

# Implications of Reduced Stocking Frequencies on Fishing Quality in the Arkansas Urban Fishing Program



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# Introduction

- Agency benefits of urban fishing programs
  - Stabilized license sales and funding
  - Increased social relevancy
  - Broader stakeholder base
  - Increased public support
  - Increased stewardship of “forgotten” fisheries
- Realization of these benefits takes a significant investment



# Introduction

- In 2001, AGFC created the Family and Community Fishing Program (FCFP)
  - Stock trout (0.2-0.4 kg) from Dec-Mar and catfish (0.3-1.1 kg) Apr-Aug
  - Biweekly stocking frequency of 125 trout/ha and 247 catfish/ha
- Frequent stocking is expensive
  - Transportation costs
  - Personnel costs



# Study Goal

- To determine if reduced stocking frequency influences fishing quality and angler satisfaction



# Methods: Study Design

- Compared two stocking frequencies
  1. Standard stocking: Biweekly
  2. Experimental stocking: Monthly, double density
- Stocking frequency was assigned randomly to ponds in year 1 and was reversed in year 2



**Biweekly**



**Monthly**

# Methods: Study Area

- Four ponds in Little Rock
- Two ponds in Pine Bluff
- Size range 0.6-2.0 ha



# Methods: Data Collection

- Bus-route type roving creel surveys were used to sample anglers at study ponds
- Stratified two-stage sampling design with weekend/weekday and survey time period

## Survey time periods were

- Morning
- Mid-day
- Evening



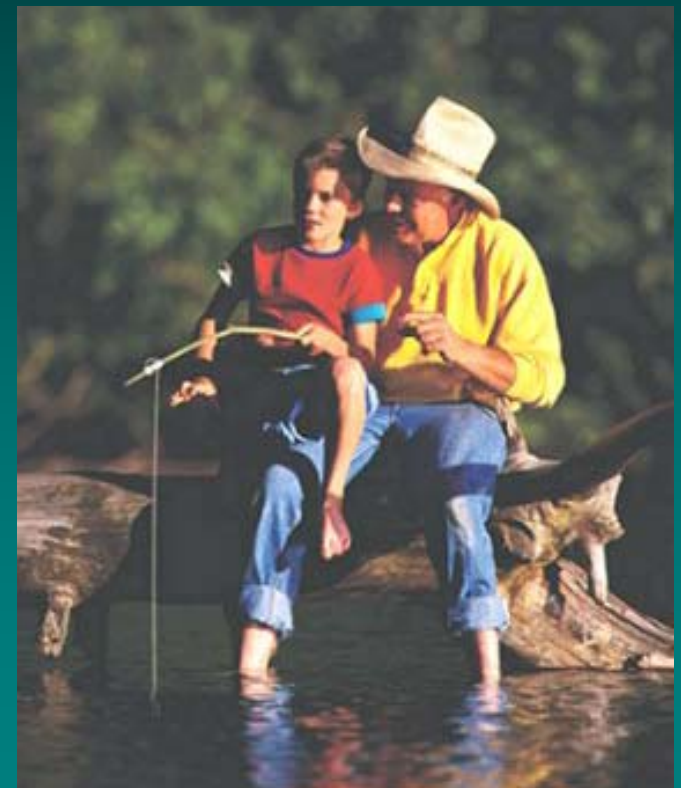
# Methods: Quality Control



- Pre-tested questionnaire
- Pre-tested survey procedures
- Tested for reliability
- Rigorous creel clerk training
- Creel clerk spot checks

# Methods: Data Analysis

- Effort, catch, harvest, CPUE, and HPUE were compared between treatments using paired t-tests
- Angler satisfaction ratings were compared between treatments using  $\chi^2$  tests
- Effort and CPUE of days post-stocking were analyzed using linear regression



# Results: Survey Statistics

- Conducted 485 survey shifts
- Approached 2,045 angler parties
- Interviewed 1,975 angler parties (4,177 anglers)
- Response rate of 97%
- Tested 7% of all respondents for reliability
- Both catfish (95%) and trout (97%) season respondents proved reliable



