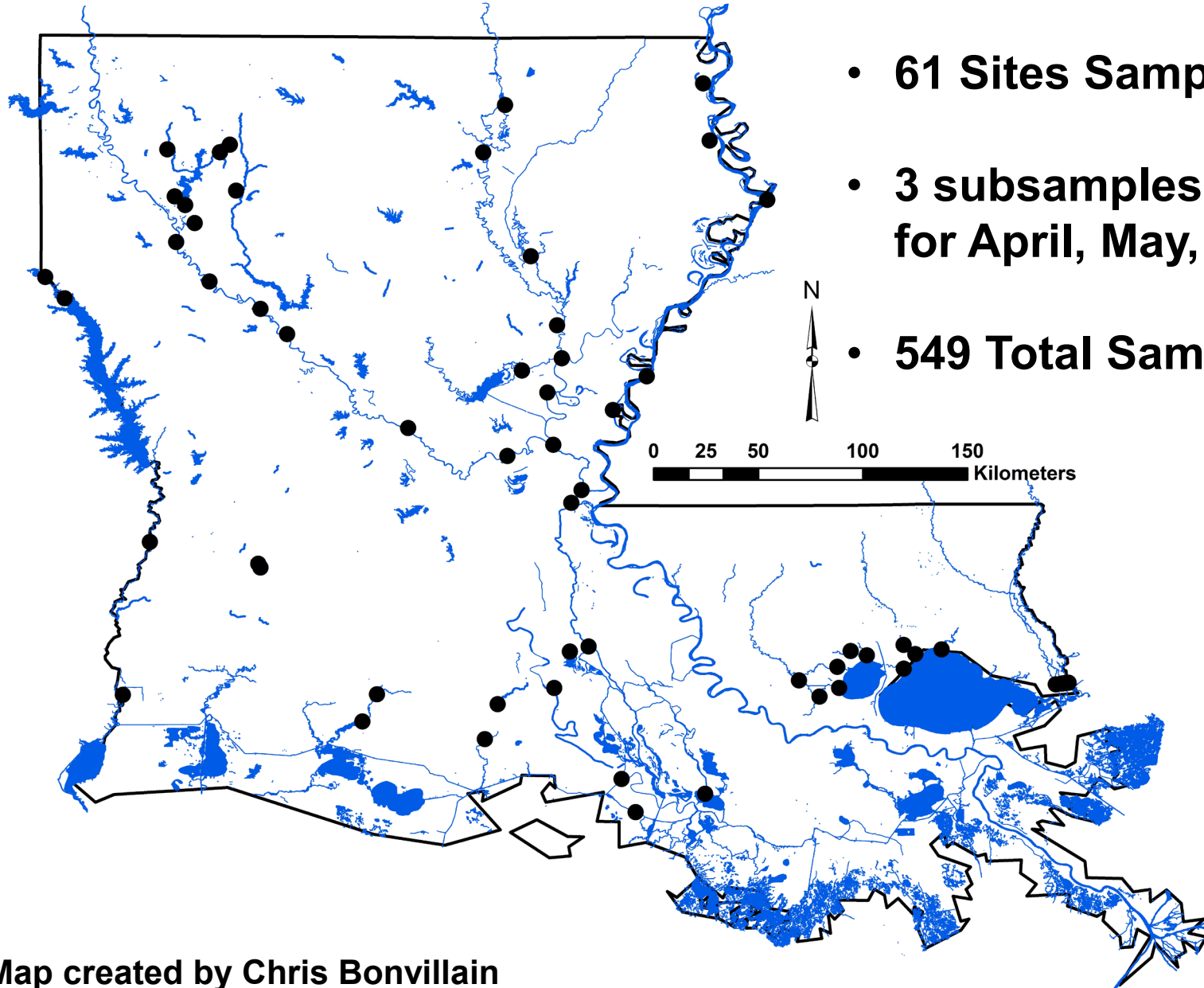
- Larvae identified to at least family
- Cyprinids delineated as *not invasive carp* or as *invasive carp* (Silver, Bighead, and Black all combined)



2013 Sample Locations

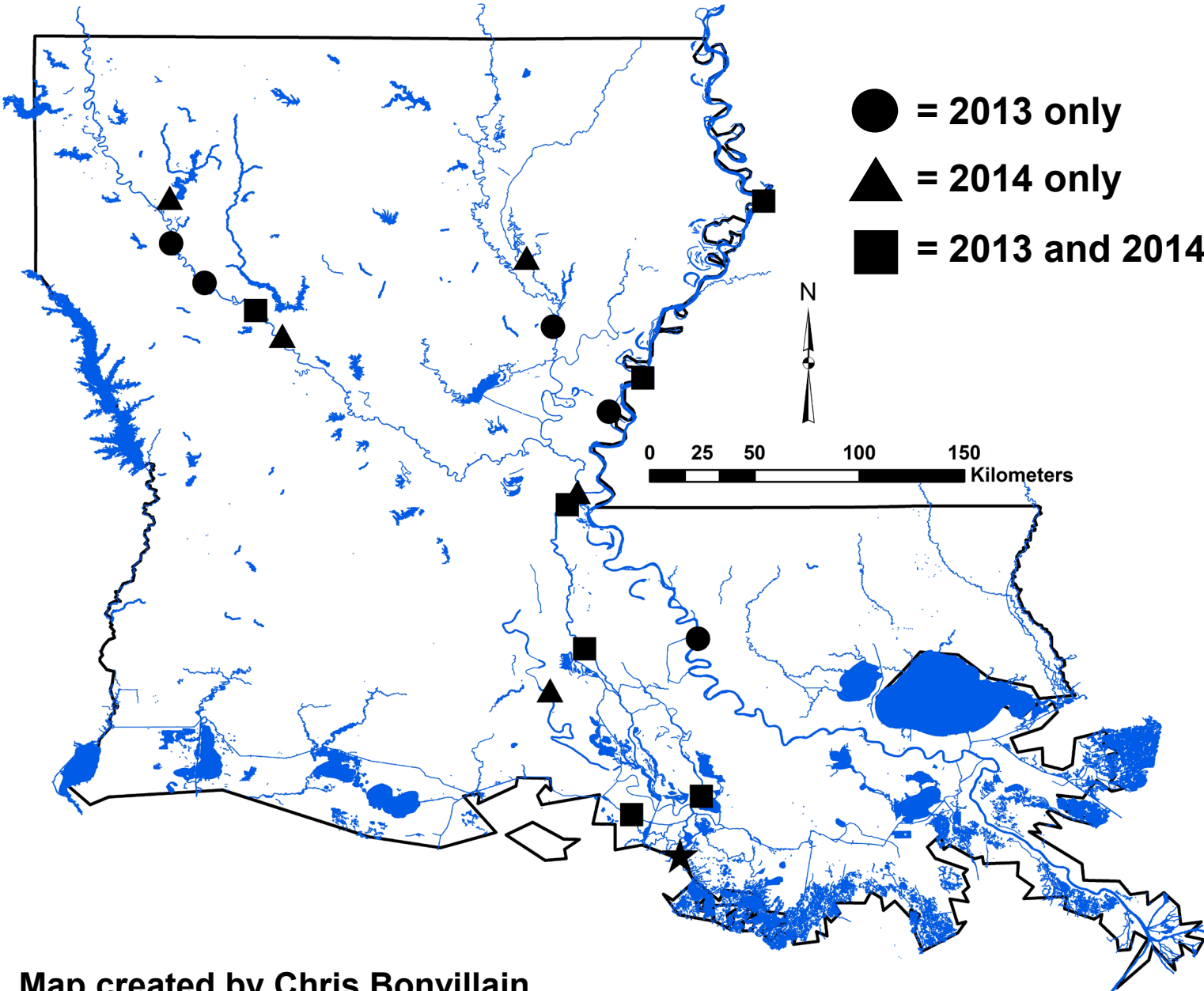


2014 Sample Locations



- 61 Sites Sampled
- 3 subsamples per Site for April, May, and June
- 549 Total Samples

