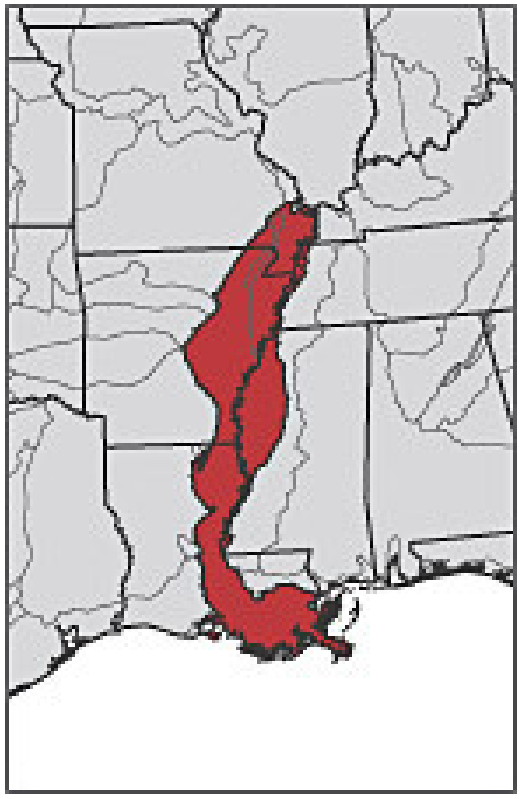
# Effects of Silver Carp Introductions on White Crappie and Largemouth Bass in Floodplain Lakes of the Yazoo River Basin, MS

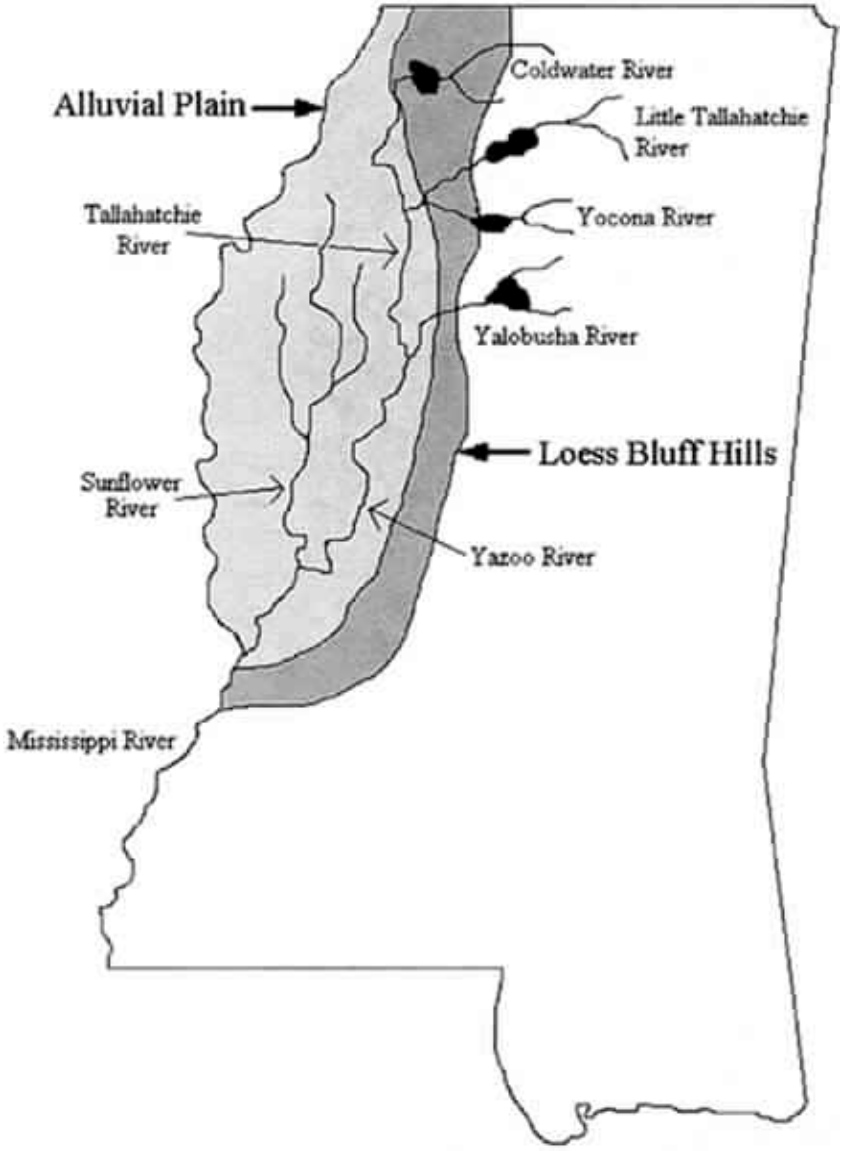
Nathan Aycock

MDWFP

# Yazoo River Basin (MS Delta)

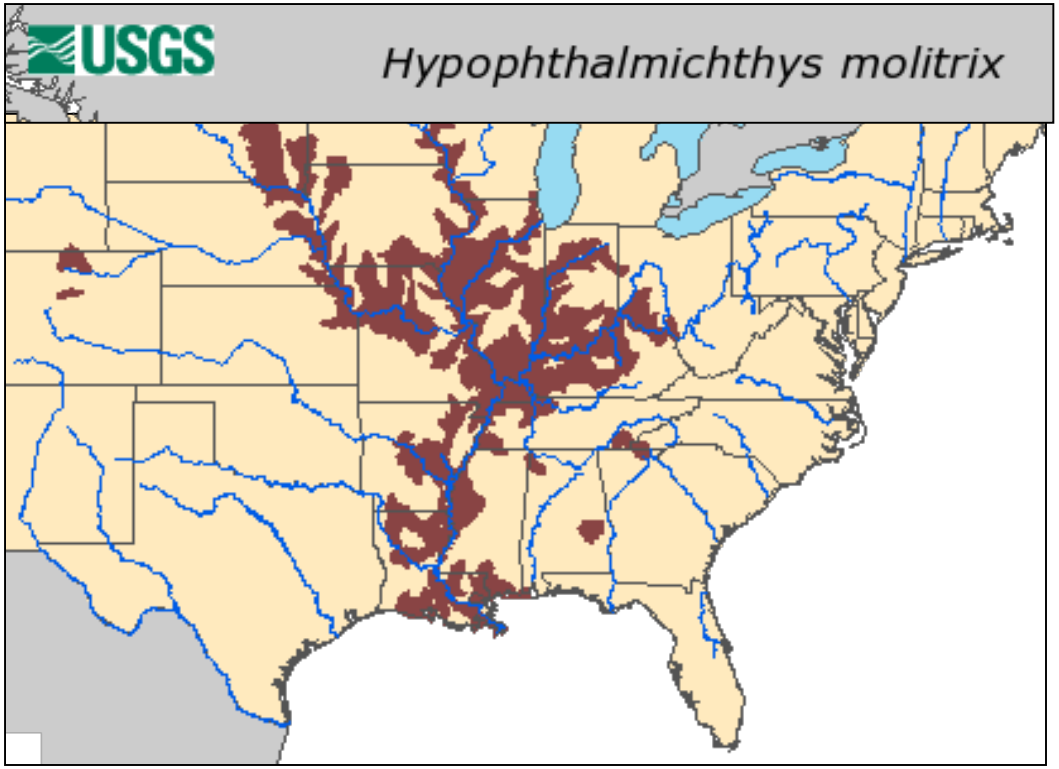
Mississippi River Alluvial Plain






Oxbow Lakes

# Silver Carp




# *Silver Carp – Hypophthalmichthys molitrix*

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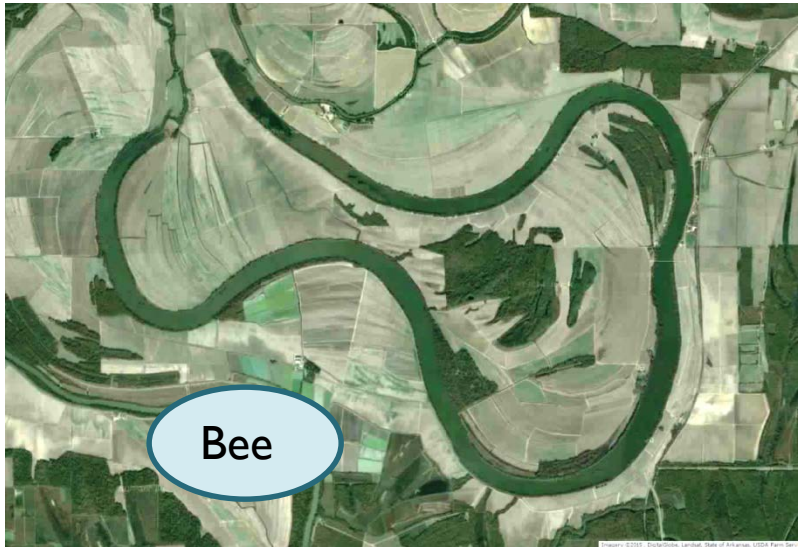
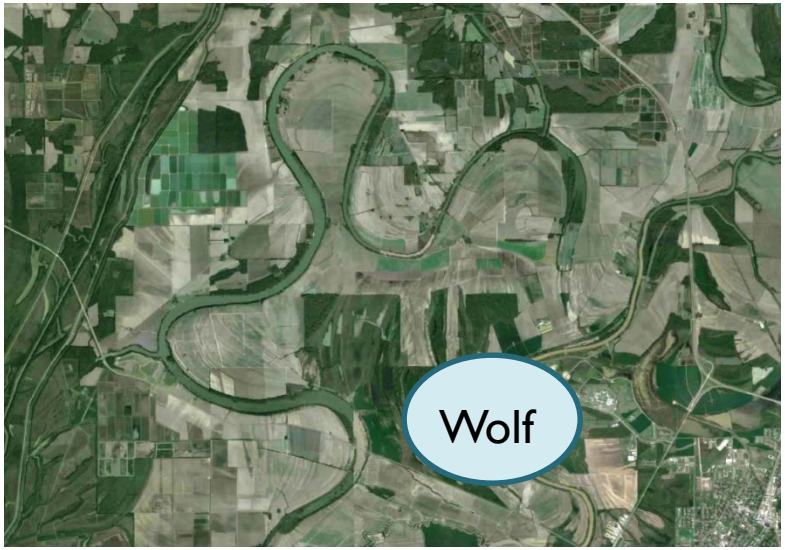
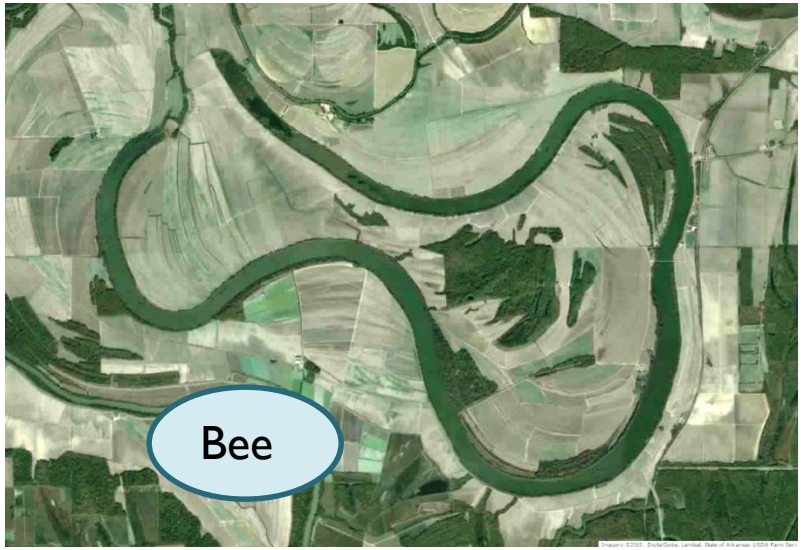