## Results: Effort (h)



	Catfish <sup>a</sup>	Trout <sup>b</sup>
Biweekly	28,562	8,102
Monthly	26,324	6,242
Total	54,886	14,344
h/ha/d	27	11

<sup>a</sup>( $t = 0.433$ ,  $P = 0.683$ ), <sup>b</sup>( $t = 1.722$ ,  $P = 0.184$ )

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## Results: Catch (n)



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	Catfish <sup>a</sup>	Trout <sup>b</sup>
<b>Biweekly</b>	9,610	9,131
<b>Monthly</b>	10,658	7,355
<b>Total</b>	20,268	16,486
<b>Stocked</b>	24,400	14,850

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<sup>a</sup>( $t = -0.535, P = 0.616$ ), <sup>b</sup>( $t = 0.757, P = 0.504$ )

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Biweekly	0.34	0.30	1.13	0.86
Monthly	0.40	0.35	1.18	0.89

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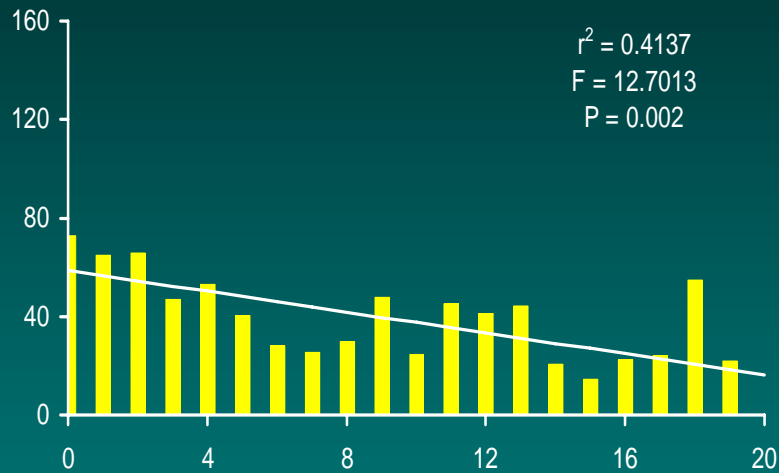
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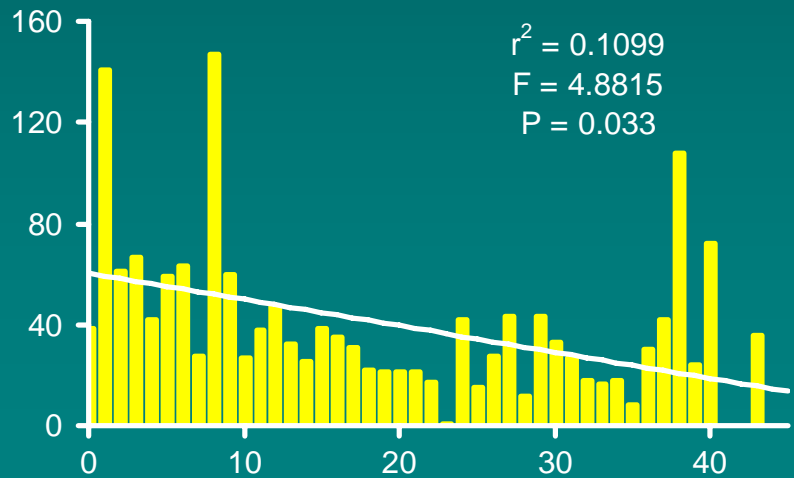
# Results: Effort Days Post-Stocking



