

# Trophy Blue Cats

## An evaluation of Oklahoma's Blue Catfish Regulation Change

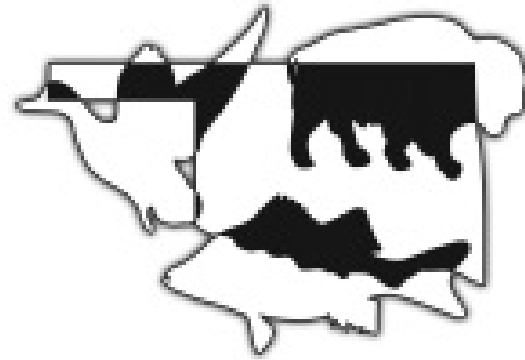
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# Acknowledgements

- Jim Long
- Ashley Nealis
- Bill Wentroth
- ODWC Staff



# Introduction

- Trophy fishing is popular across the country
- Creating trophy fisheries is often the objective of fisheries managers
- Florida Largemouth bass  
*Micropterus salmoides floridanus*
- Blue Catfish  
*Ictalurus furcatus*



# Blue Catfish

Blue Catfish



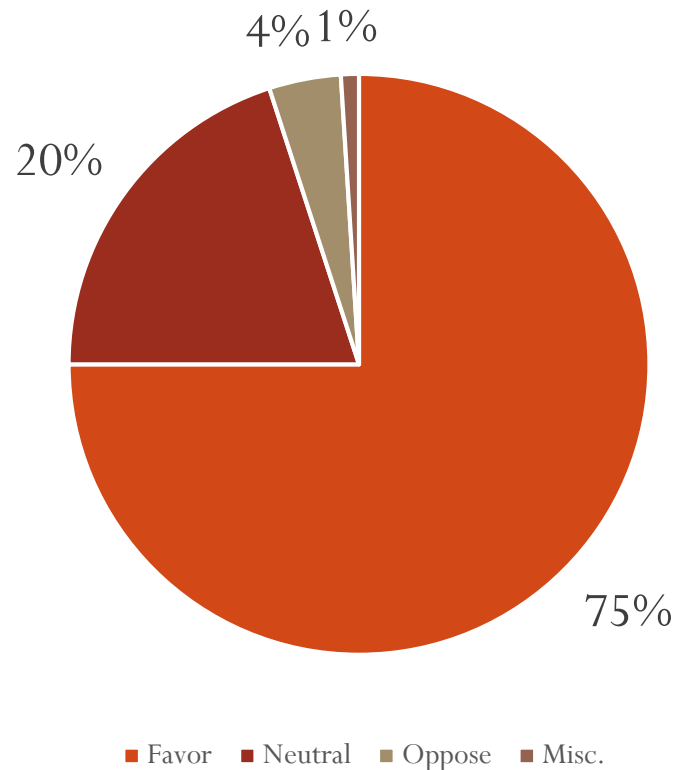
- Riverine species
- Largest Sportfish
- Primarily caught for food



# Introduction Cont.

- Growing number of anglers target them for their trophy potential

Angler Attitude About Developing Trophy Catfish Fisheries



# Introduction Cont.

- Only 2% of state agencies manage for trophy catfish



# What is Trophy Fishing?

- Targeting the largest individuals of a species



# Maximum Size Limits

- State agencies began exploring the use of Maximum Size Limits to prevent overfishing of larger Blue Catfish
- 2003 Tennessee becomes first state to implement a maximum size limit