Bee


Wolf


Little Eagle


Belzoni
Cutoff

# Flood of 2011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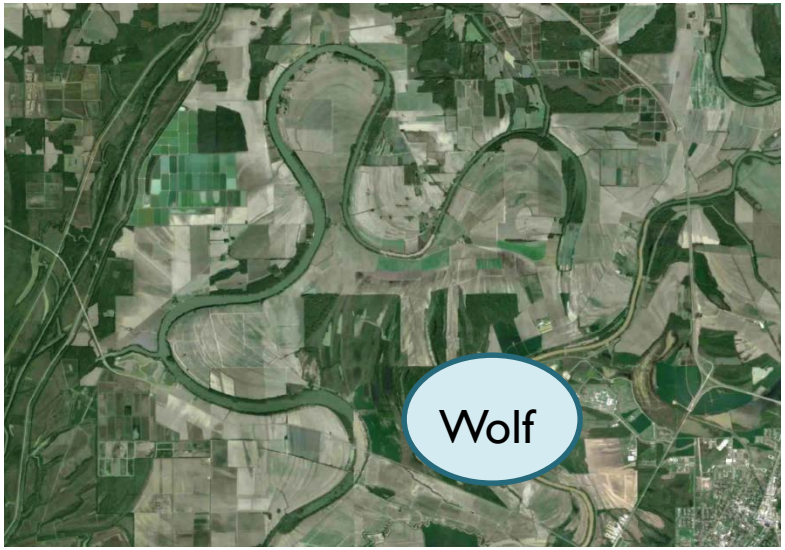
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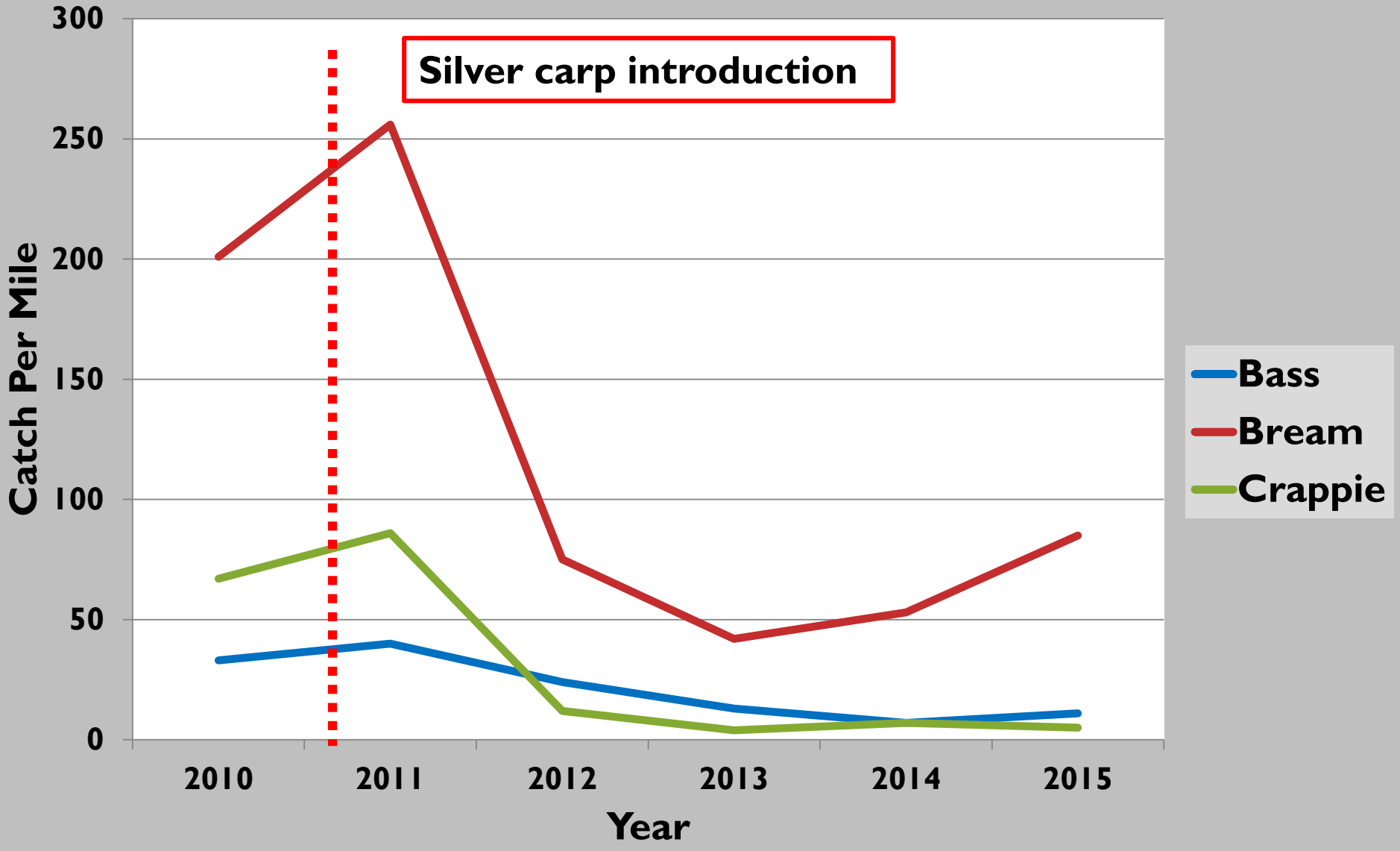
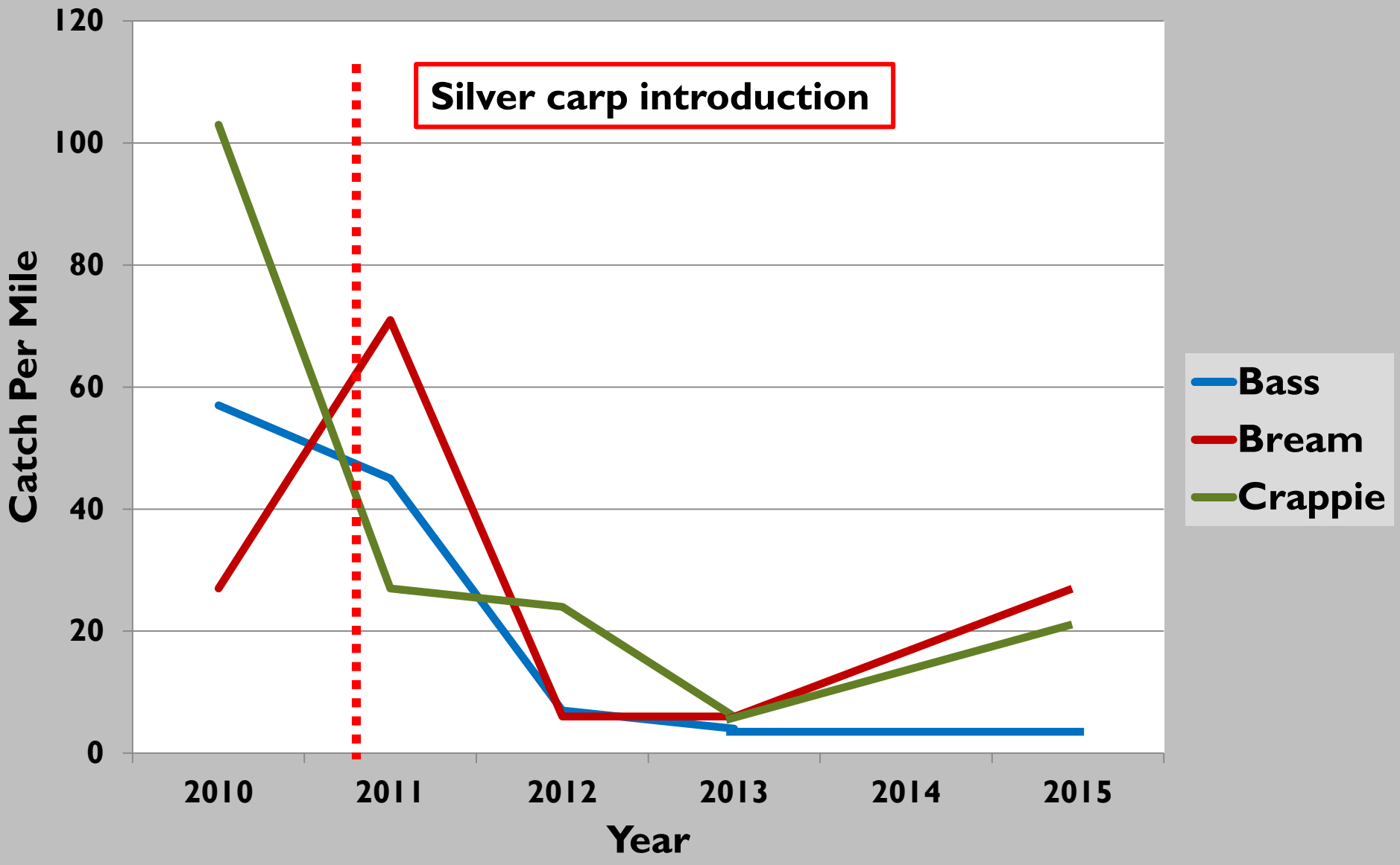
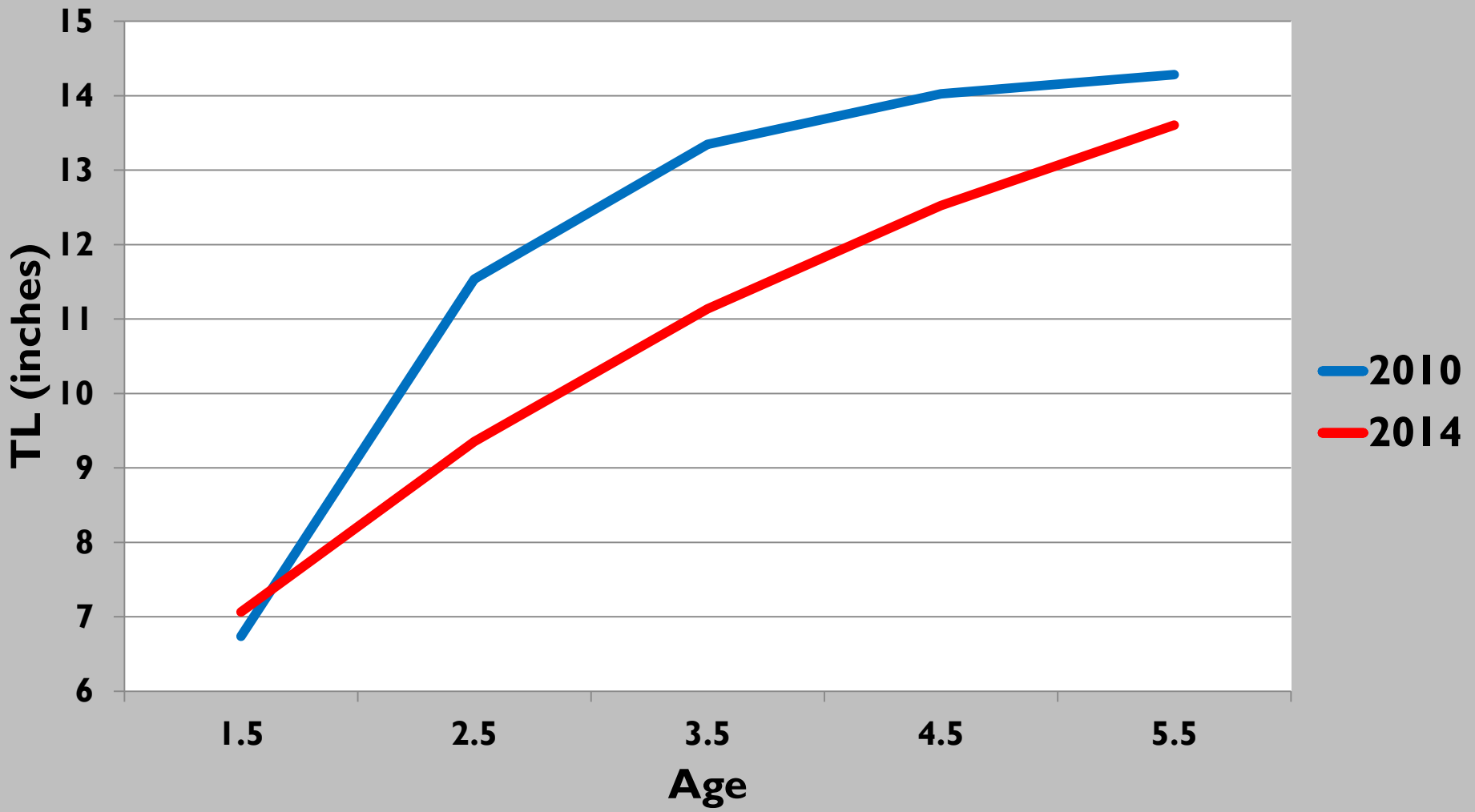
# Bee Lake – sport fish CPUE



# Wolf Lake – sport fish CPUE



# Bee Lake – crappie growth



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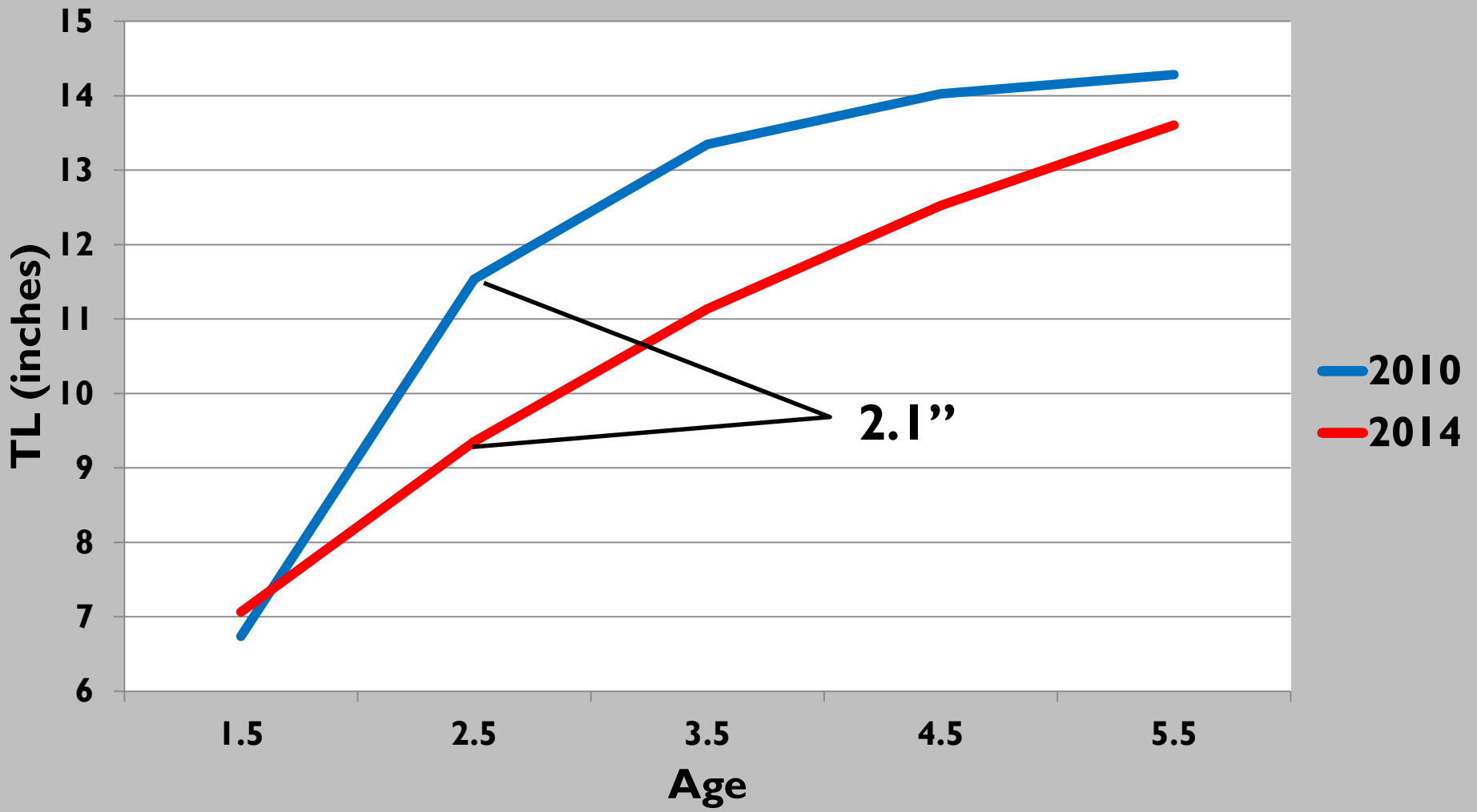