Biweekly



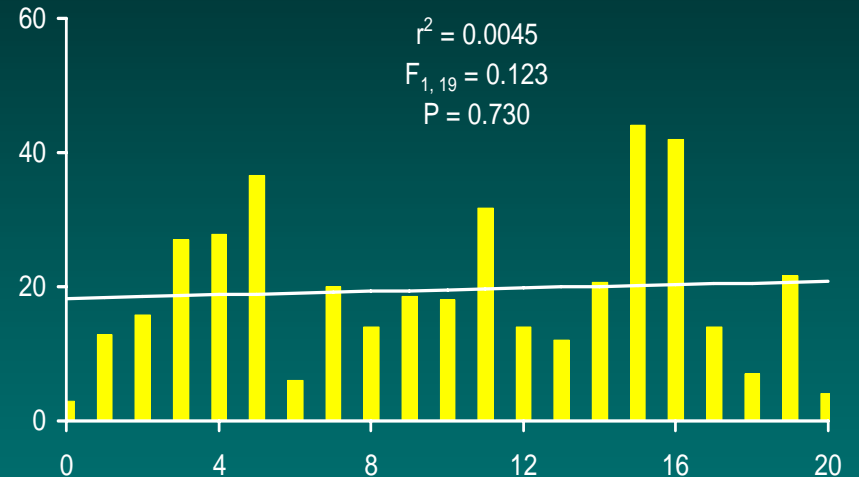
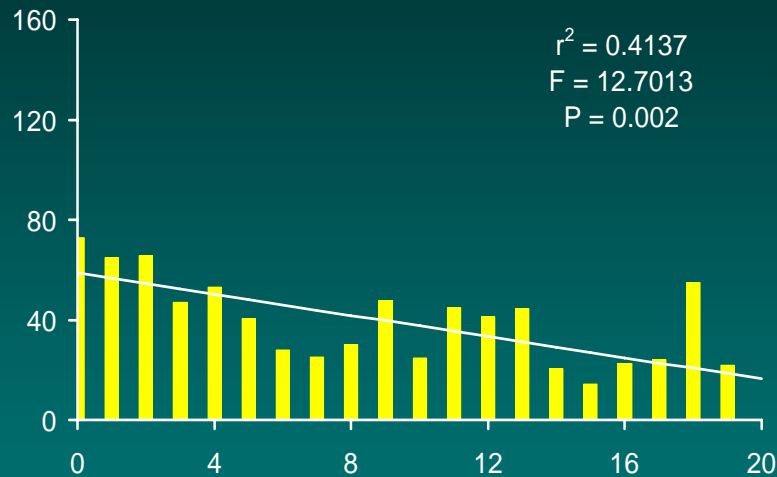
Monthly