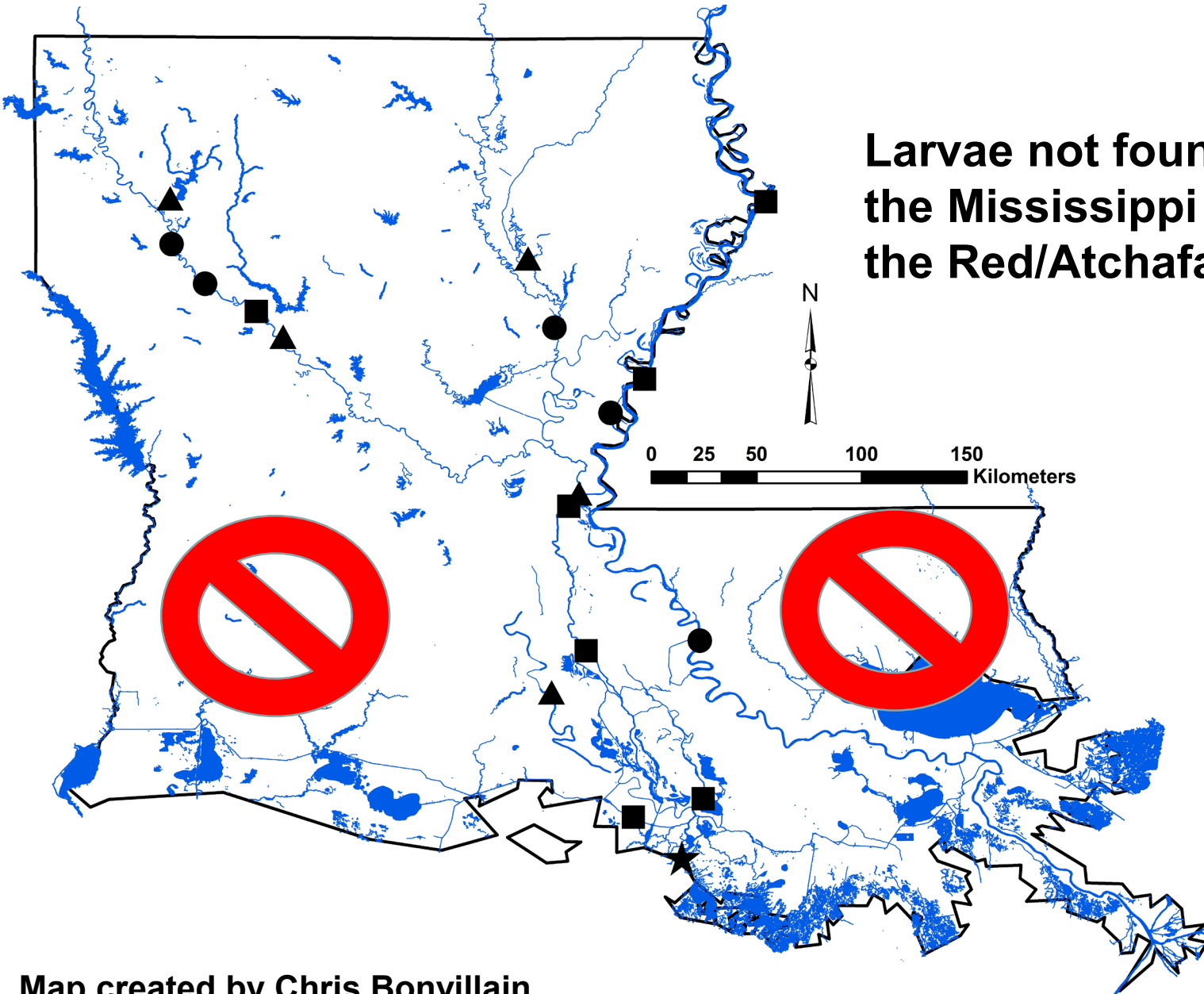
2013-14 Invasive Carp Locations



Map created by Chris Bonvillain

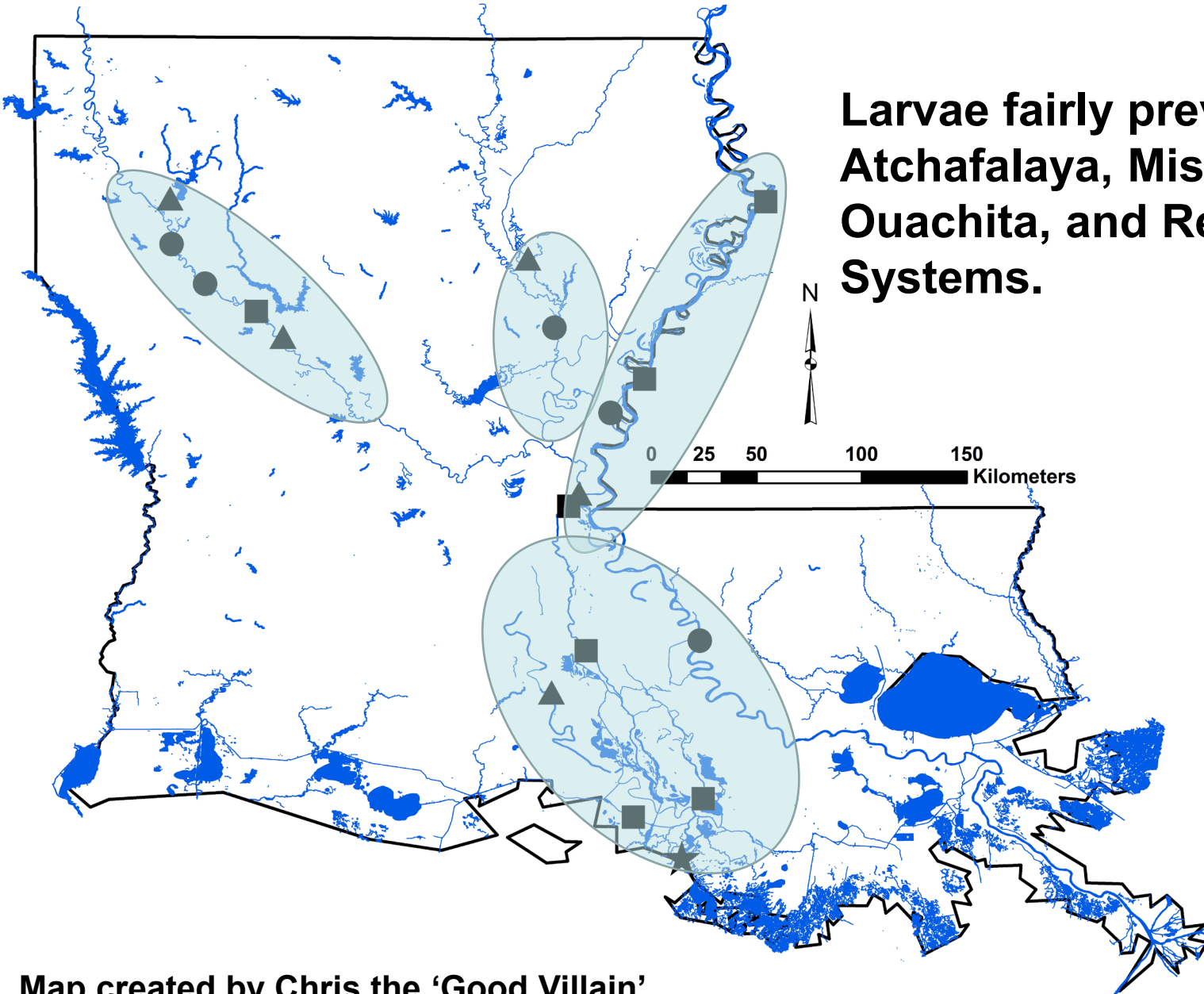
The Good

Larvae not found East of the Mississippi or West of the Red/Atchafalaya!