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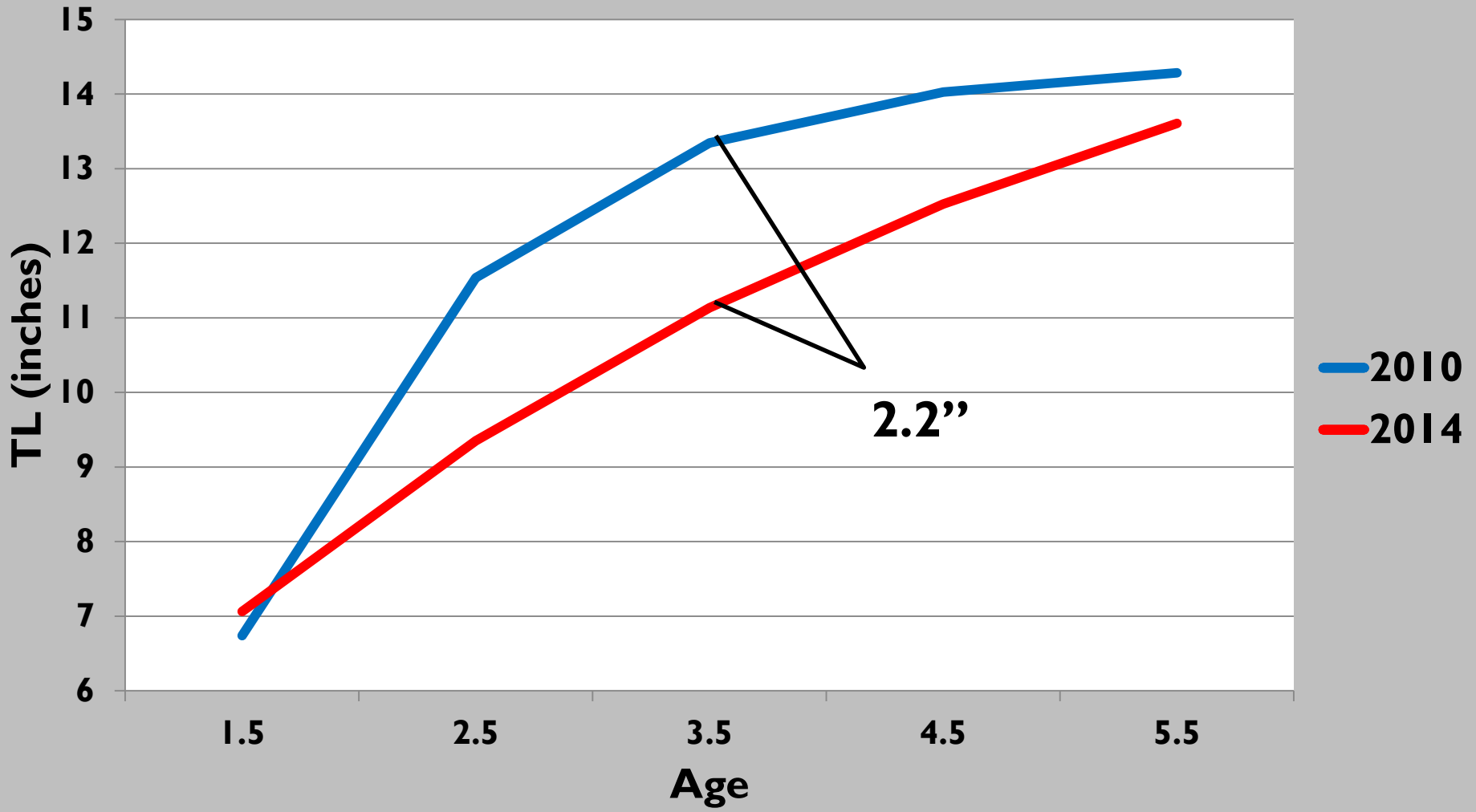

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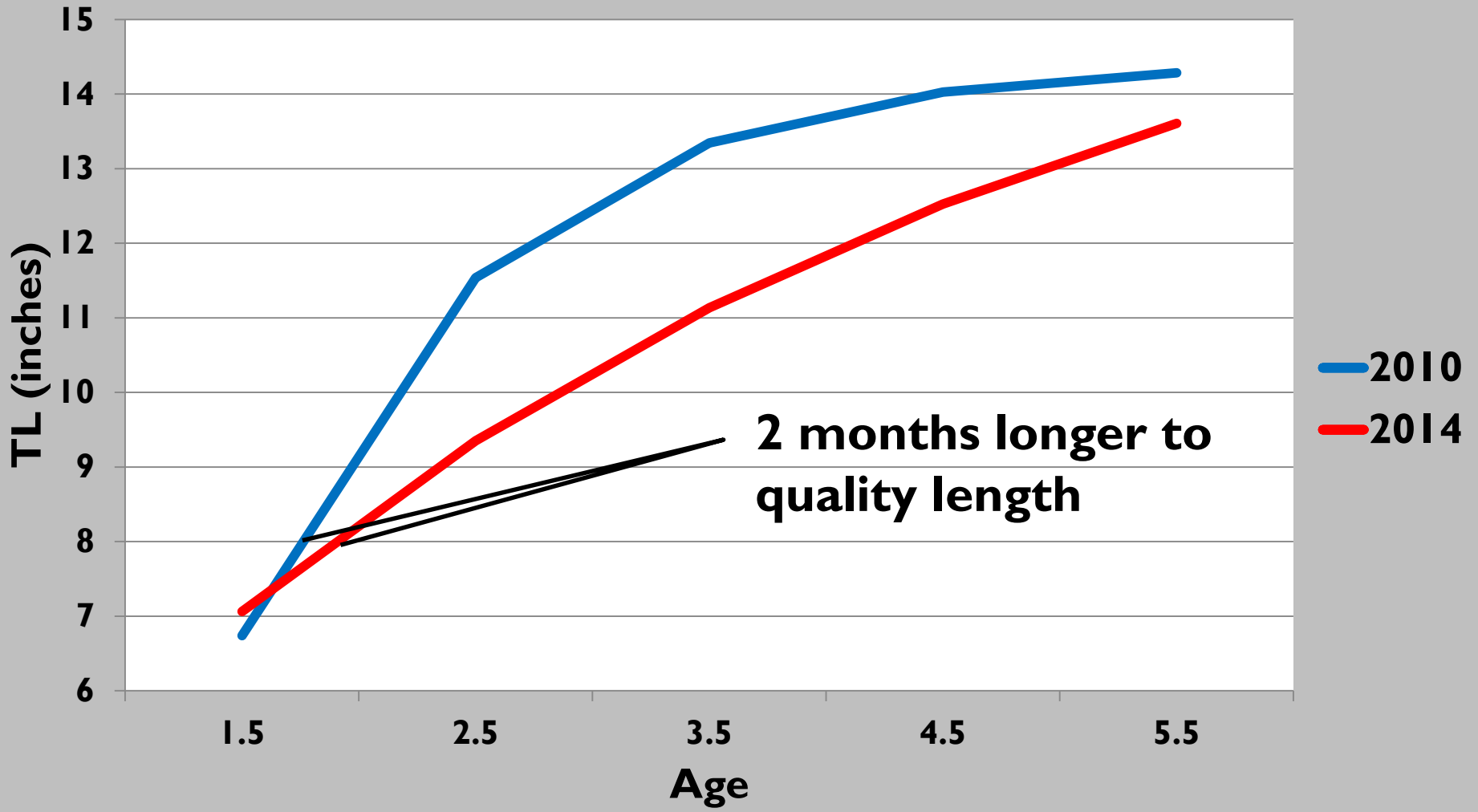

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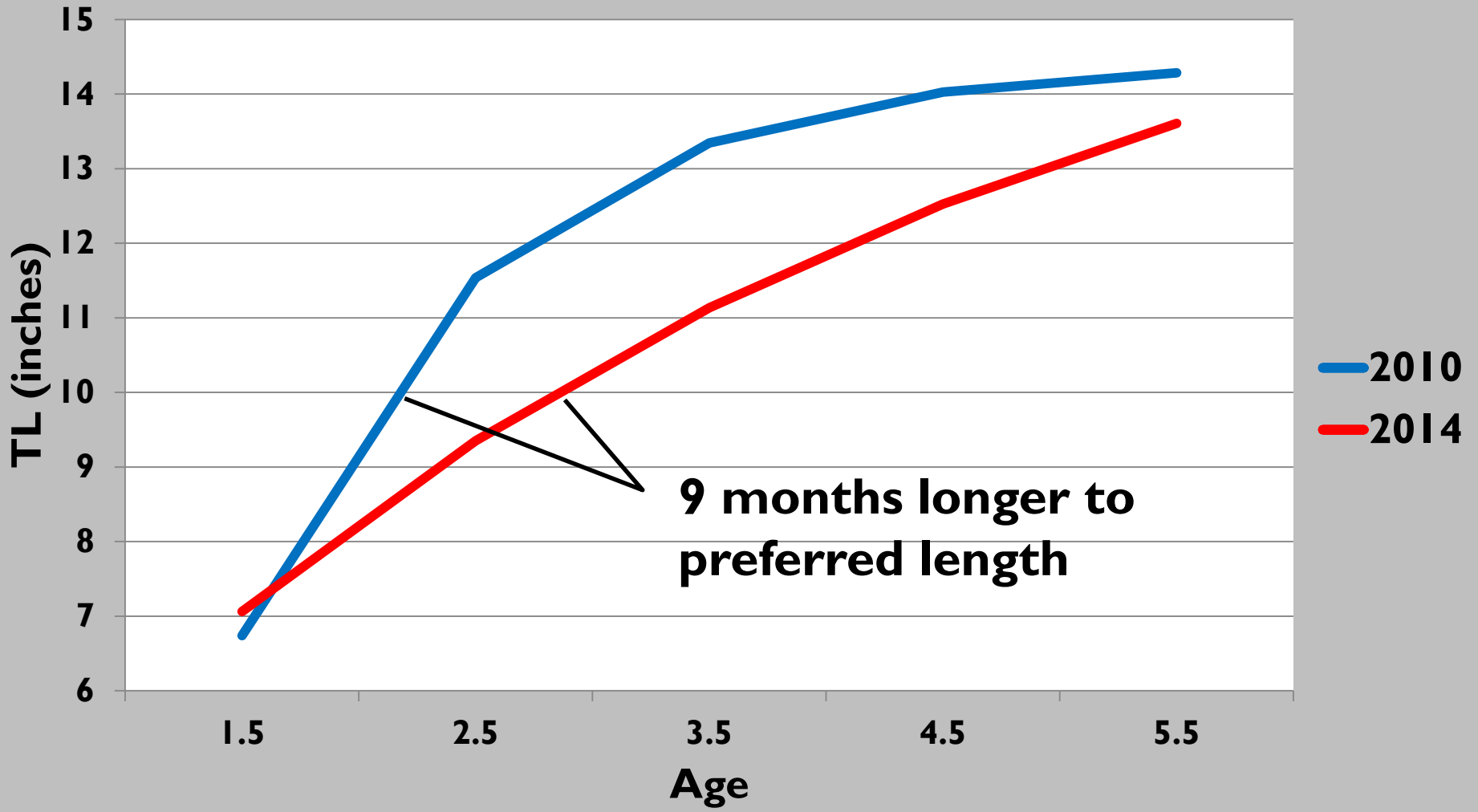