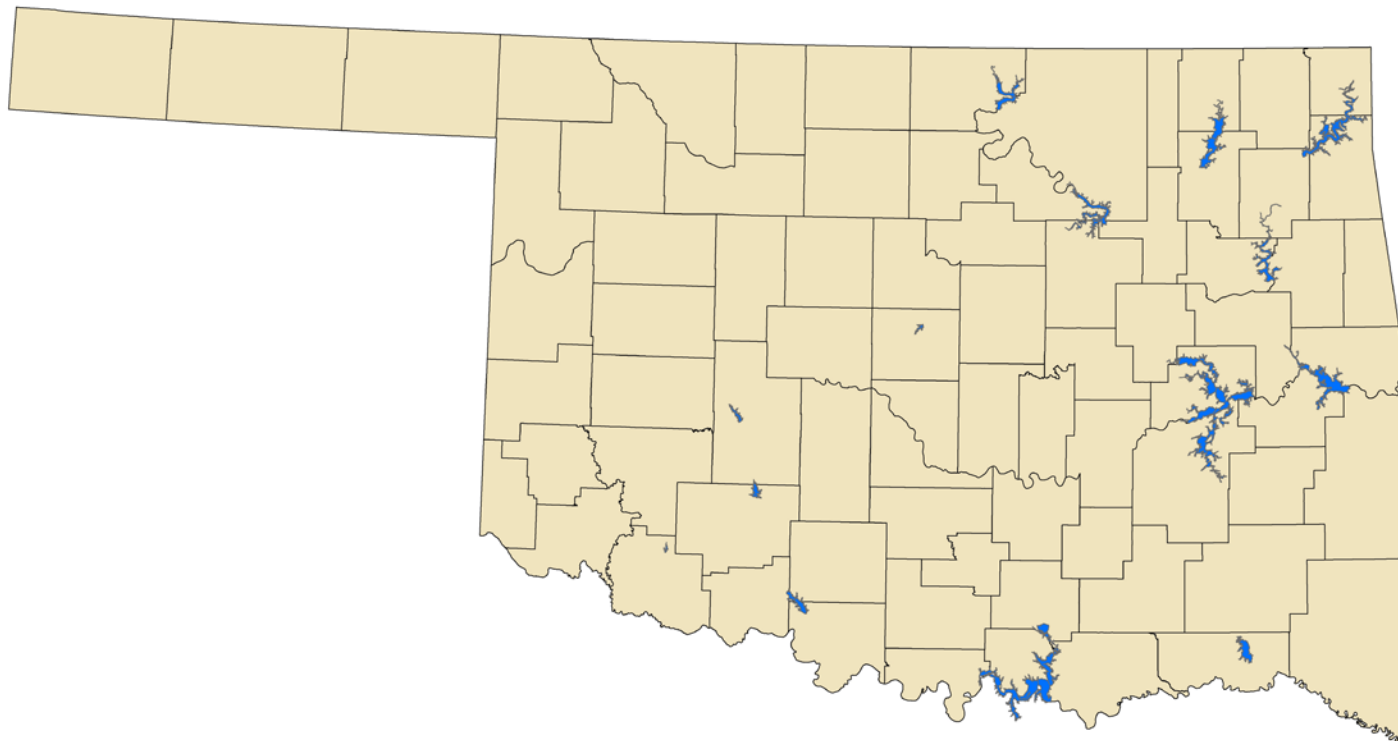
# Statewide Maximum Length Regulation

Maximum Length Regulation on at  
Least One Waterbody



# Oklahoma Research

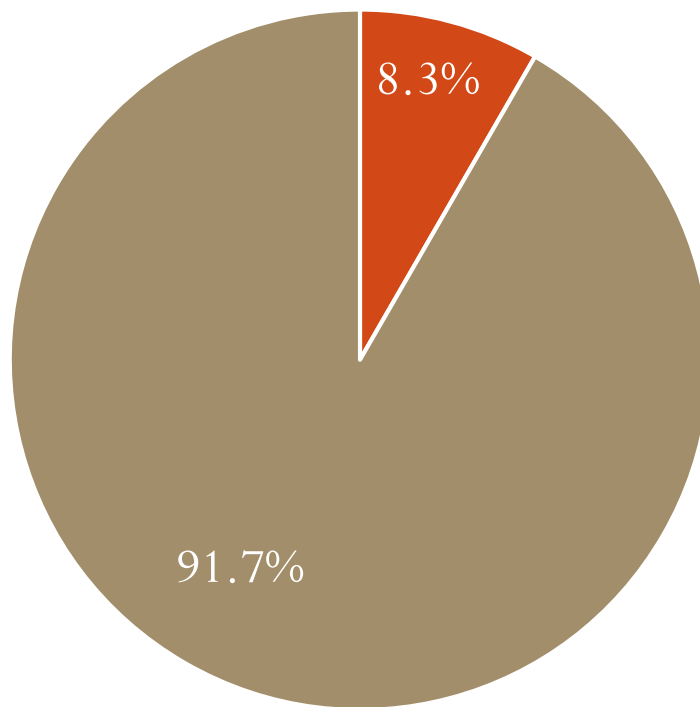
- During the mid 2000's ODWC conducted research on multiple lakes across the state evaluating Blue Catfish populations and a statewide creel survey