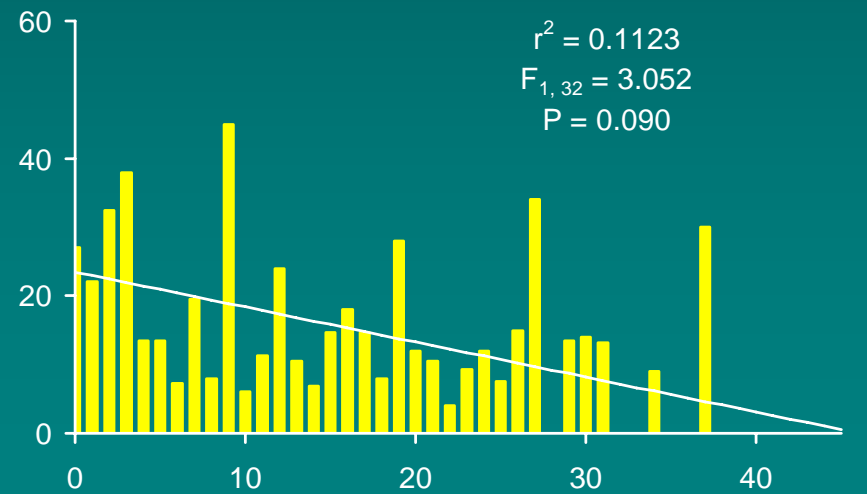
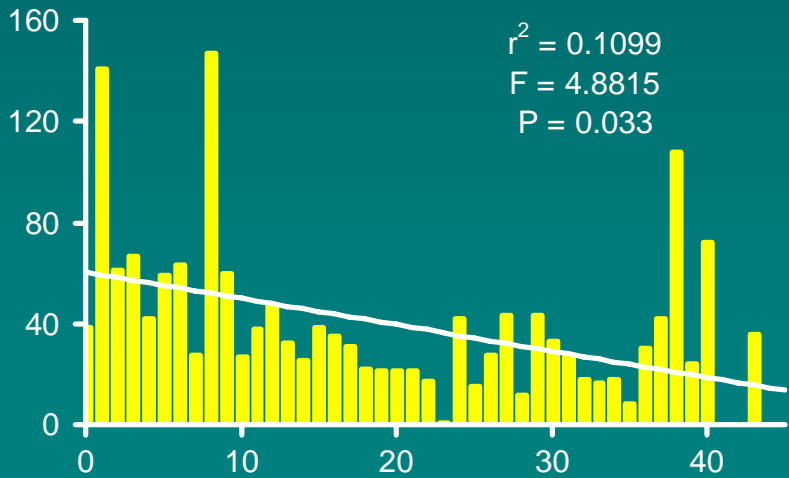
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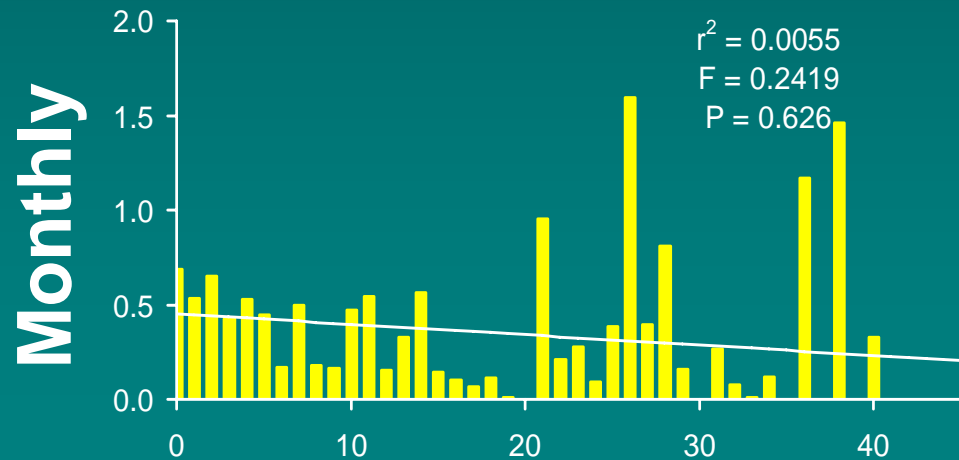
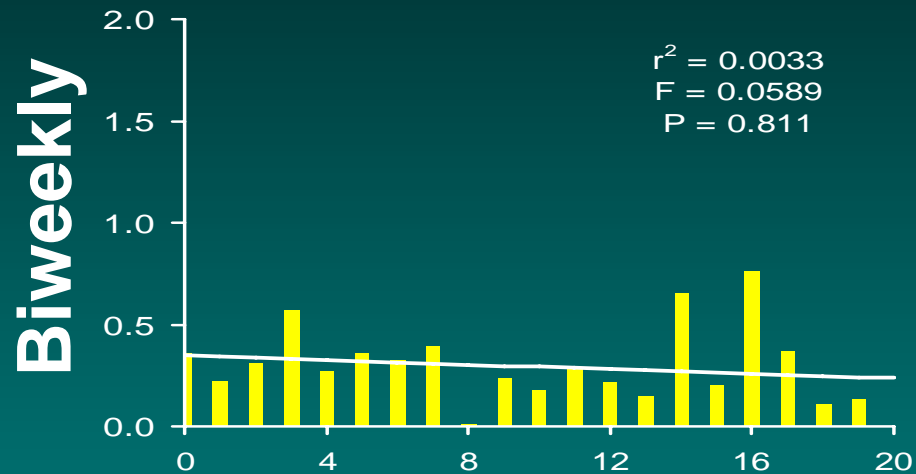
Biweekly