The Bad

Larvae fairly prevalent in the Atchafalaya, Mississippi, Ouachita, and Red River Systems.



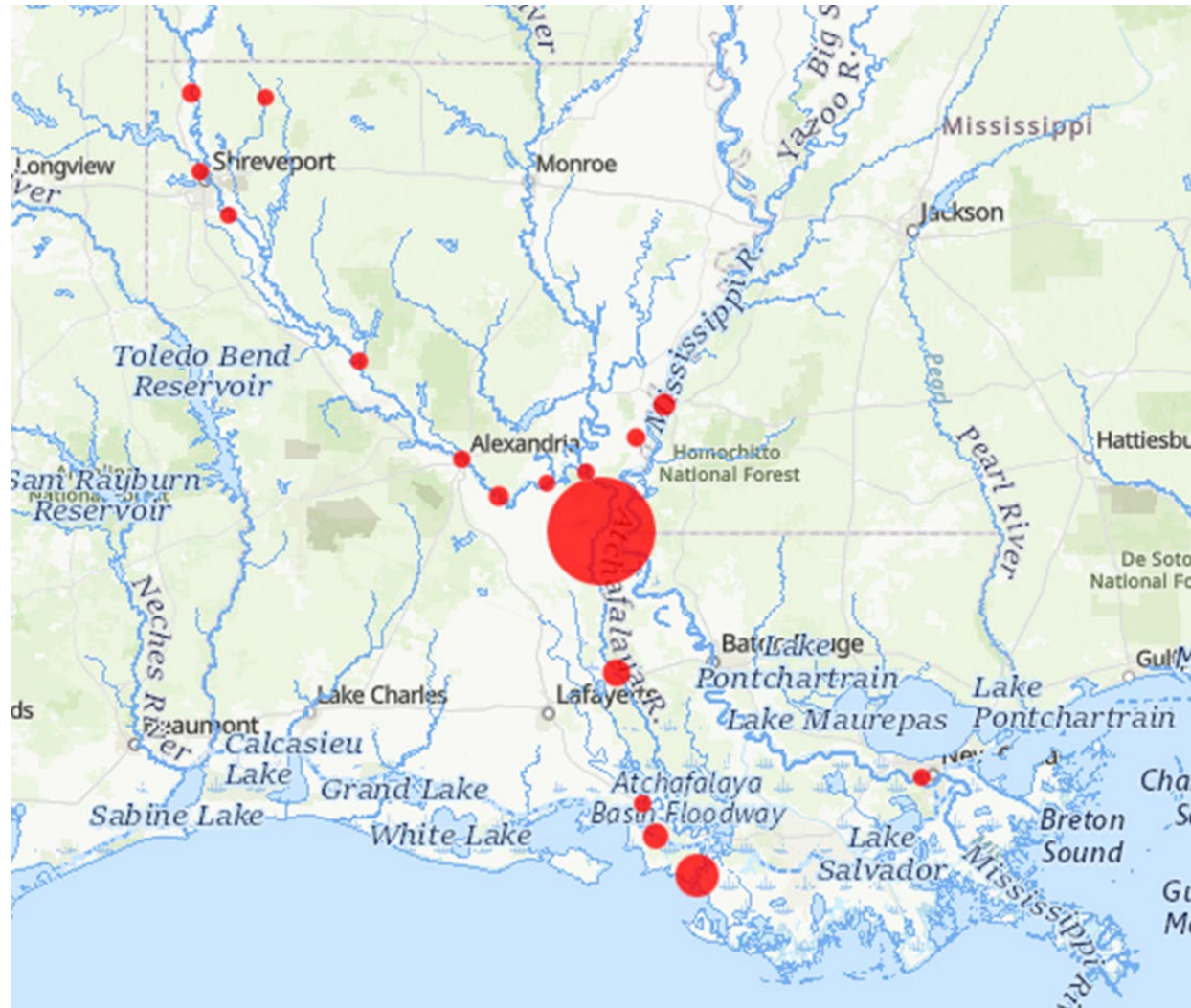
The Ugly

We confirmed that invasive carp are reproducing in Louisiana.