# Oklahoma Blue Catfish

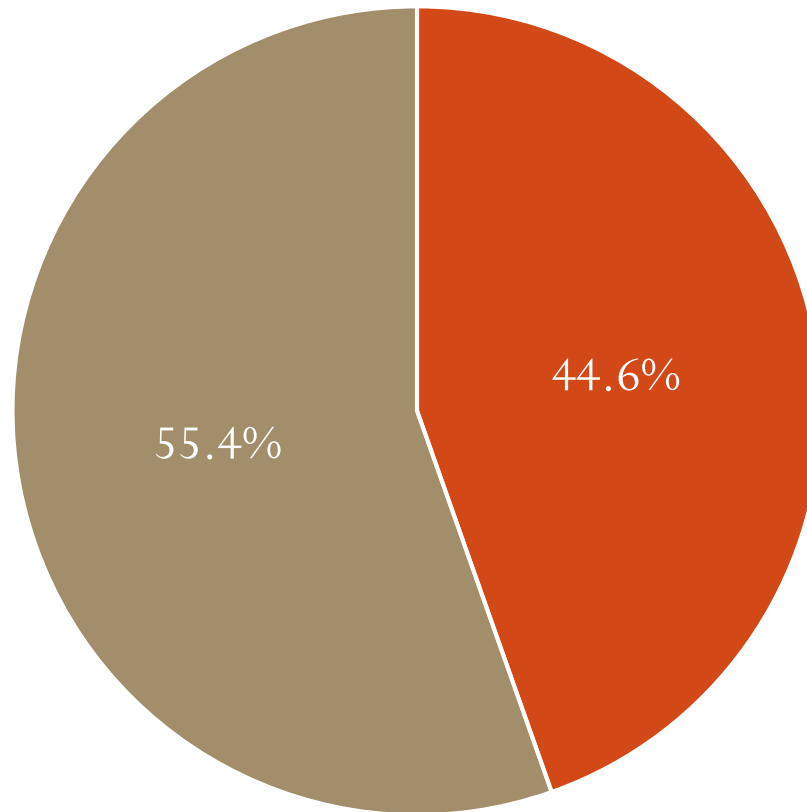
- Slow growth taking 12 years to reach preferred size (762mm)
- Long lived (32 years old)
- ODWC surveys found relative abundances of Blue Catfish  $\geq 762\text{mm}$  were only 0.7% statewide

# Size of Blue Catfish in Anger Creel



■ >762mm ■ <762mm

# Number of Blue Catfish $\geq 762\text{mm}$ Caught by an angler in a day



■ 1 Blue Catfish over 762mm    ■ 2 or more Blue Catfish over 762mm

# Regulation Change

- Implemented a statewide regulation change January 1, 2010
- Blue Catfish and Channel Catfish *I. punctatus*
  - 15 fish combined daily limit
  - Only 1 Blue Catfish  $\geq 762\text{mm}$  (30 inch) per day

# Regulation Change

- Set up to relieve harvest pressure on larger Blue Catfish
- Increase harvest on smaller Blue Catfish
- Increase growth due to fewer fish in the population
- Increase percent of larger Blue Catfish  $\geq 762\text{mm}$





# Objective

- Evaluate the Blue Catfish population on 8 Oklahoma lakes after implementation of a regulation change restricting the harvest of fish over 762mm
- Compare post-regulation to pre-regulation data to determine effectiveness