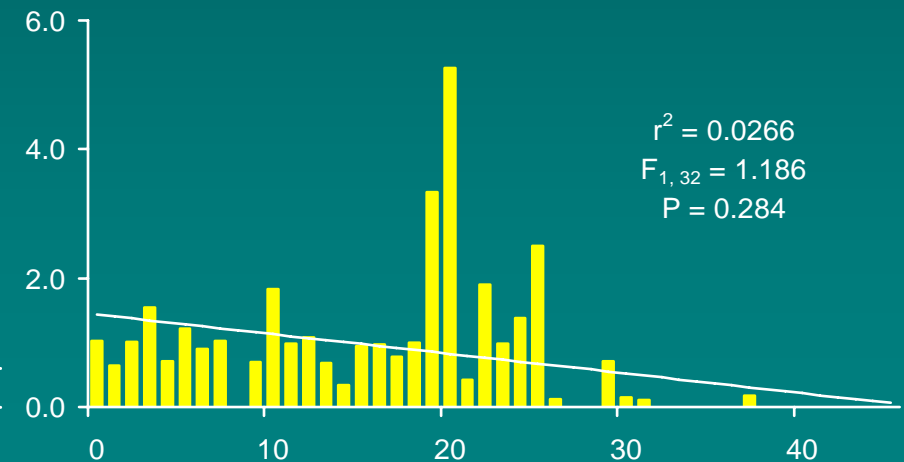
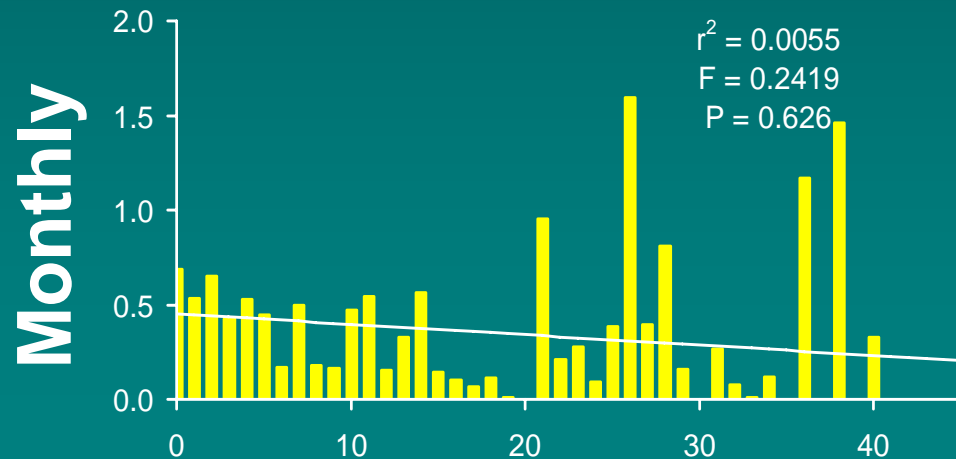
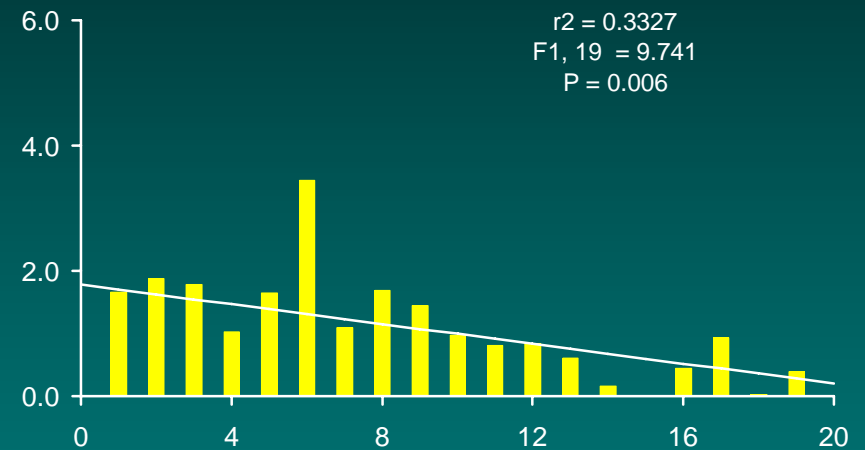
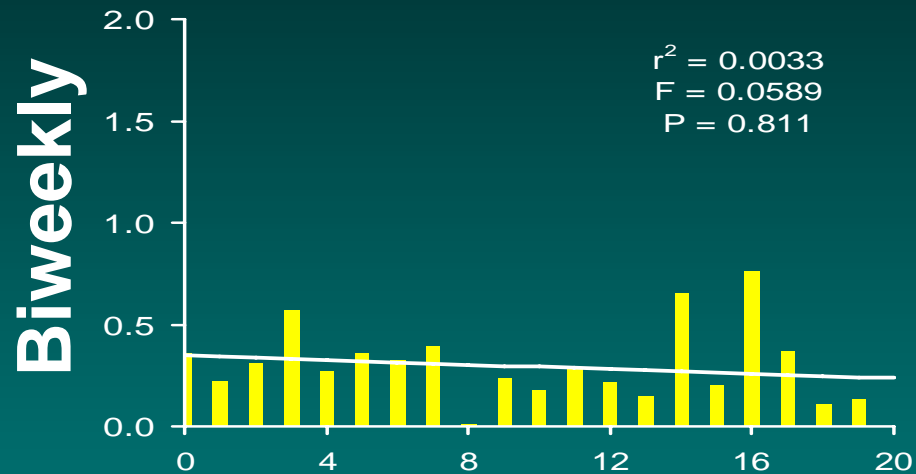