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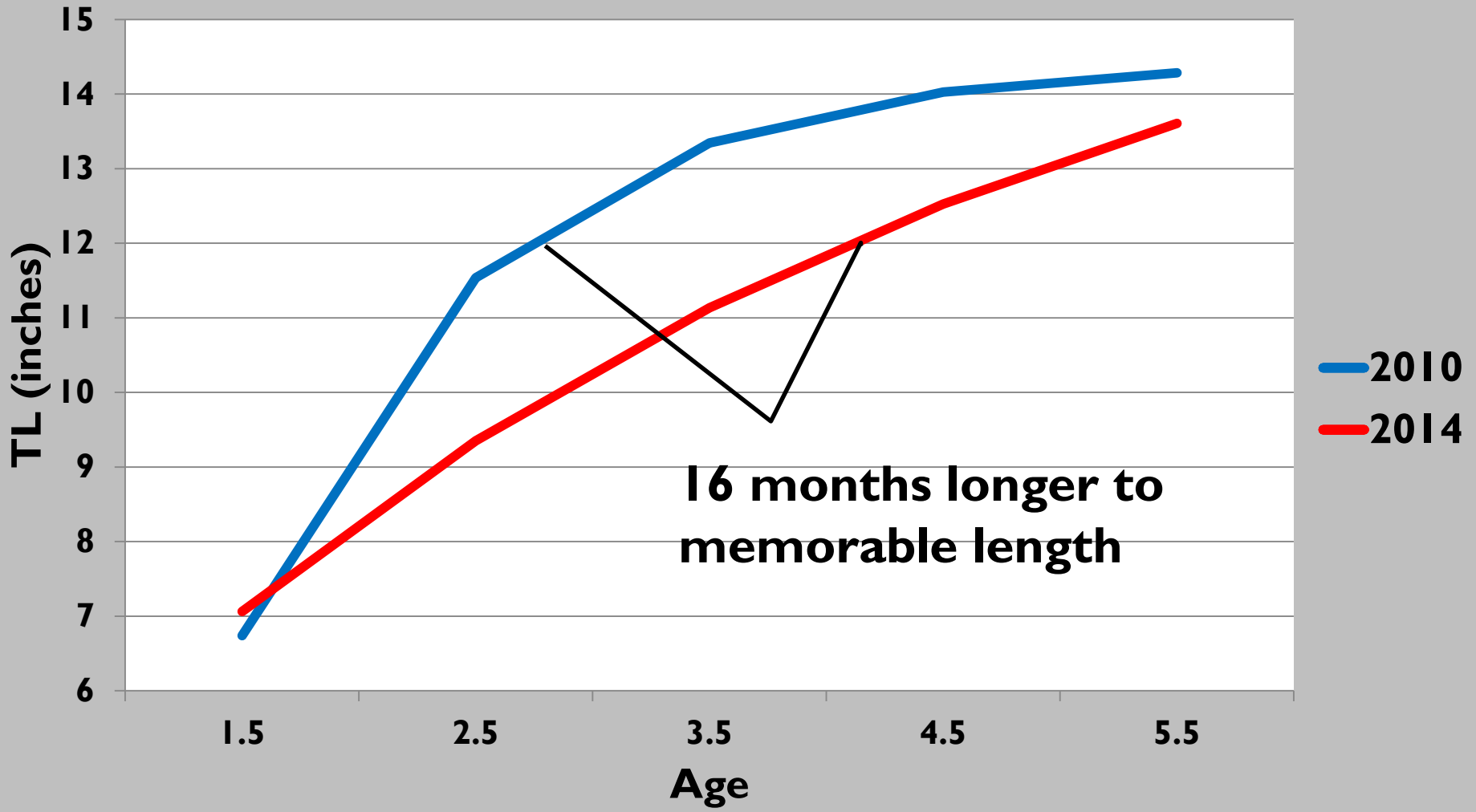
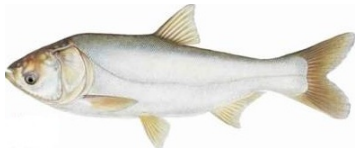
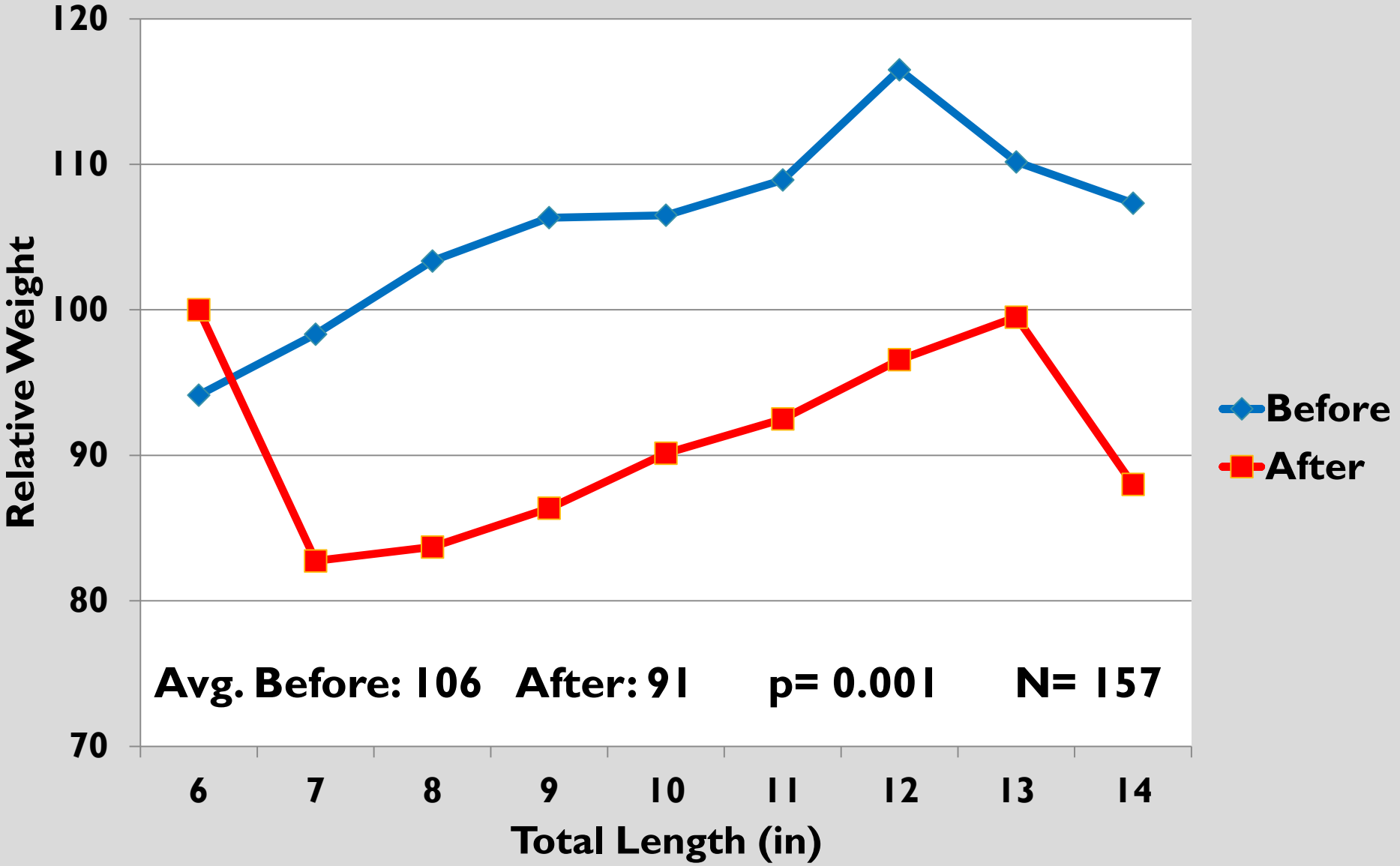
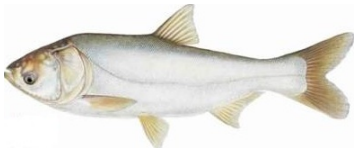