# Study Lakes

**Kaw**

**Oologah**

**Keystone**

**Grand**

**Eufaula**

**Ellsworth**

**Waurika**

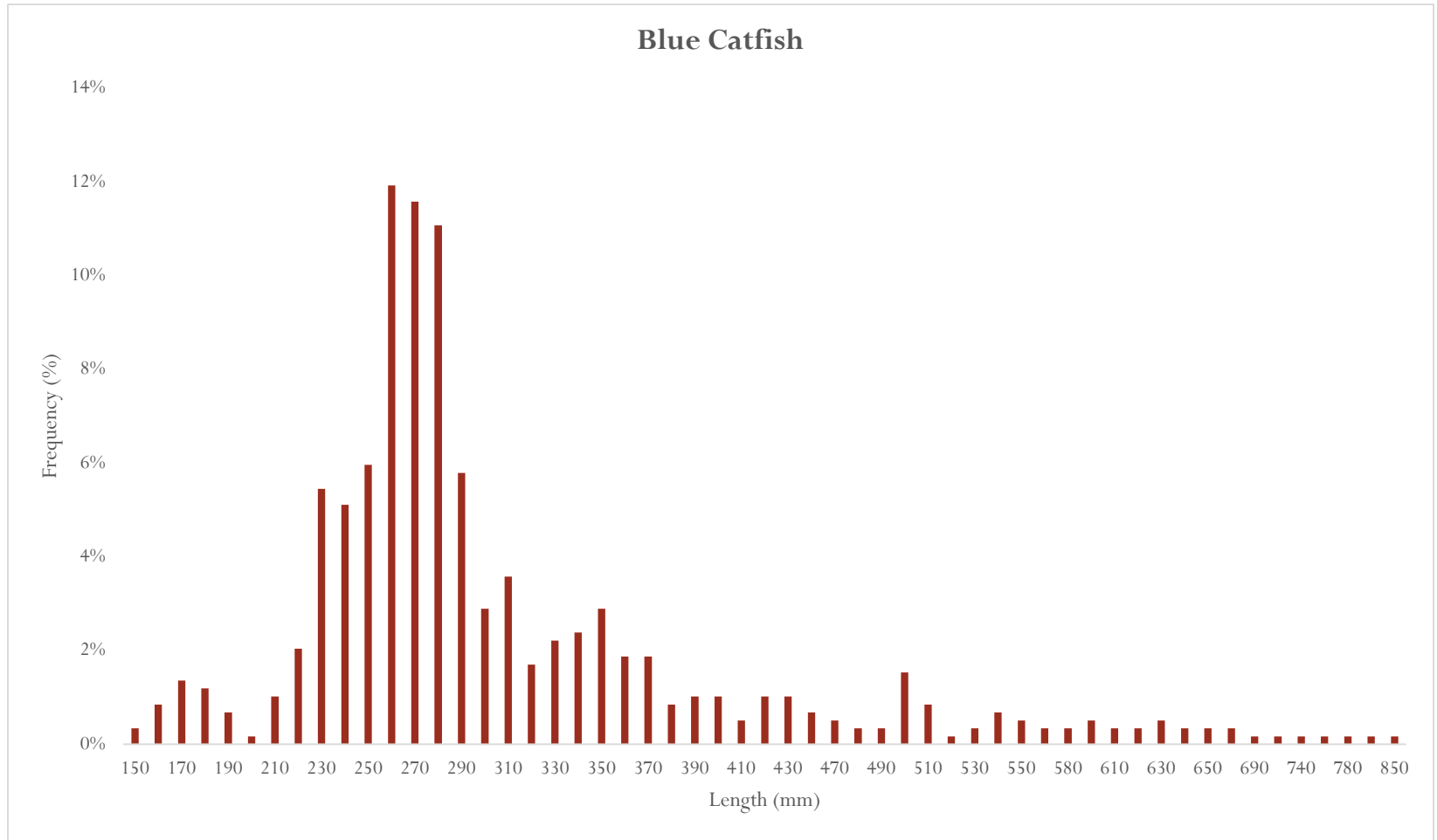
**Texoma**

# Anticipated Regulation Effects

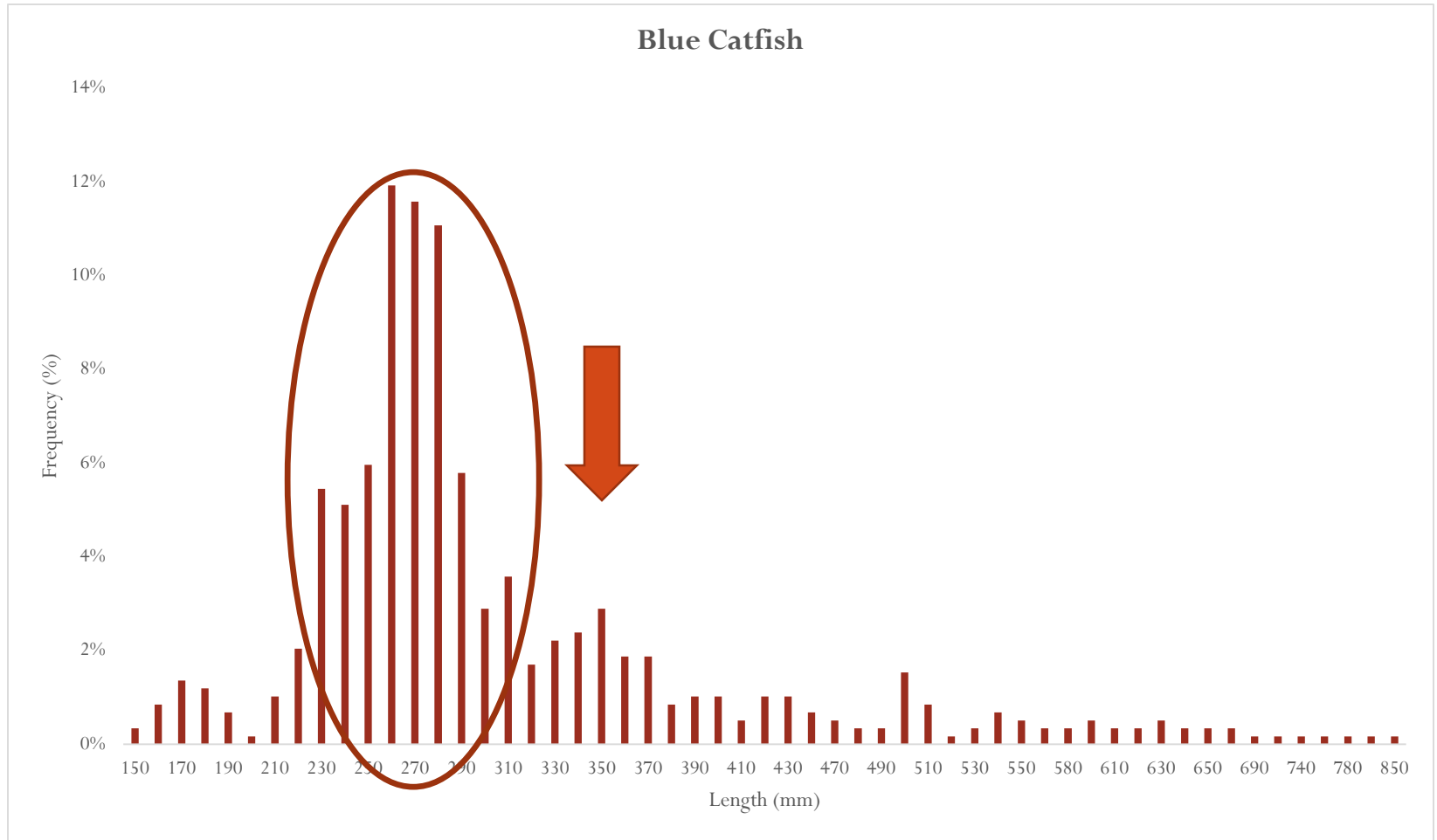