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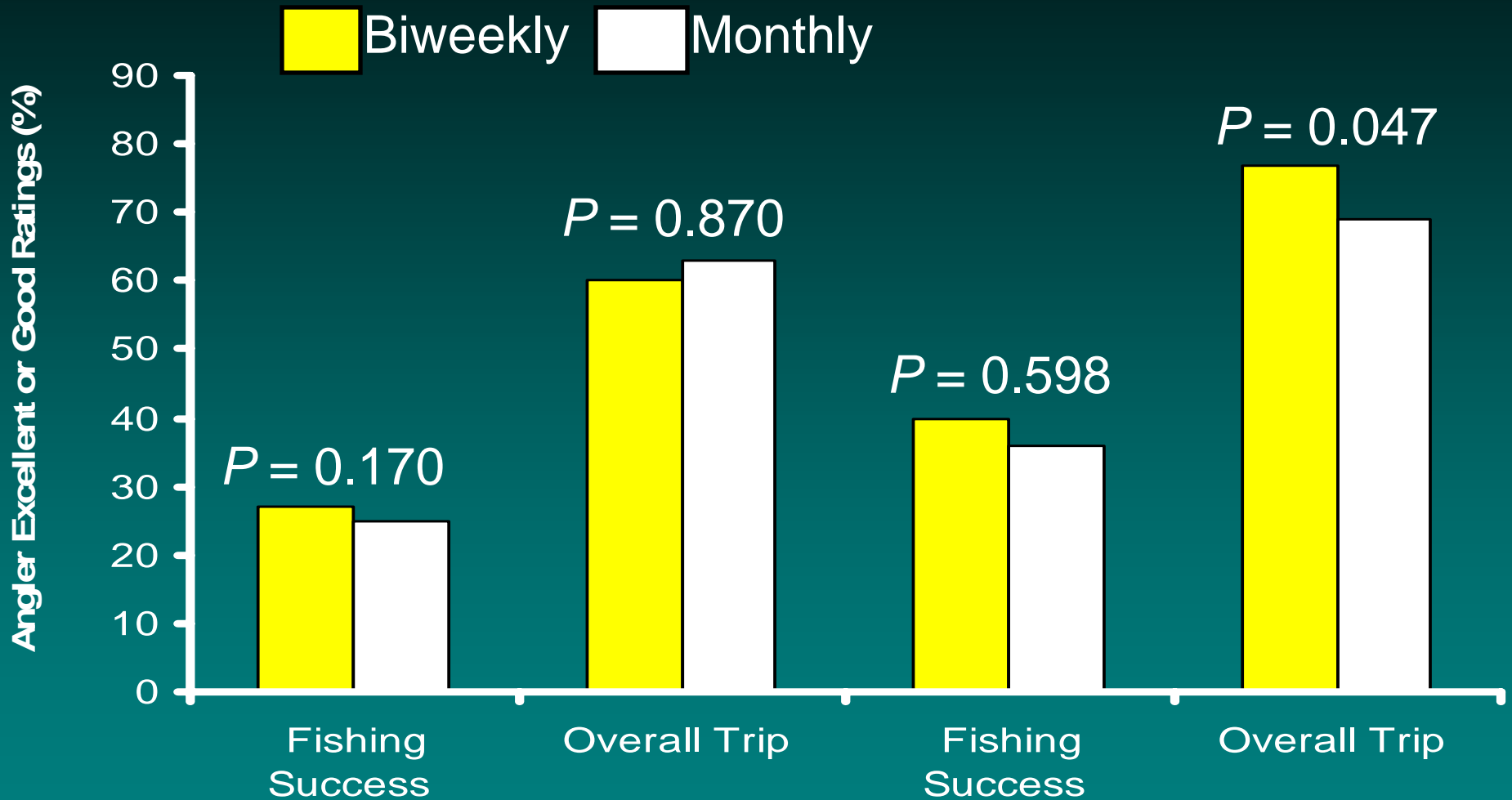
# Results: CPUE Days Post-Stocking