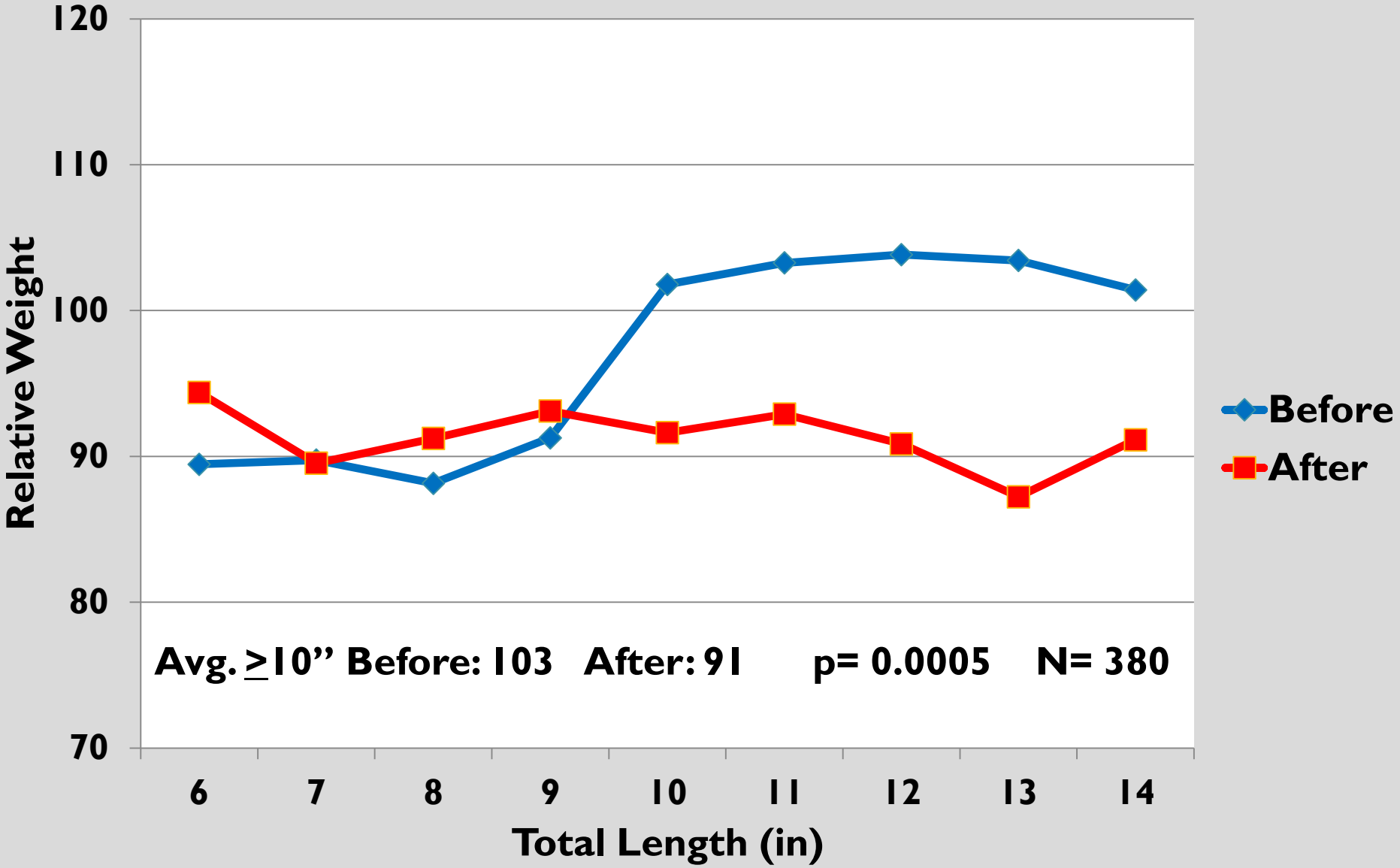
# Bee Lake – crappie Wr



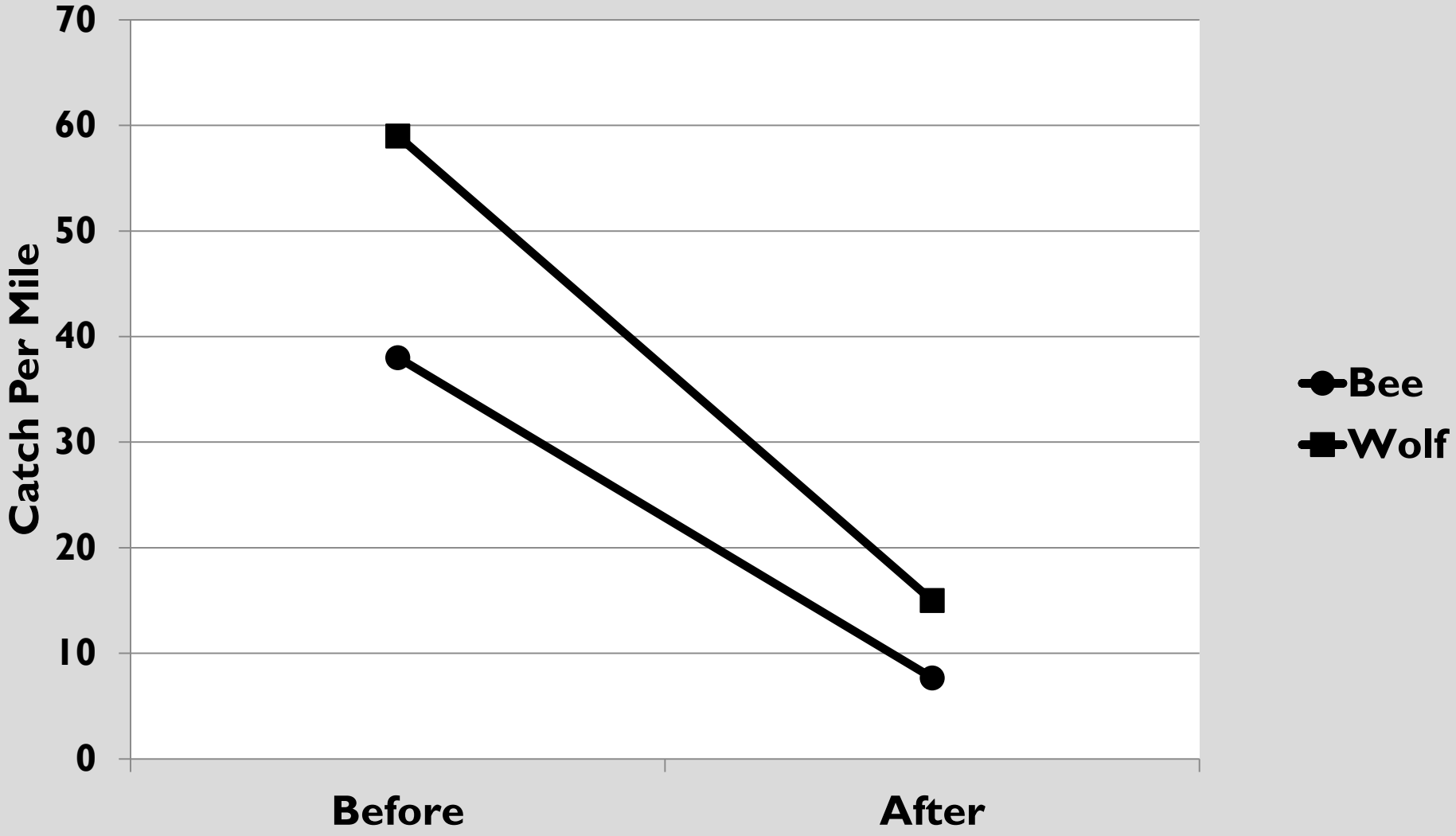


# Wolf Lake – crappie Wr





# White crappie CPUE



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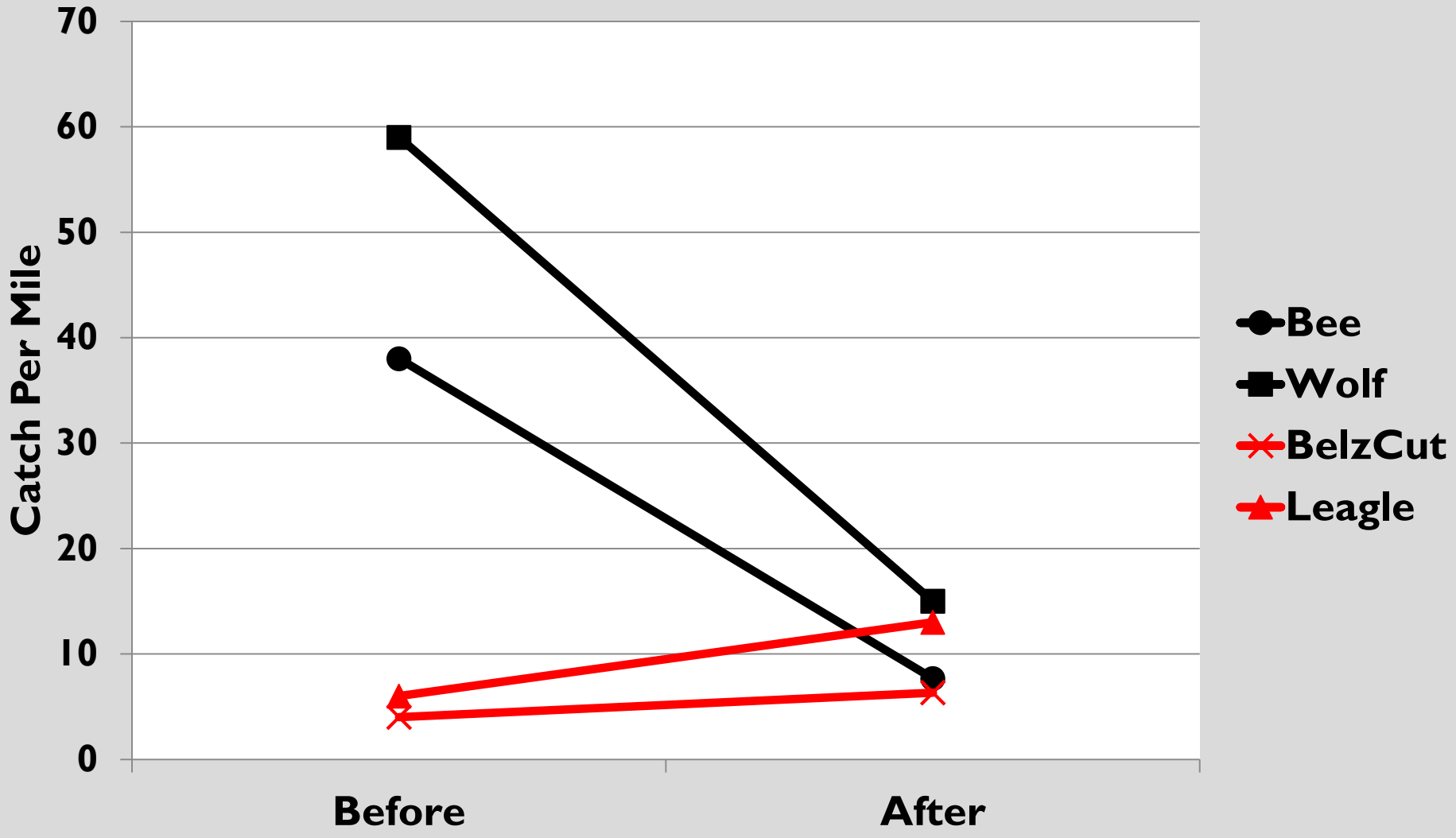
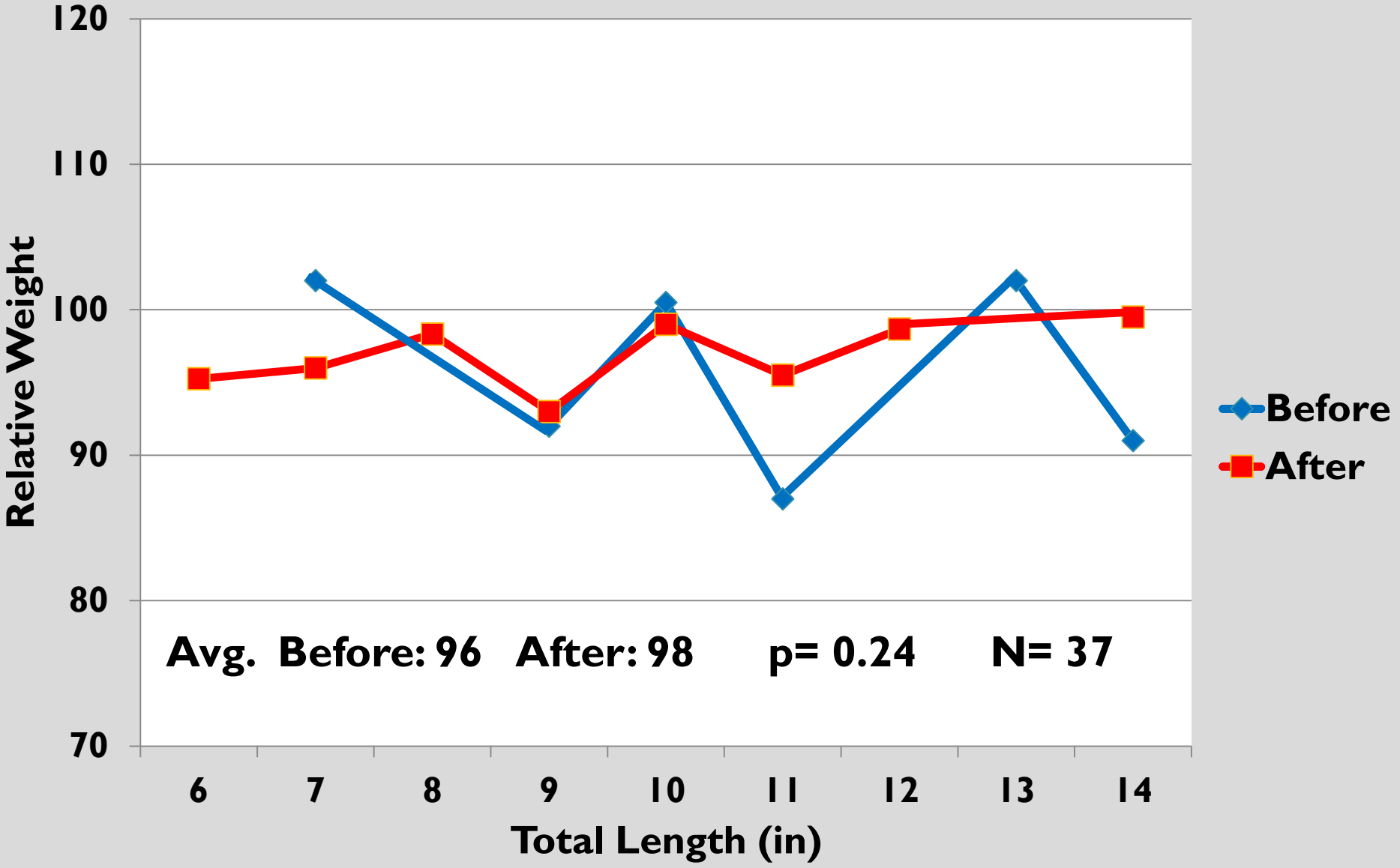
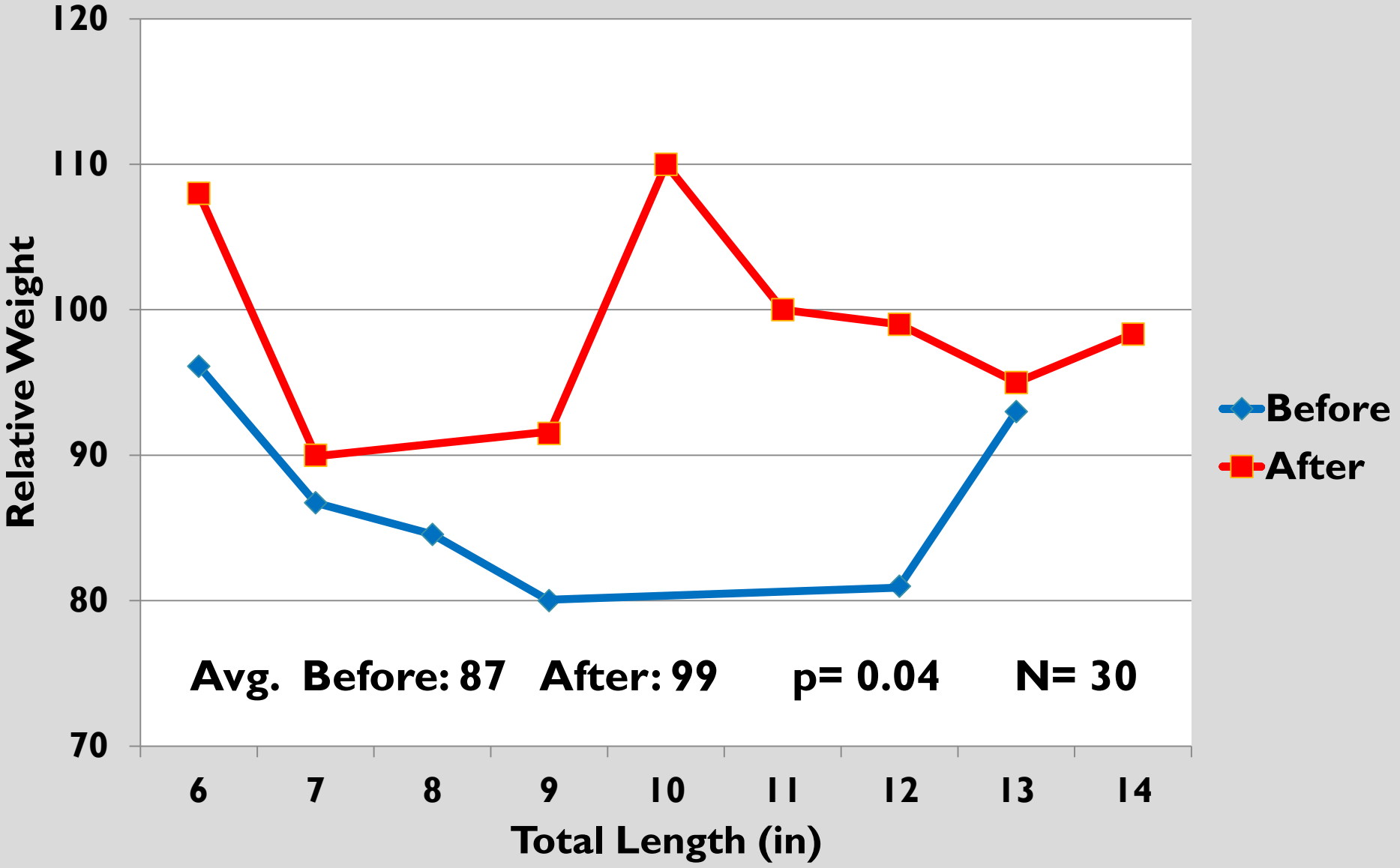