- Size Distribution



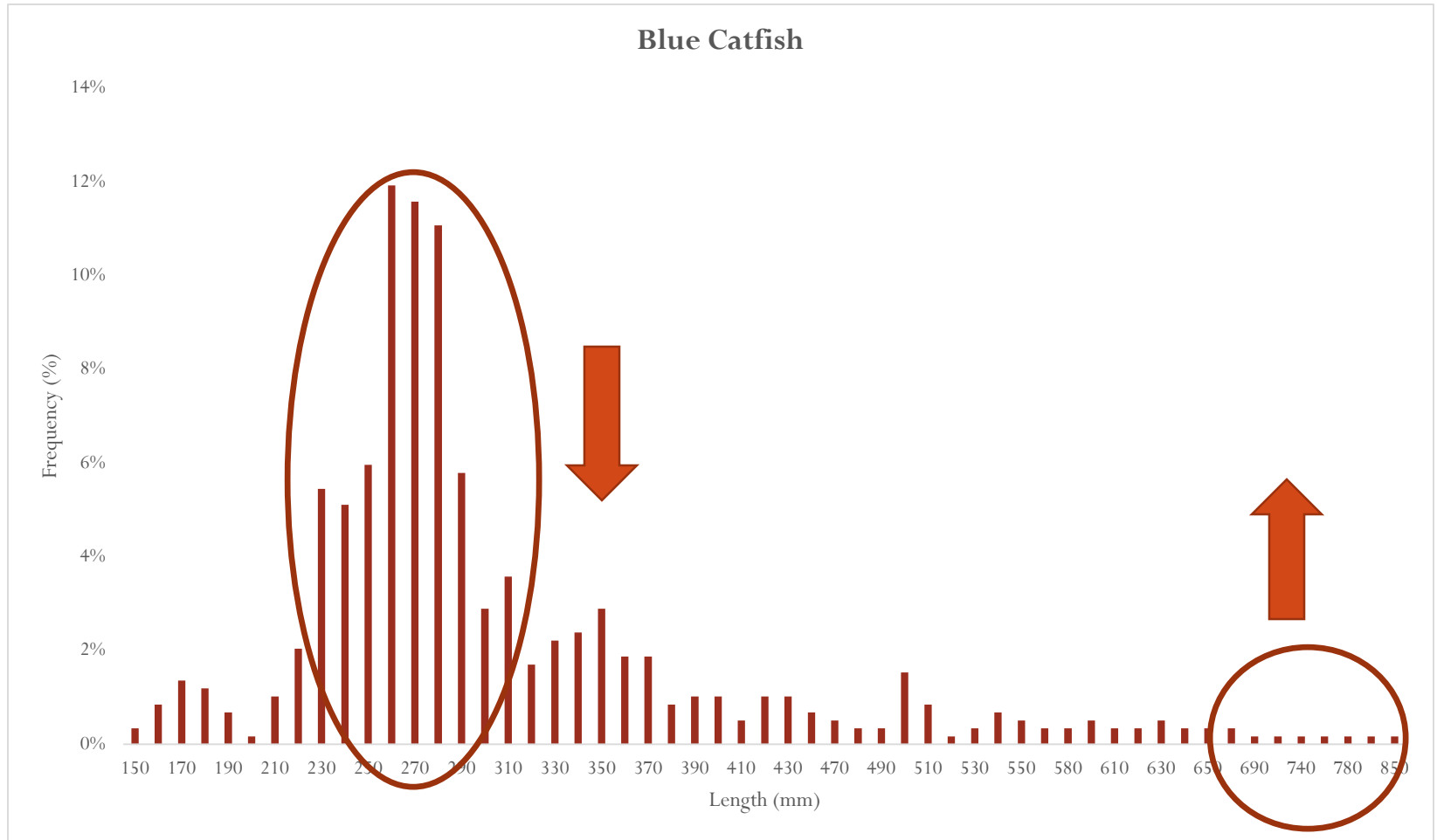
# Anticipated Regulation