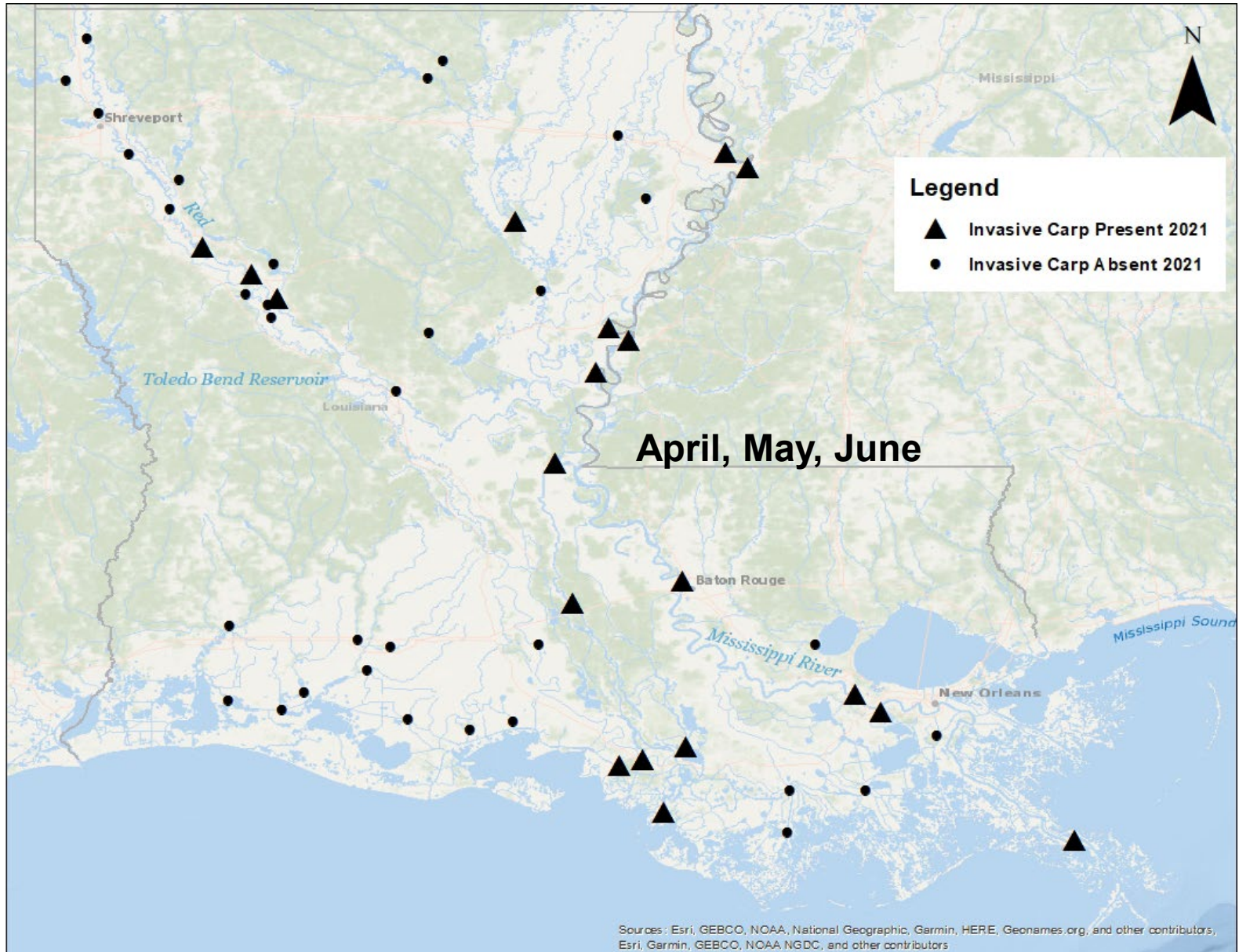


2019 Collections

- **Sampled in May and June**
- **273 Total Samples**
- **Still contained to Atchafalaya / Mississippi / Red River Systems**



2021 Collections



Larval Distribution Summary

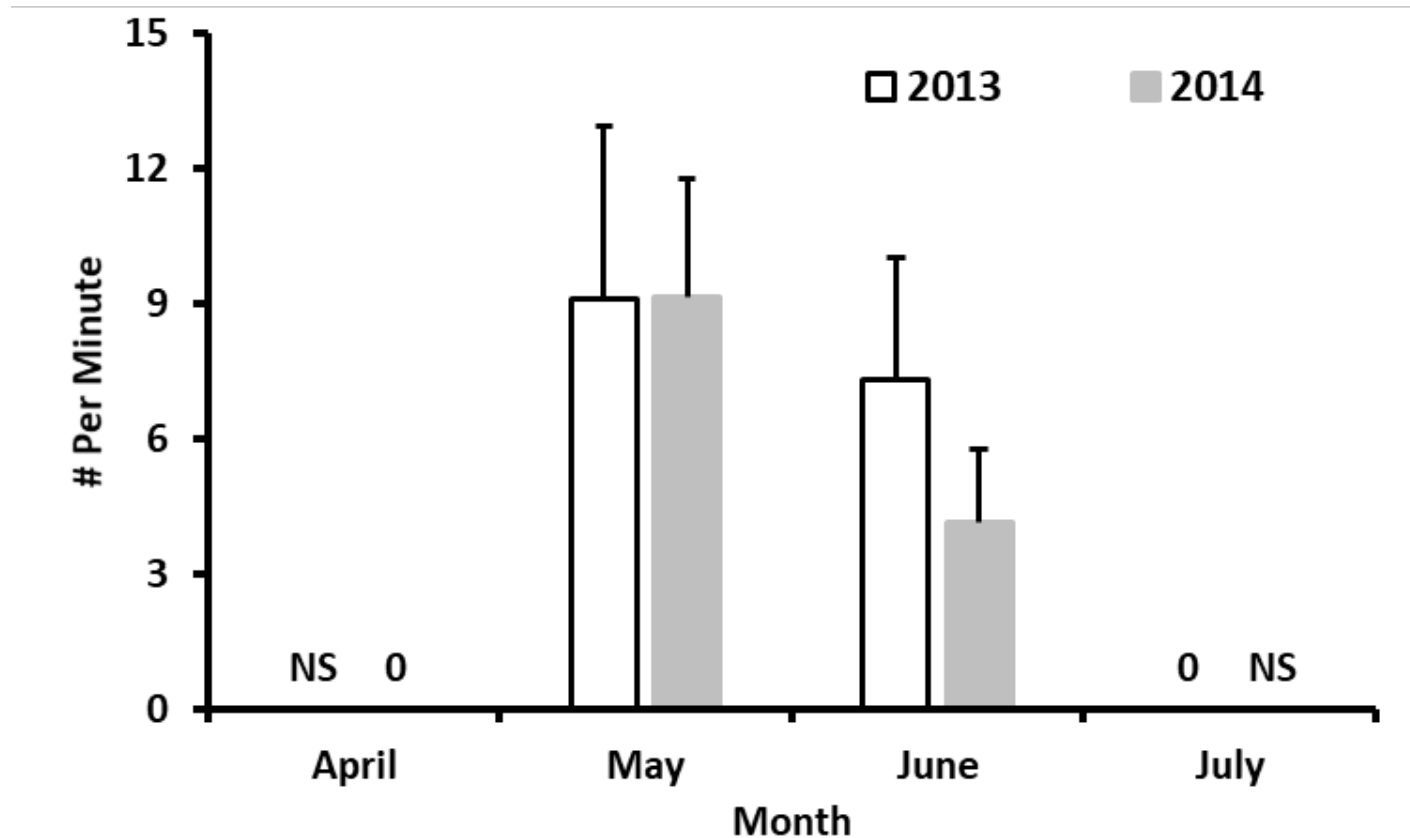
- **Have not been collected beyond the Atchafalaya/Mississippi/Ouachita/Red River systems for 2013, 2014, 2019 or 2021**
- **Samples for 2022 are currently being sorted and identified.**

Relative Abundance

- **For samples that contained at least one Invasive Carp:**
 - **Calculated number of individuals collected per minute (CPUE)**
 - **Calculated mean (\pm SE) CPUE for each month for each year**
 - **Used as a measure of relative abundance**