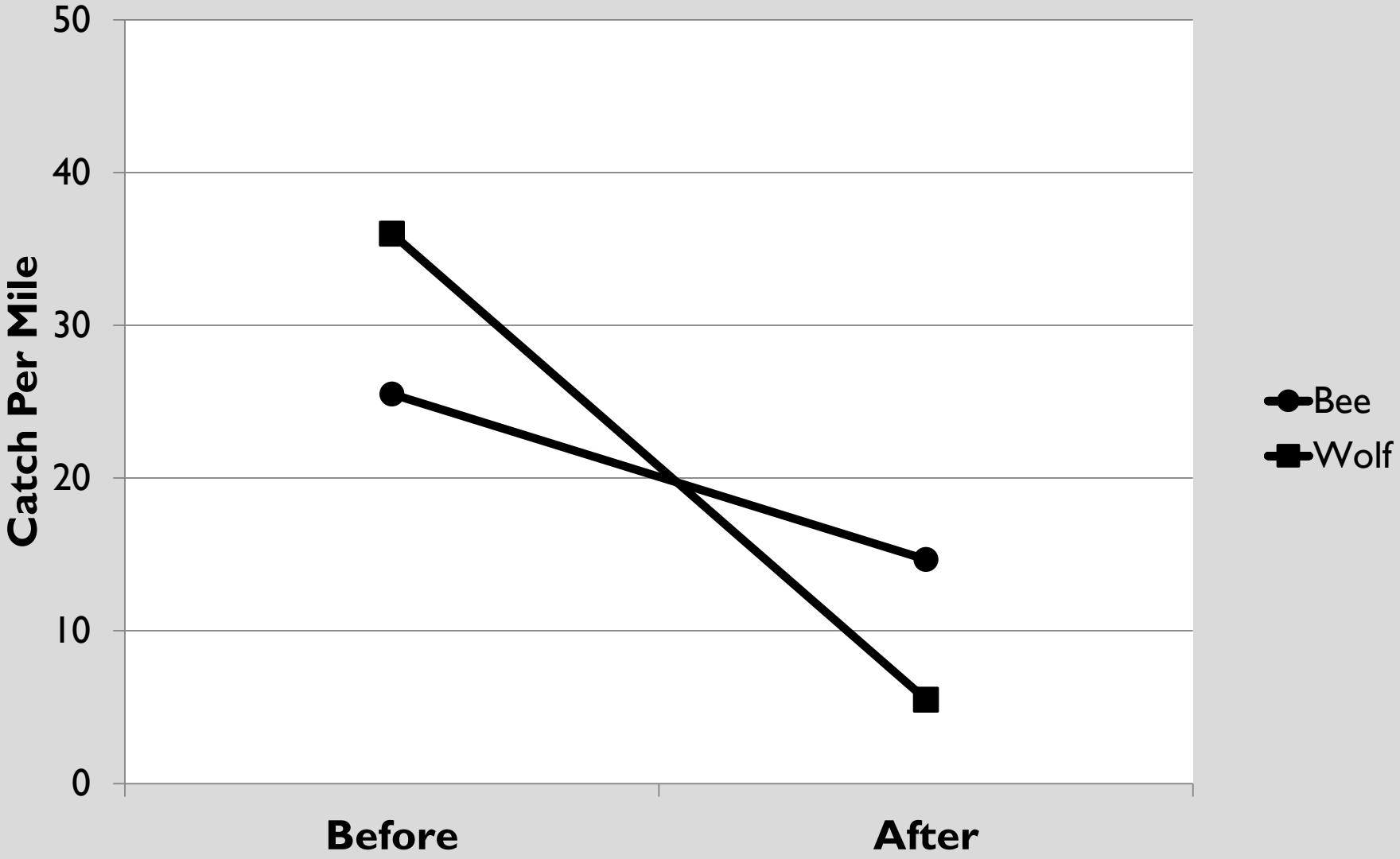
# Little Eagle Lake – Crappie Wr



# Belzoni Cutoff – Crappie Wr



# Largemouth Bass CPUE



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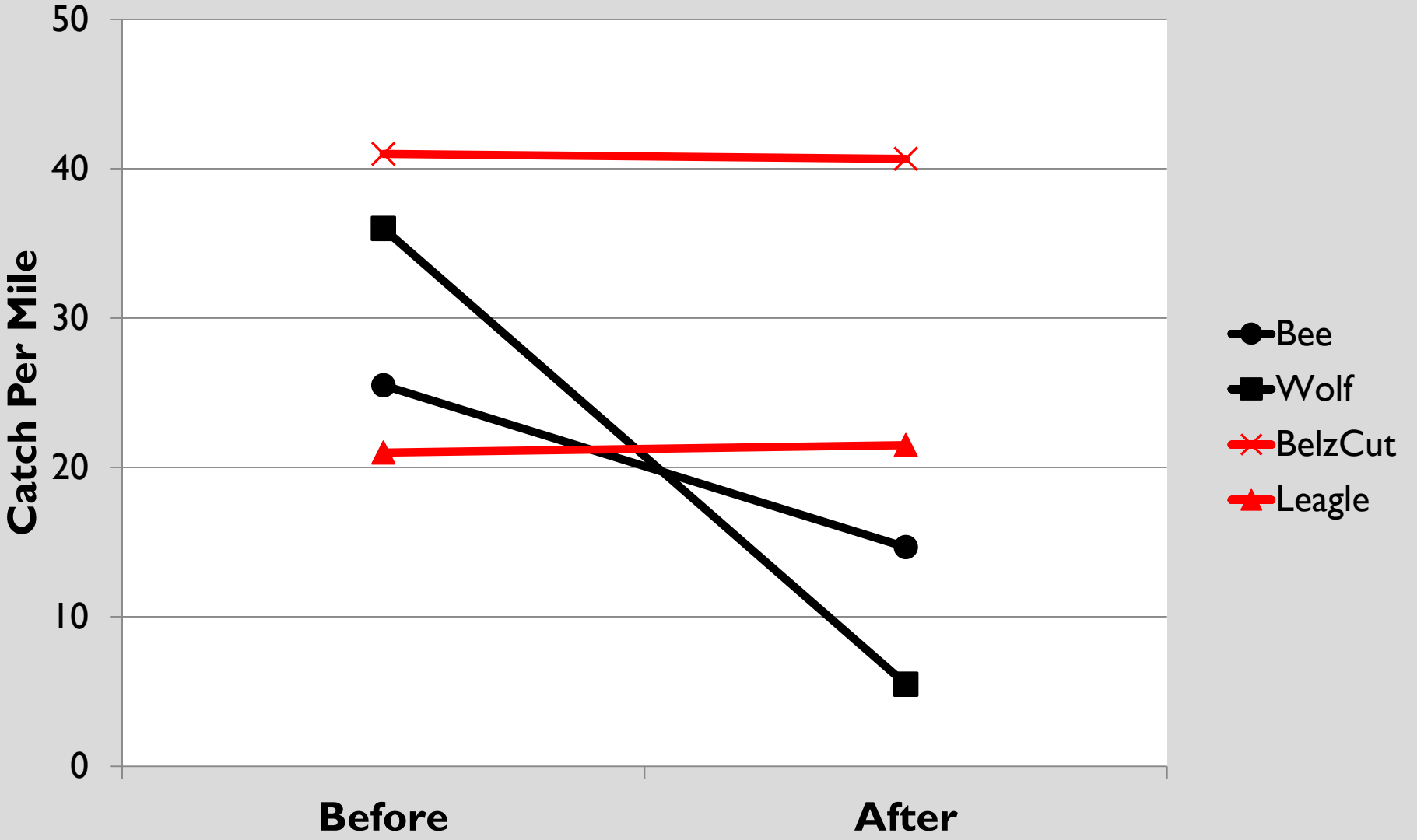
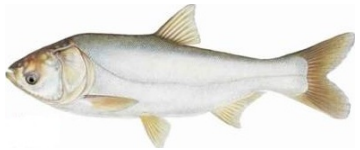
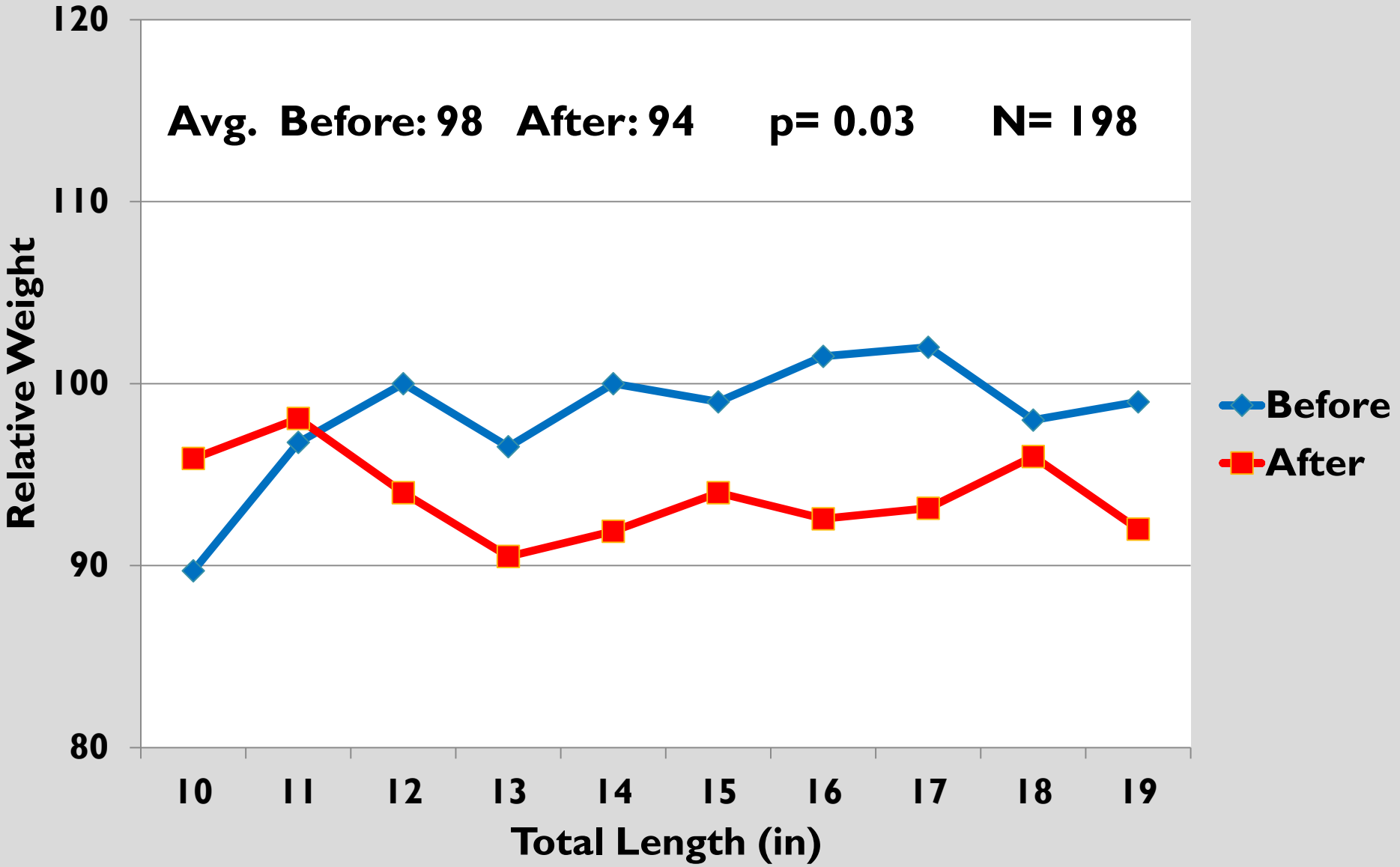
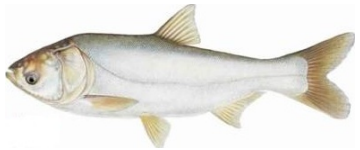