Effects



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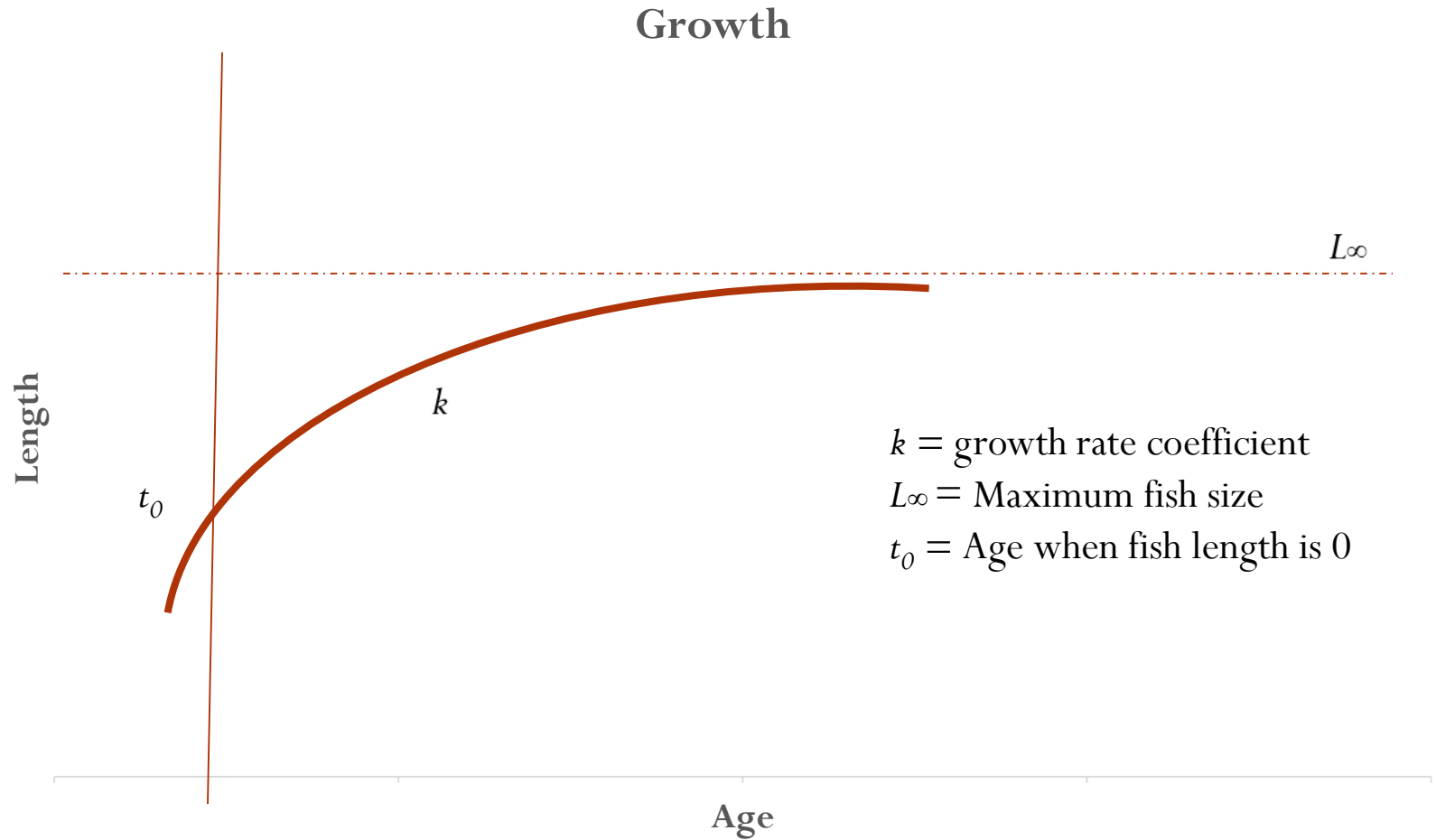