# Results: CPUE Days Post-Stocking



# Results: Angler Satisfaction



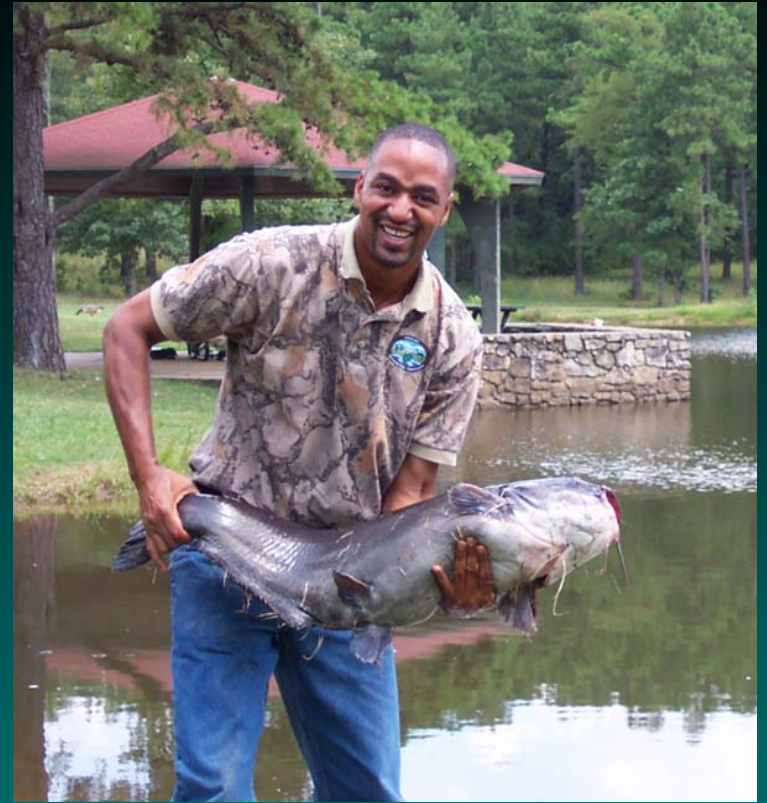
# Conclusion

- Fishing quality and angler satisfaction were not different between treatments
- Even when fishing quality did decline between stockings it was still very high
- Can stock less often without causing detrimental effects to fishing quality
- Monthly stocking should reduce hauling and personnel cost



# Thank You

- Dr. Steve Lochmann
- Clifton Jackson, M.S.
- Chris Racey, M.S.
- Clint Coleman
- UAPB personnel



# Funding Sources



A young child with light brown hair, wearing a light blue long-sleeved shirt, is sitting behind a large wooden table. The table is covered with approximately 20 large, silver fish, likely sea bream or similar species, arranged in several rows. The child is looking directly at the camera with a neutral expression and is holding a small, round, blue object in their hands. The background consists of a green lawn and some dark, leafy plants. A white speech bubble with a black border is positioned in the upper right quadrant of the image, containing the text "Questions?".

**Questions?**