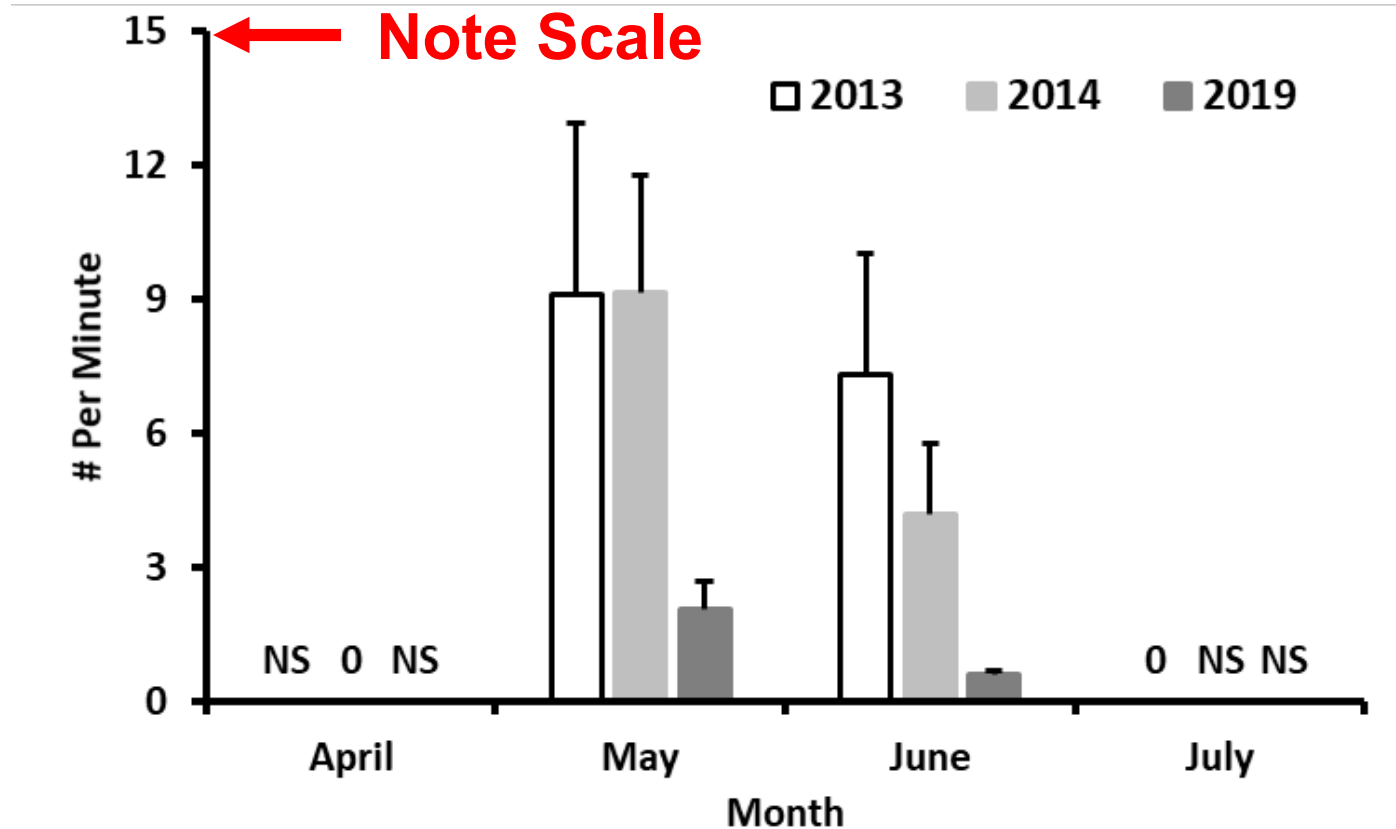
Invasive Carp CPUE 2013-14

(Only for samples that contained at least one Invasive Carp)



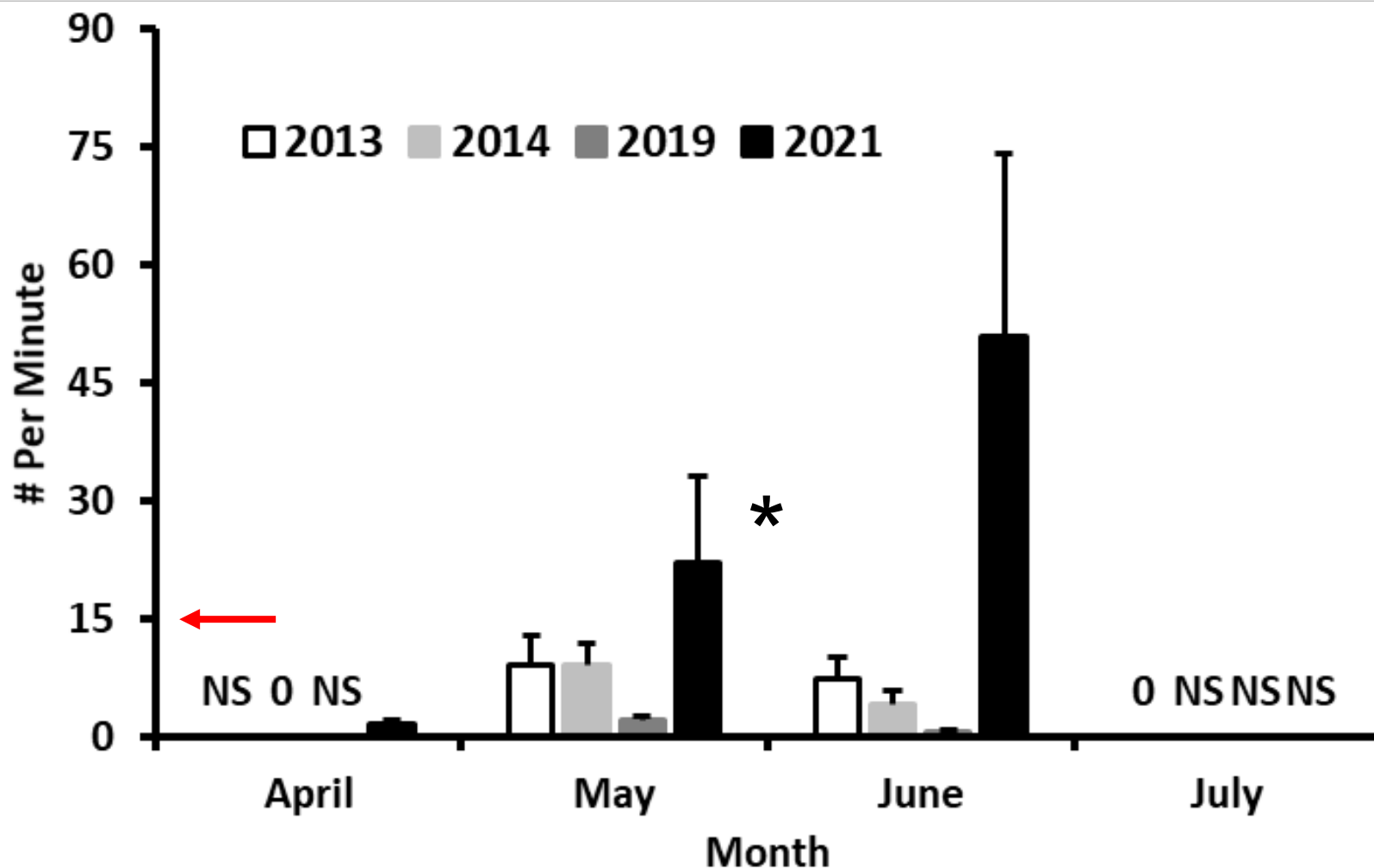
I.C. CPUE 2013, 2014, 2019

(Only for samples that contained at least one Invasive Carp)