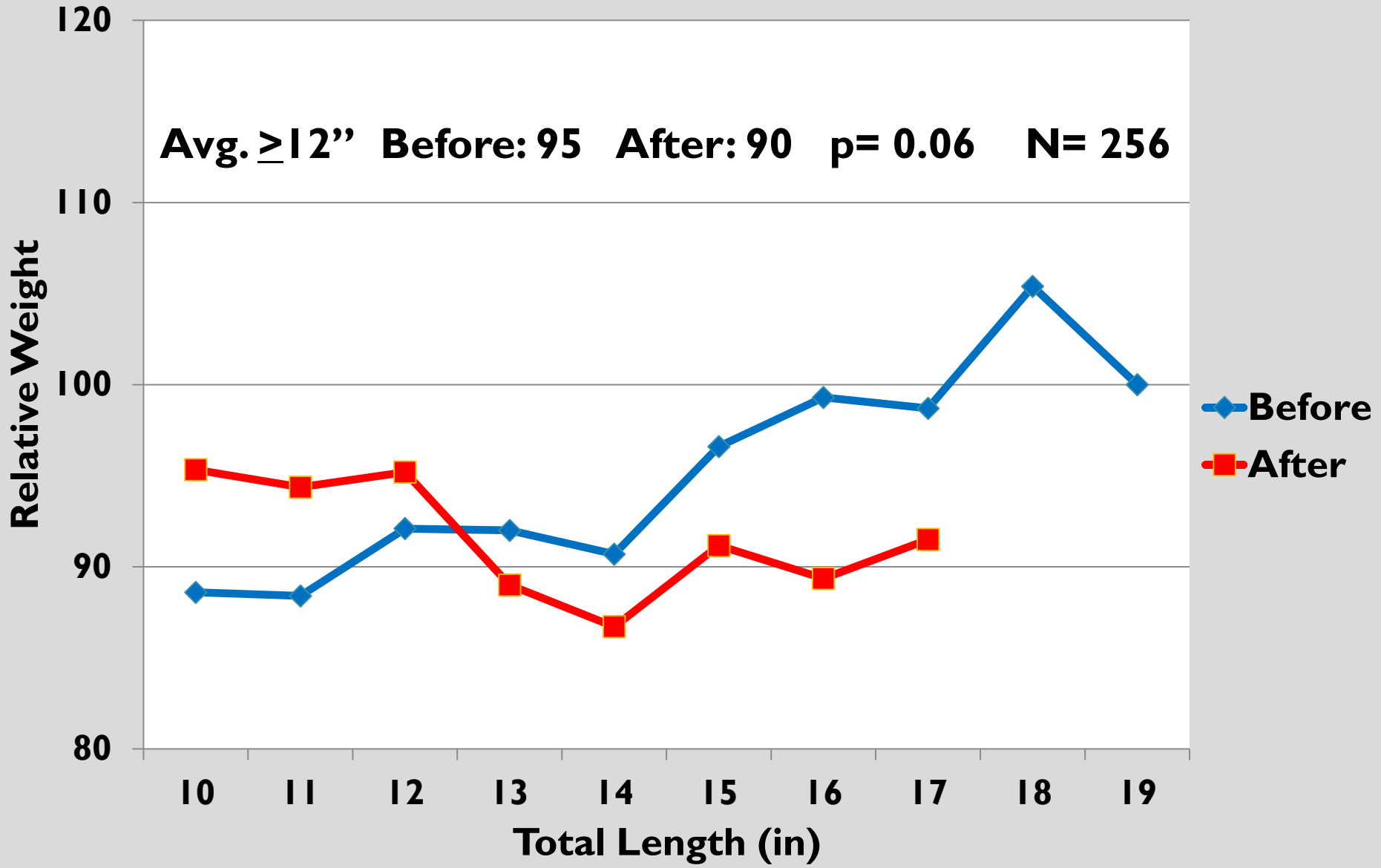
# Bee Lake – LMB Wr



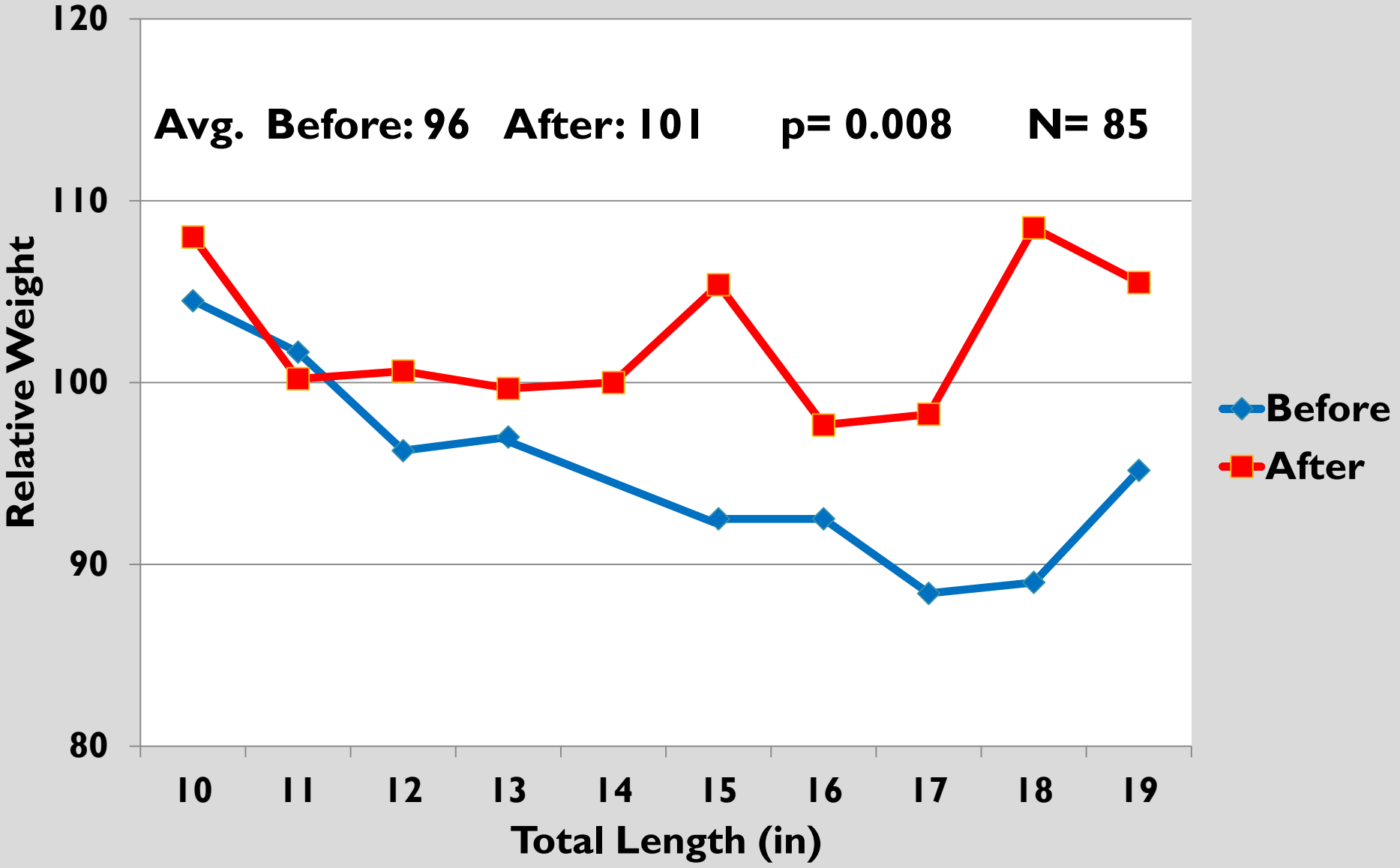


# Wolf Lake – LMB Wr

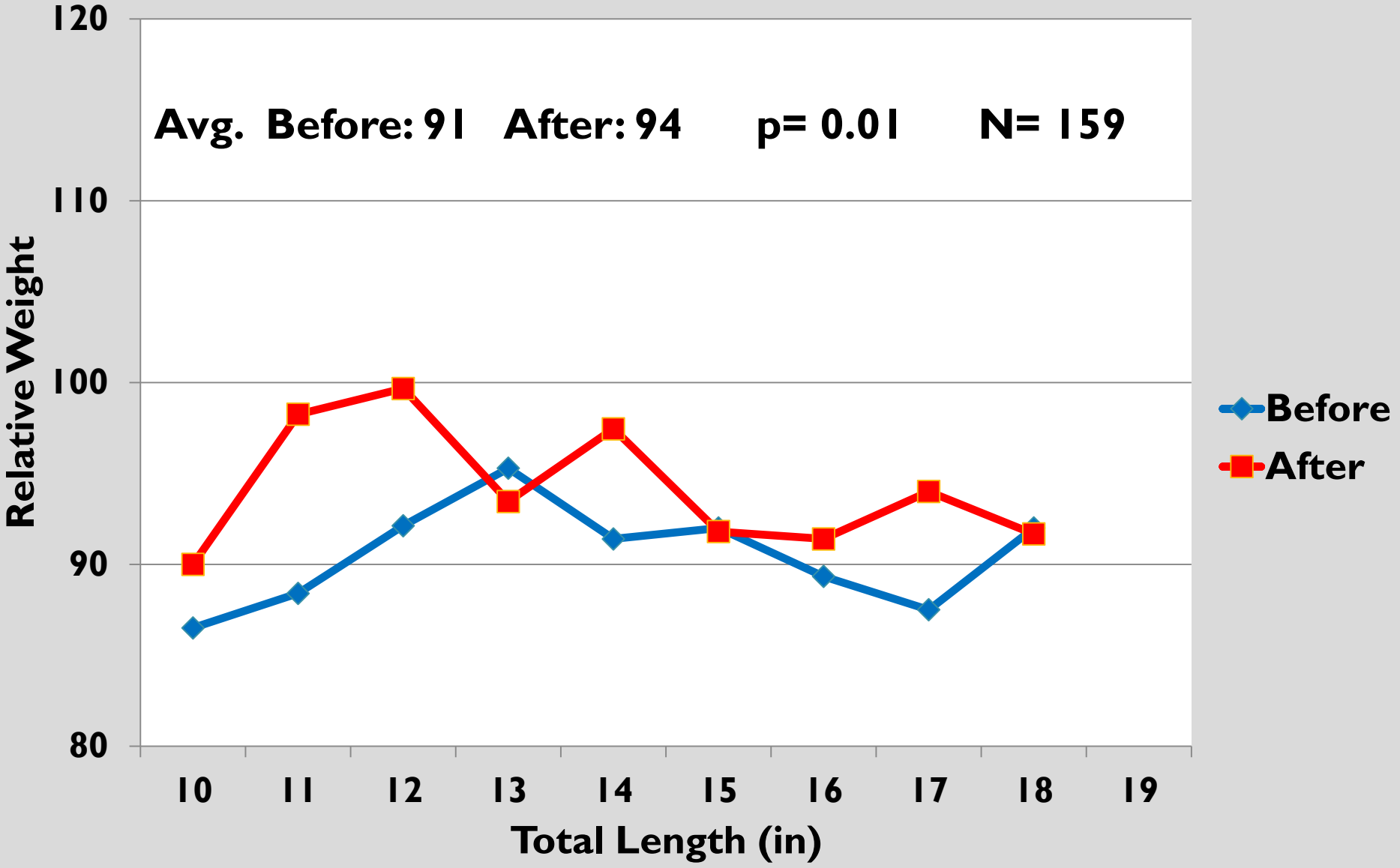




# Little Eagle – LMB Wr



# Belzoni Cutoff – LMB Wr



# Conclusions

- Crappie CPUE, growth rate, and Wr decreased after flood in lakes where silver carp were introduced

- Crappie CPUE increased in lakes where silver carp were not introduced, Wr increased or stayed the same

# Conclusions

- Largemouth bass CPUE decreased and Wr decreased after flood in lakes where silver carp were introduced

- Largemouth bass Wr increased after flood in lakes where silver carp were not introduced; CPUE similar

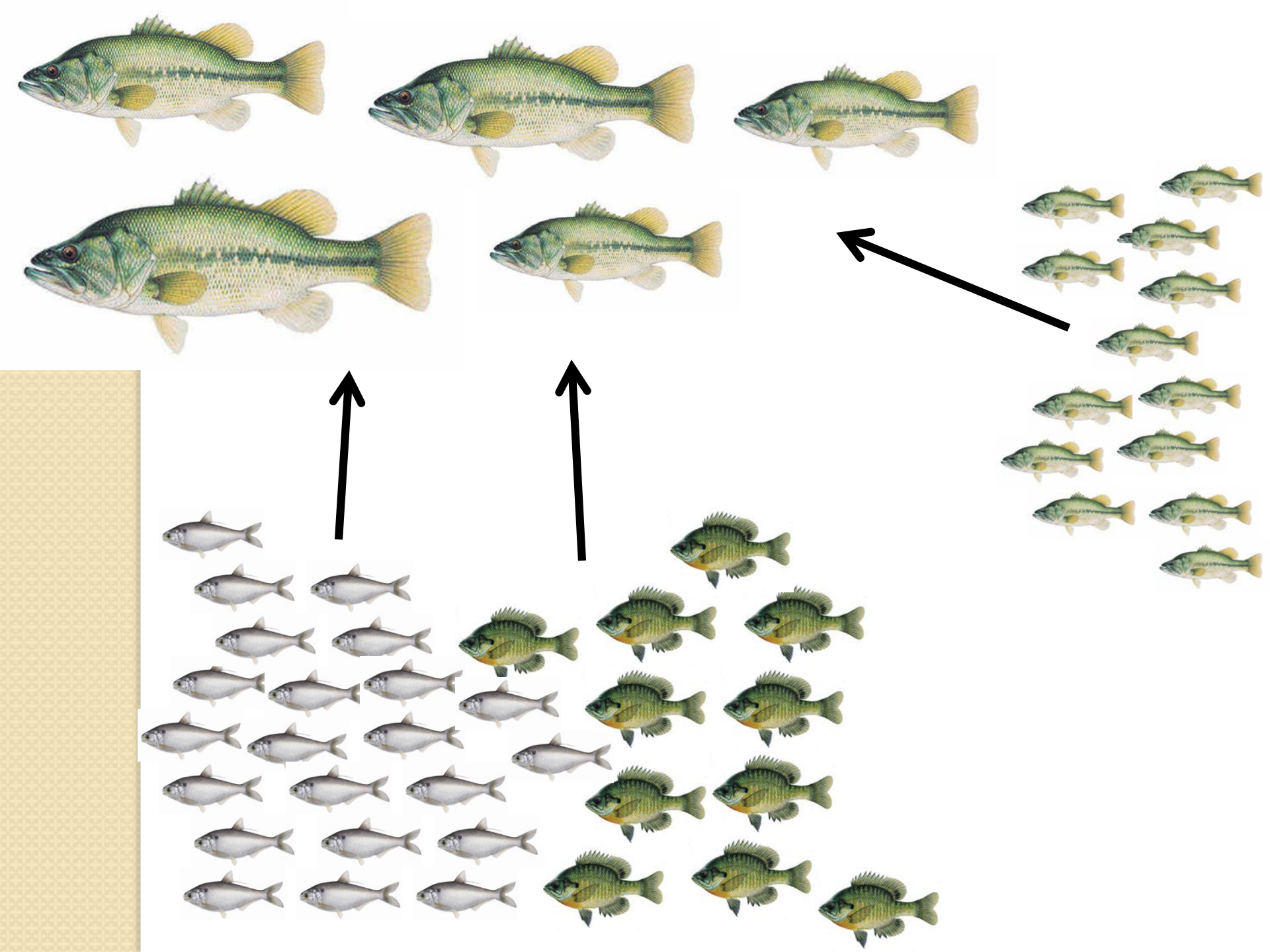
# Conclusions

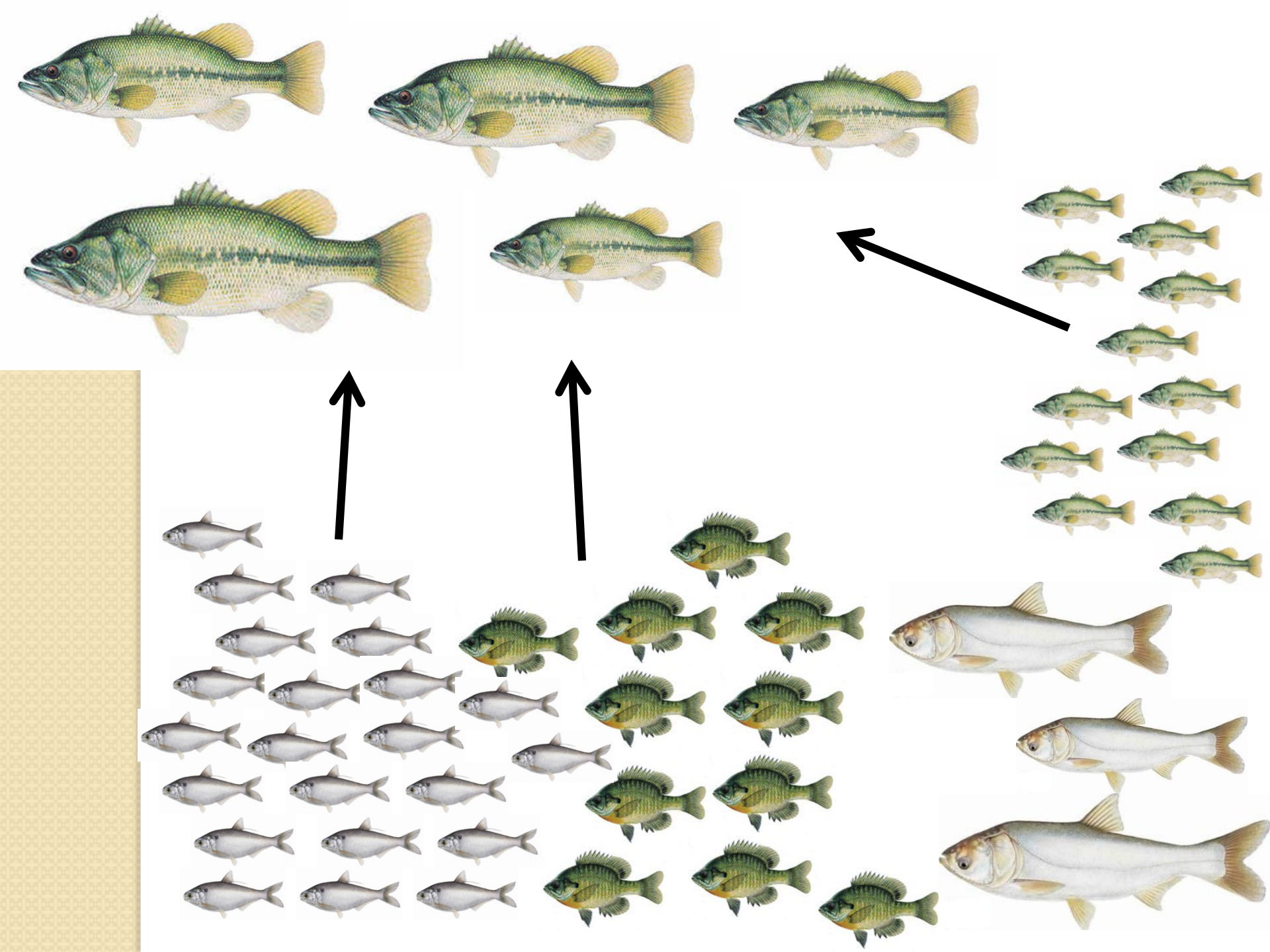
- Silver carp introduction has negatively effected Largemouth Bass and Crappie populations

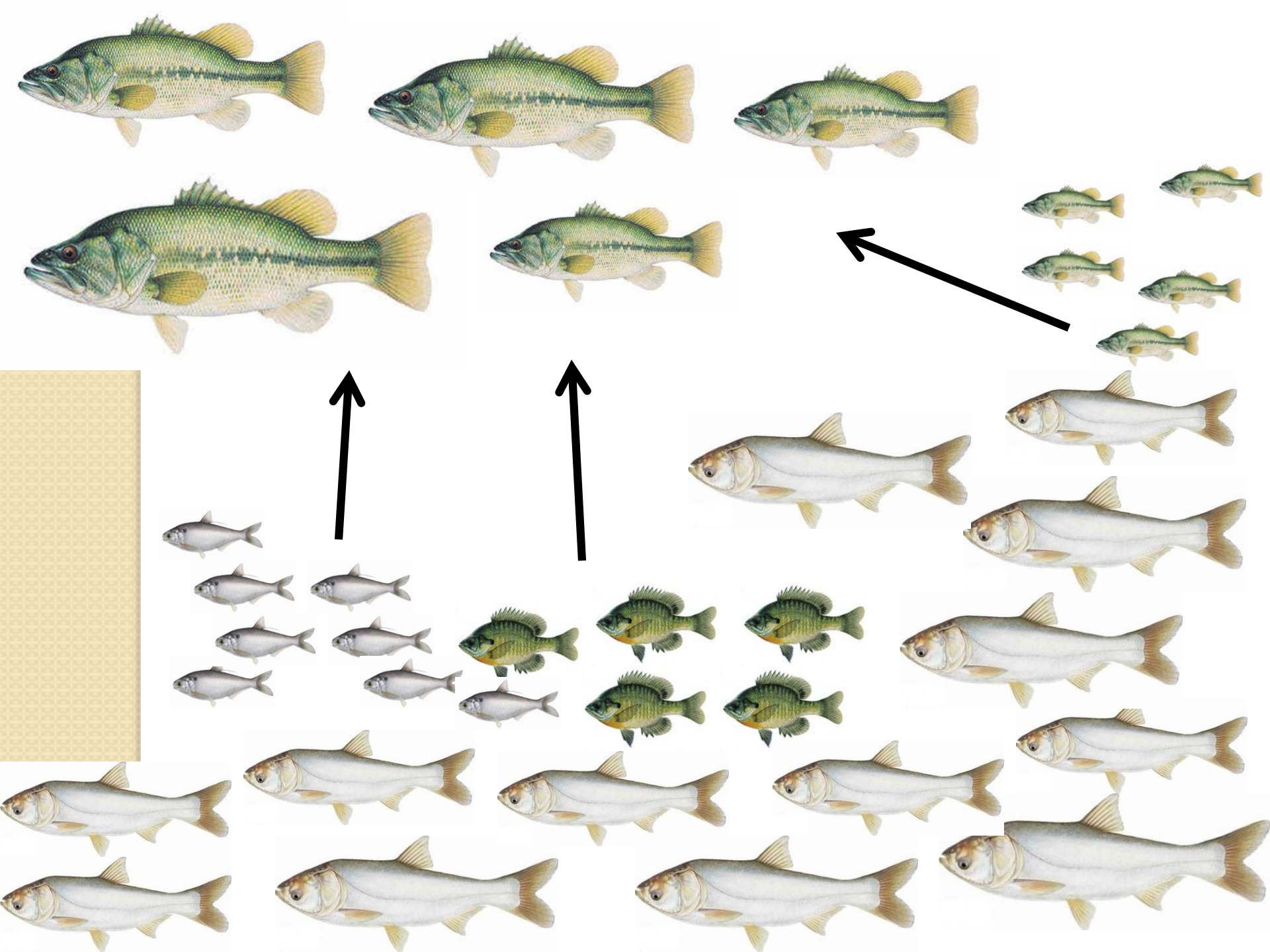
# Conclusions – Why?

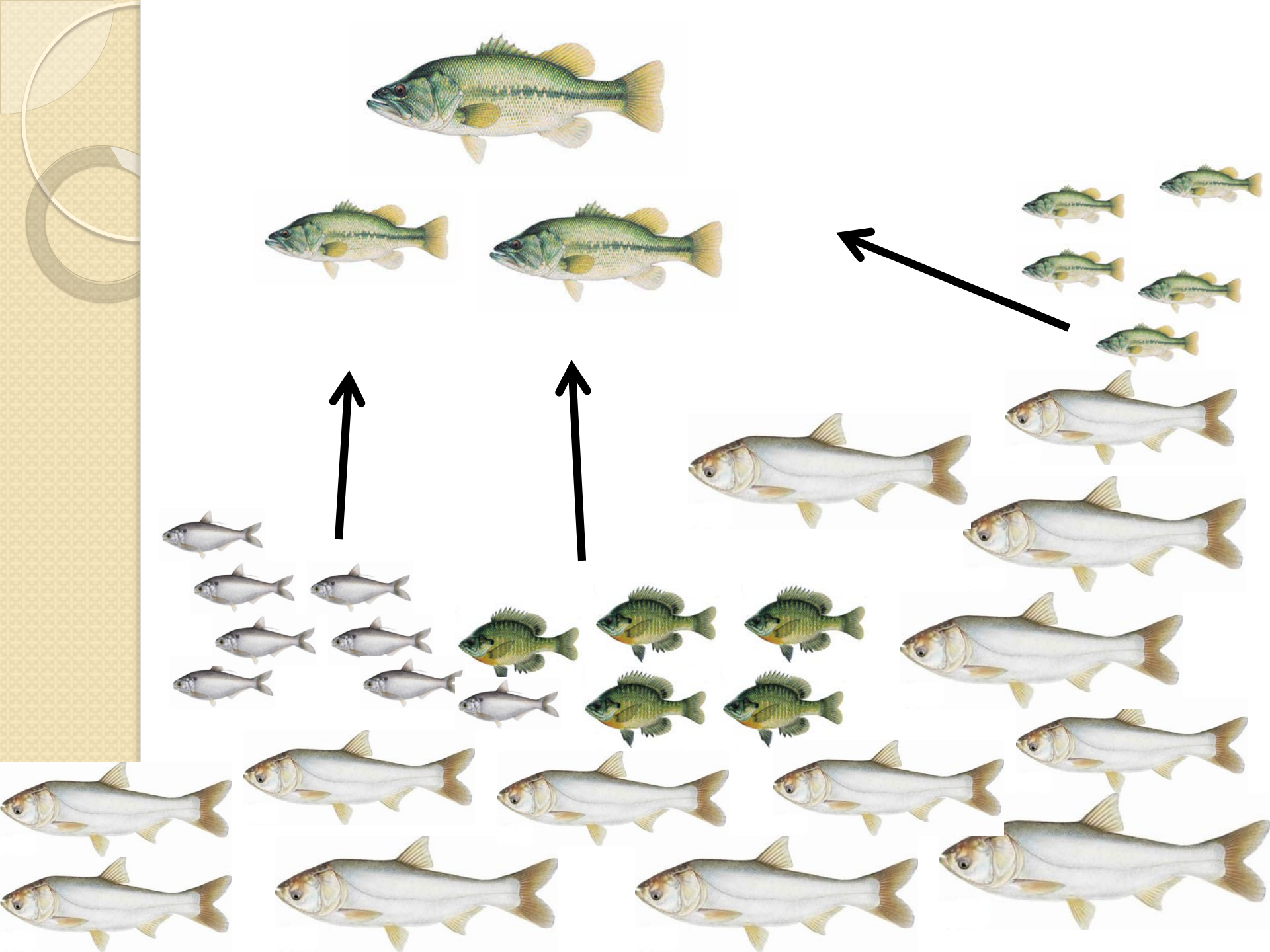
- Silver carp highly efficient planktivores, competing directly with juvenile bass and crappie for zooplankton *(Conover et al. 2007, Garvey et al. 2007)*

- High dietary overlap between Silver Carp and both Gizzard Shad and Bluegill Sunfish *(Sampson 2005, Freedman et al. 2012)*









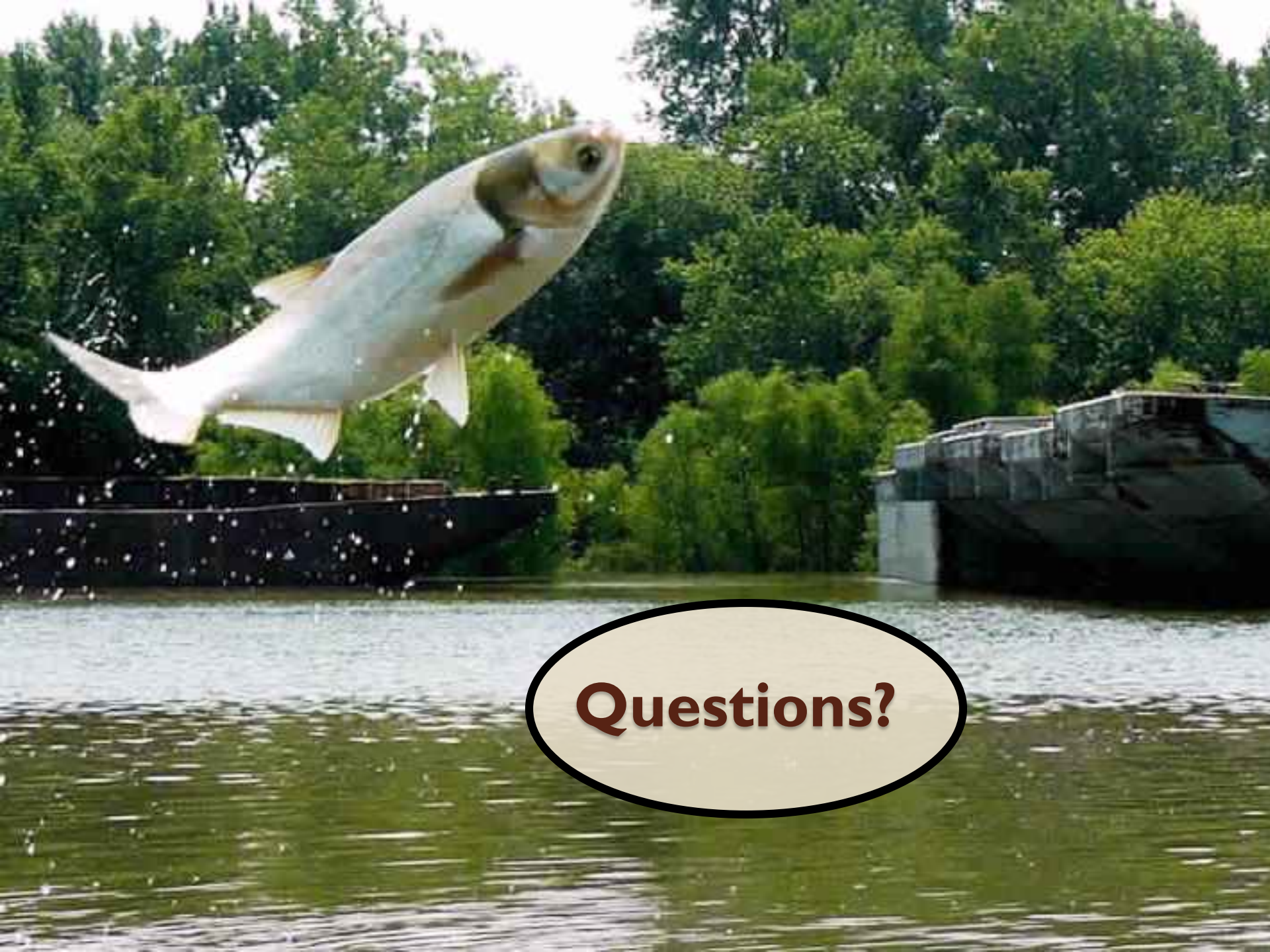
# Future Work

- What to do about it???
- Better ways to estimate silver carp abundance
- Begin recording shad abundance
- Continue sampling these lakes and monitor trends
- Good news is no new silver carp juveniles in Bee or Wolf

# What MDWFP is doing…

- Monitoring carp populations
- Researching effects of carp
- Educating public
- Working to stop further expansion
- Encouraging harvest
- Working to establish markets


| March 2016 | Bought | Caught |
|---|---|---|
| Silver Carp | 24,360 | 71,782 |
| Bighead Carp | 1,403 | 3,373 |
| Common Carp | 8,219 | 8,050 |
| Grass Carp | 3,015 | 377 |
| Buffalo | 37,792 | 32,931 |
| Subtotal | 74,789 | 116,513 |
| Total | 191,302 | |


Questions?