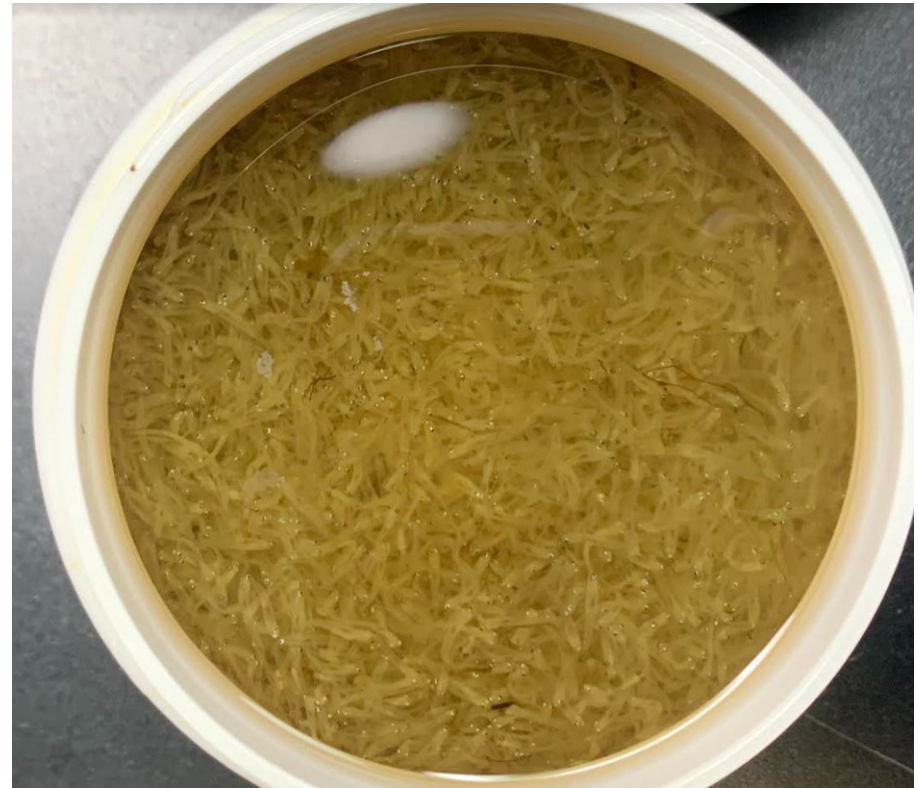
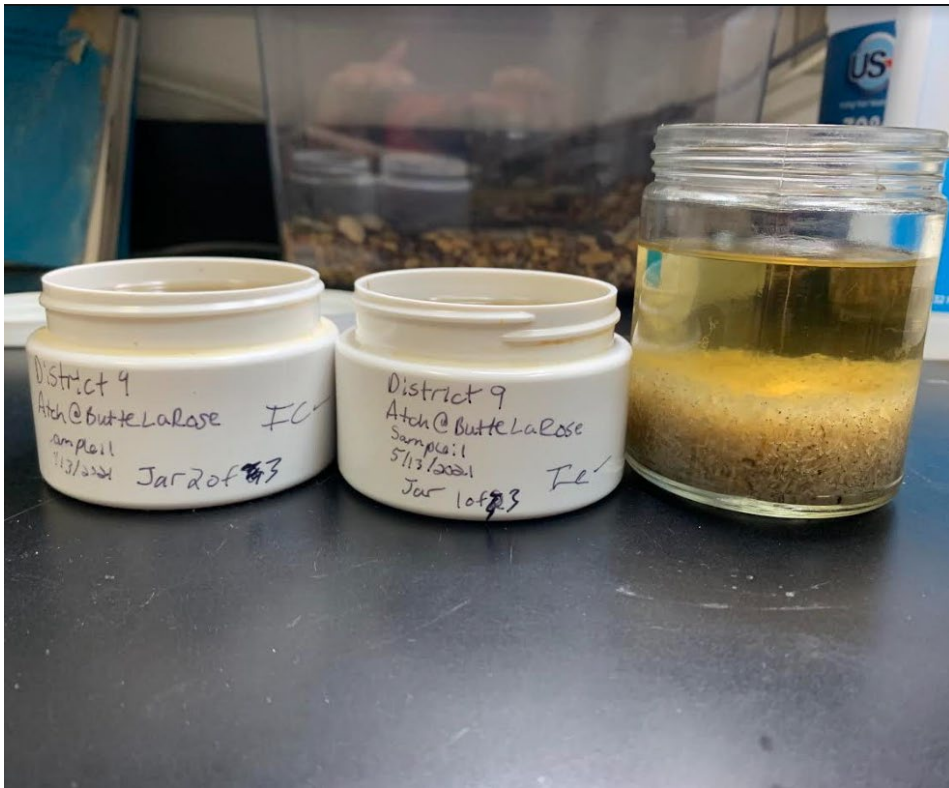
I. C. CPUE All Years

(Only for samples that contained at least one Invasive Carp)

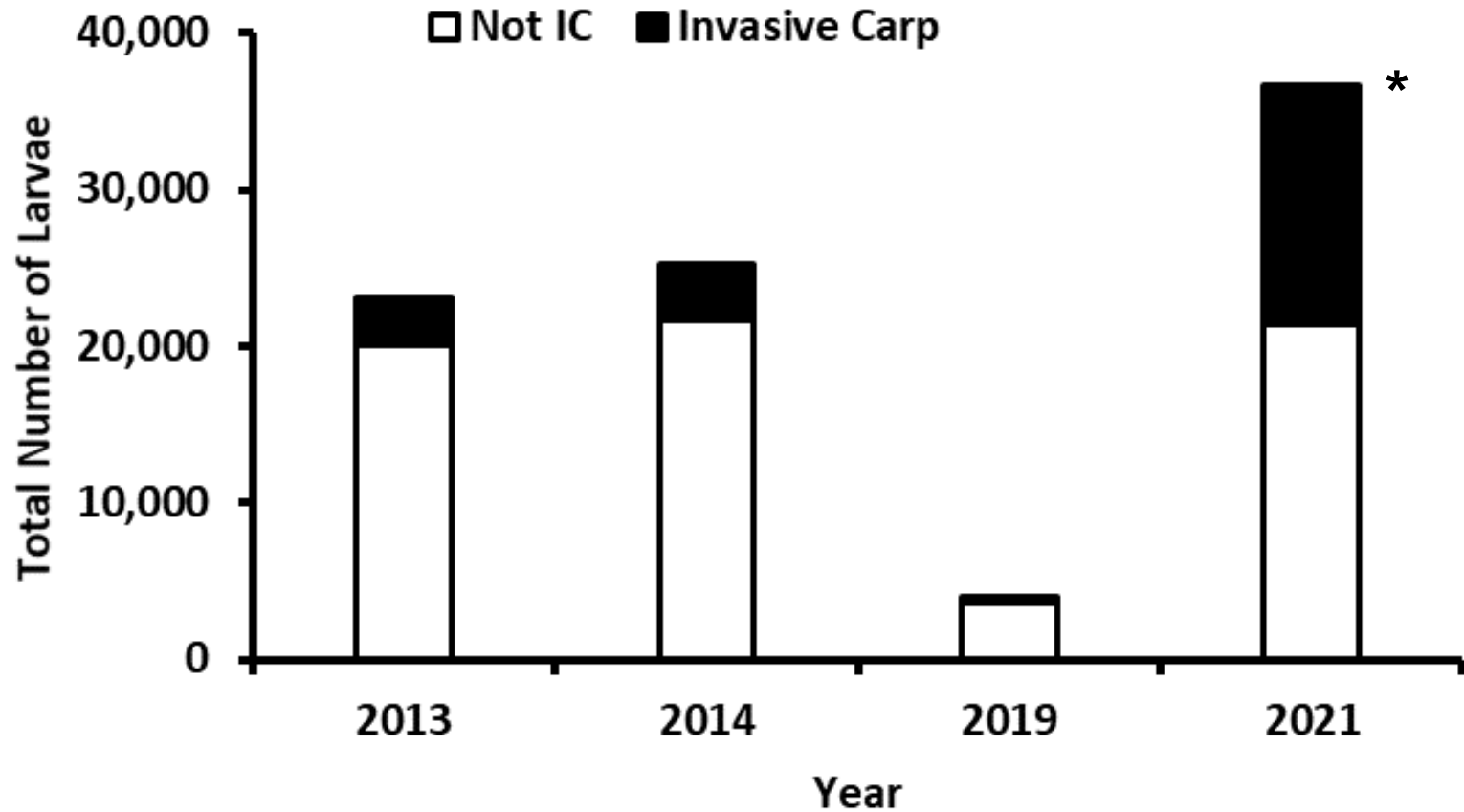


* Not including one sample

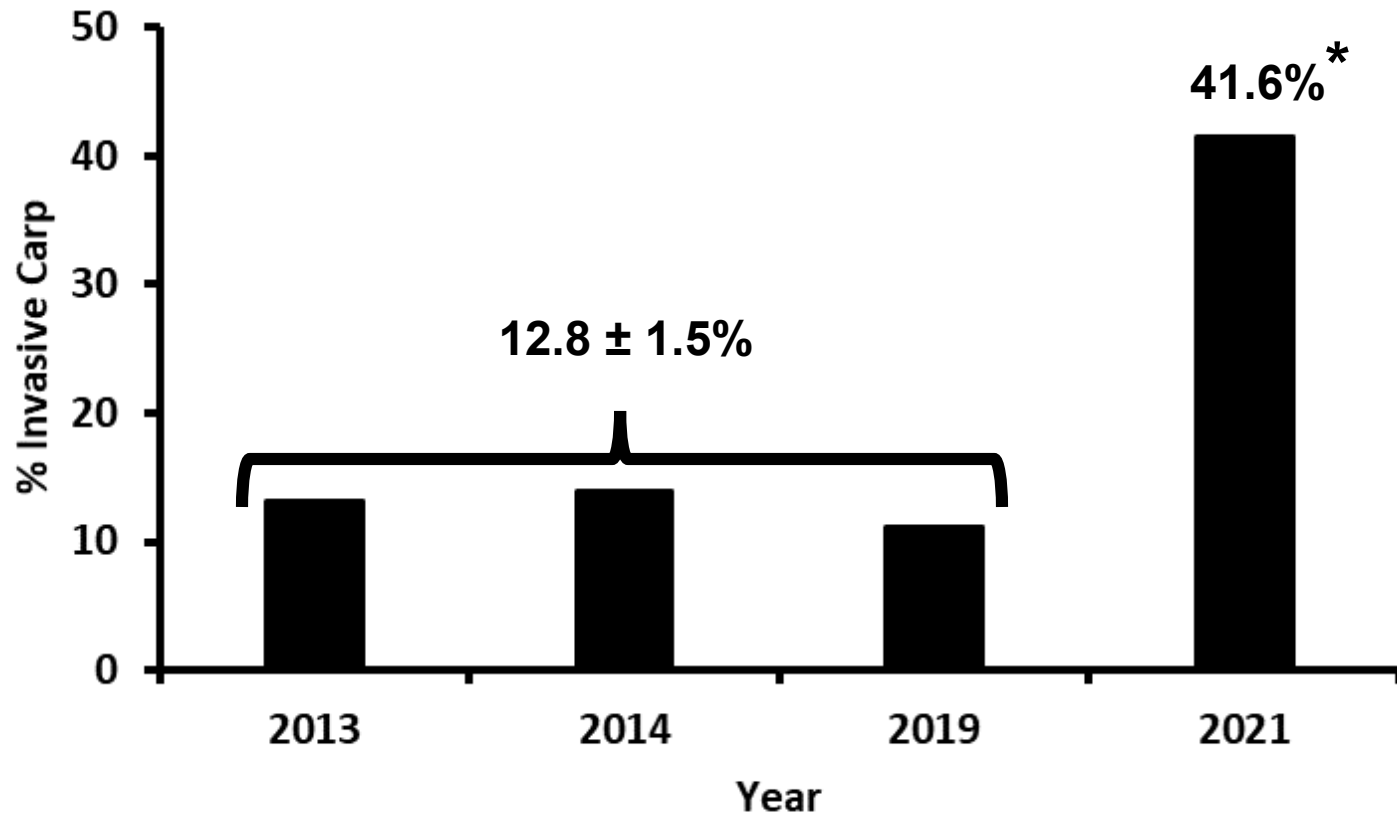
May 13th; 1 Sample From Butte LaRose



Invasive Carp as Part of the Total Statewide Catch



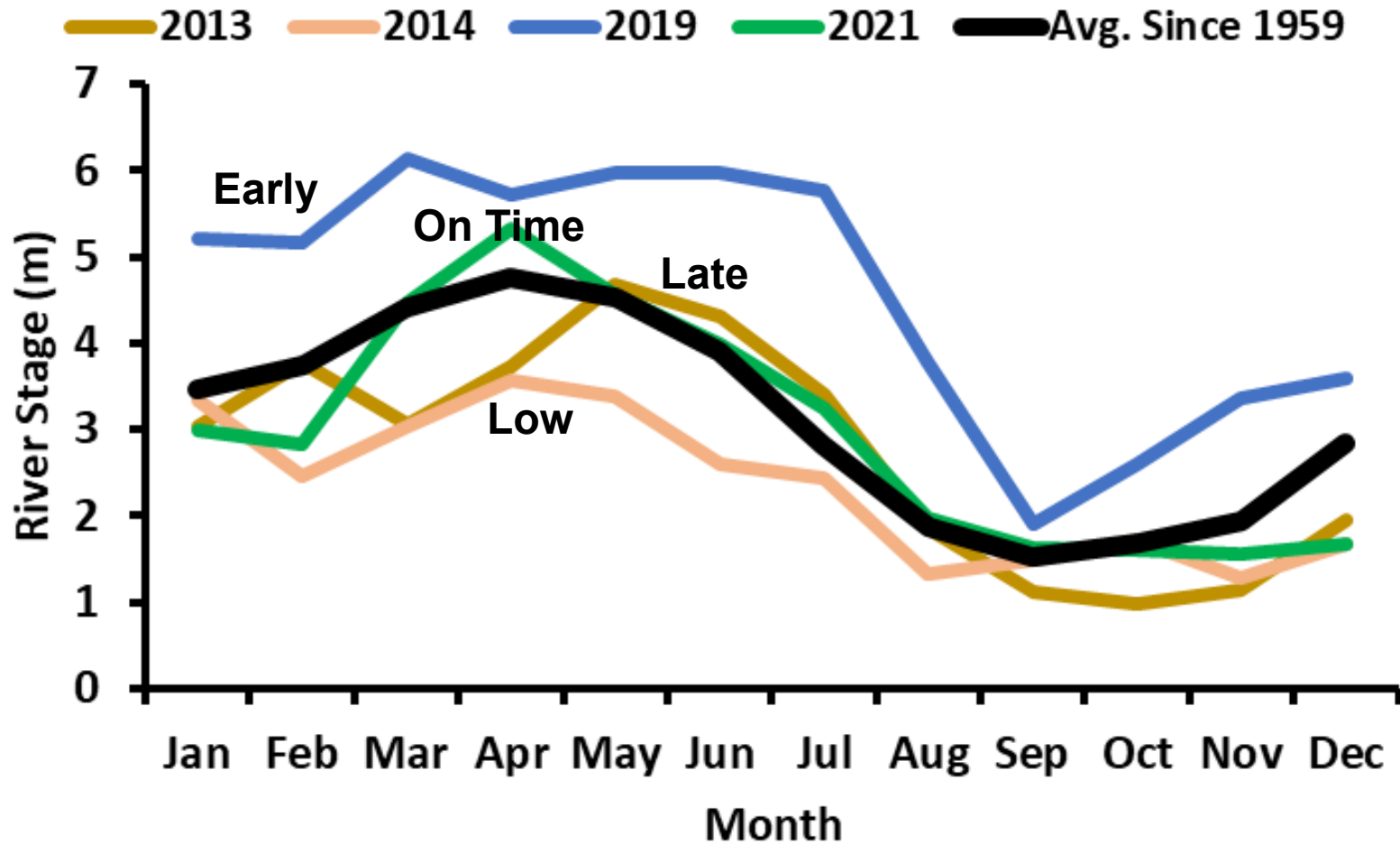
Percent of Total Statewide Catch



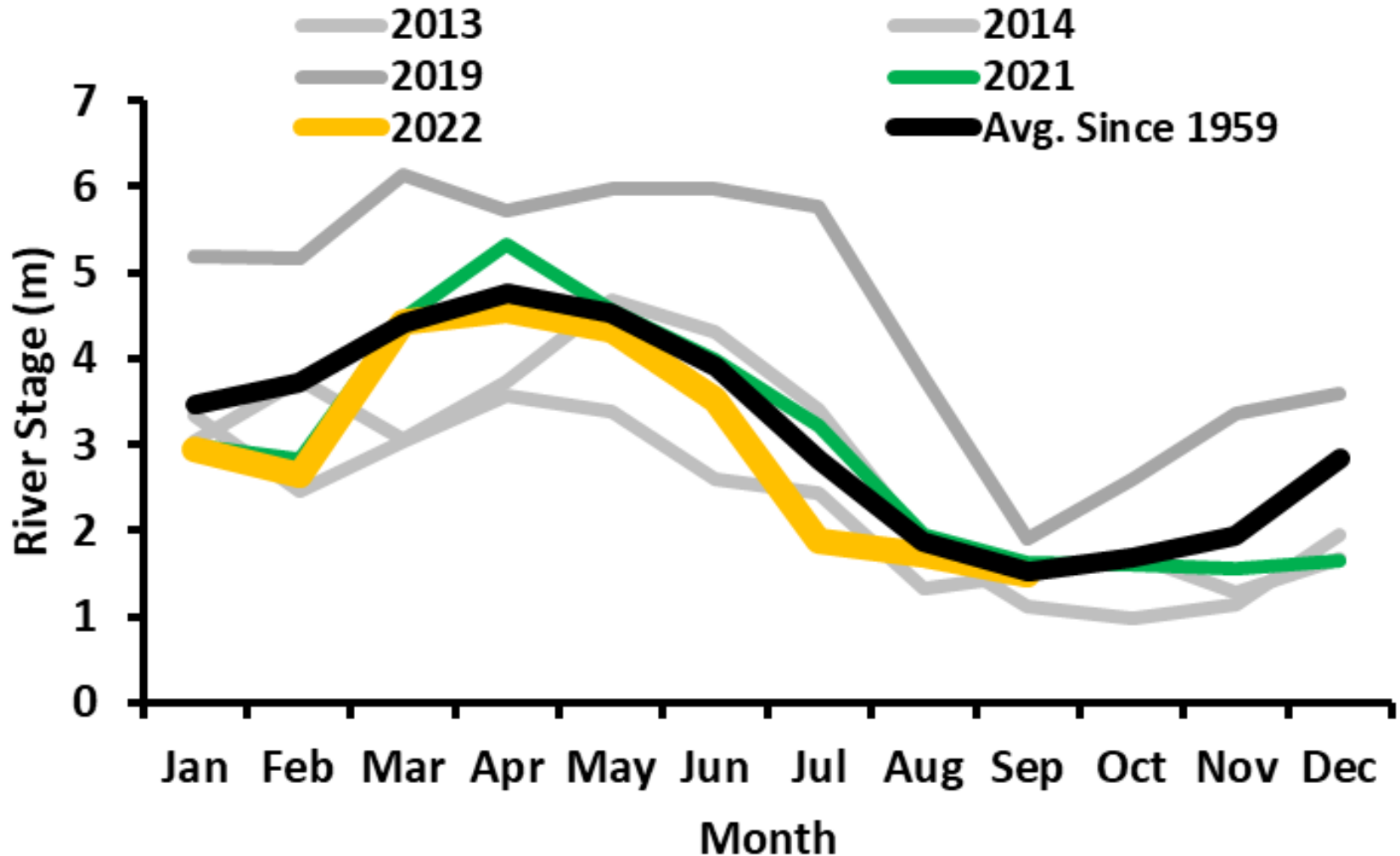
Obvious Disappointment



Flood Pulse Effect?



2022 Collections?



Summary

- **Reproduction appears to be contained in the Atchafalaya / Mississippi / Ouachita / Red River systems**
- **Relative abundance can fluctuate and can dominate larval fish assemblage**
- **Flood pulse *might* influence our abundance estimation**

Acknowledgments

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- **2021-22 funded through Mississippi River Basin 2020 Asian Carp Partnership Projects for USFWS Funding**
- **All LDWF Inland Fisheries Biologists that collected and transported the samples**
- **Nicholls State University**