# Anticipated Regulation Effects

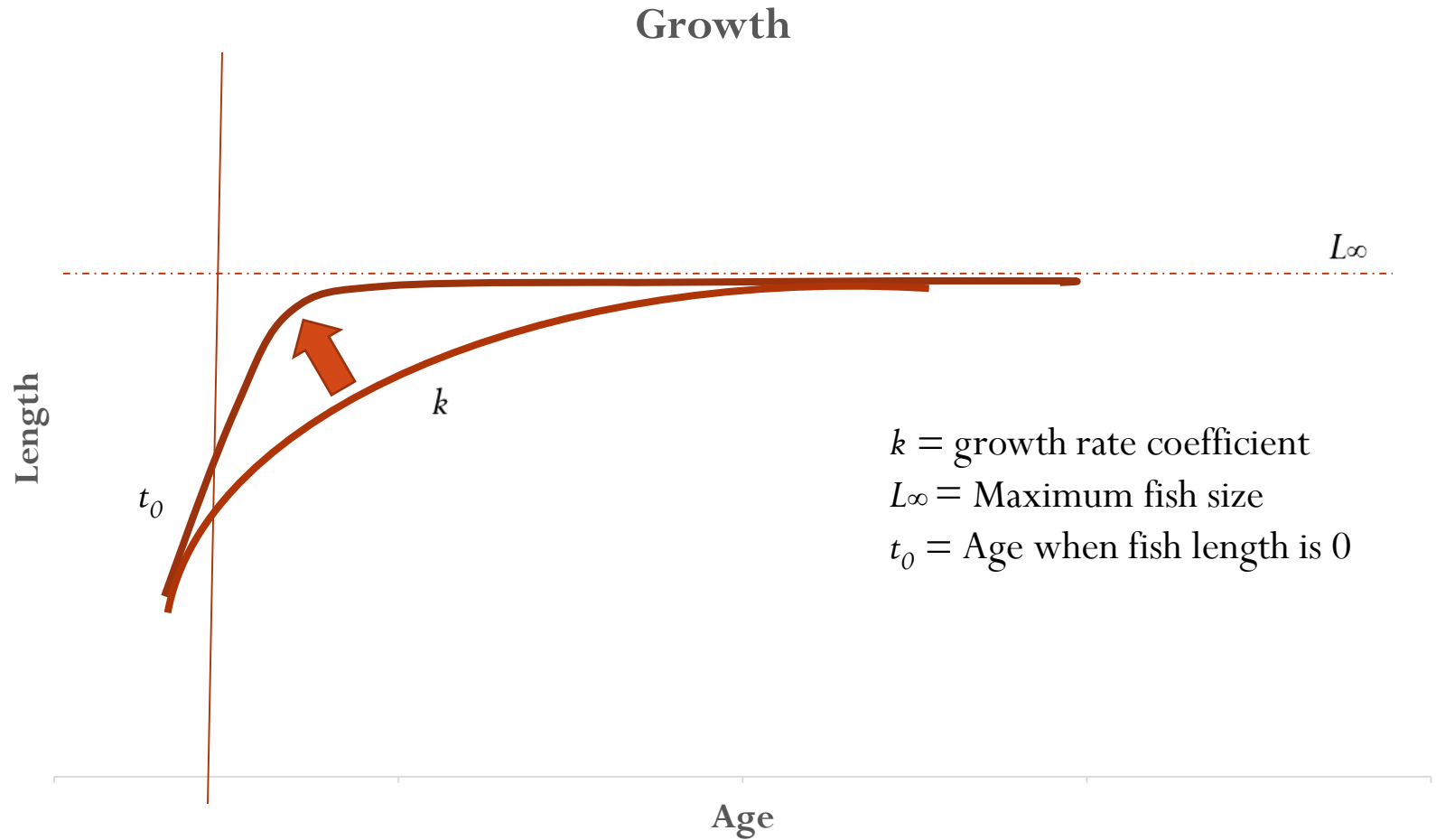
- Size Distribution
- Growth



# Anticipated Regulation Effects



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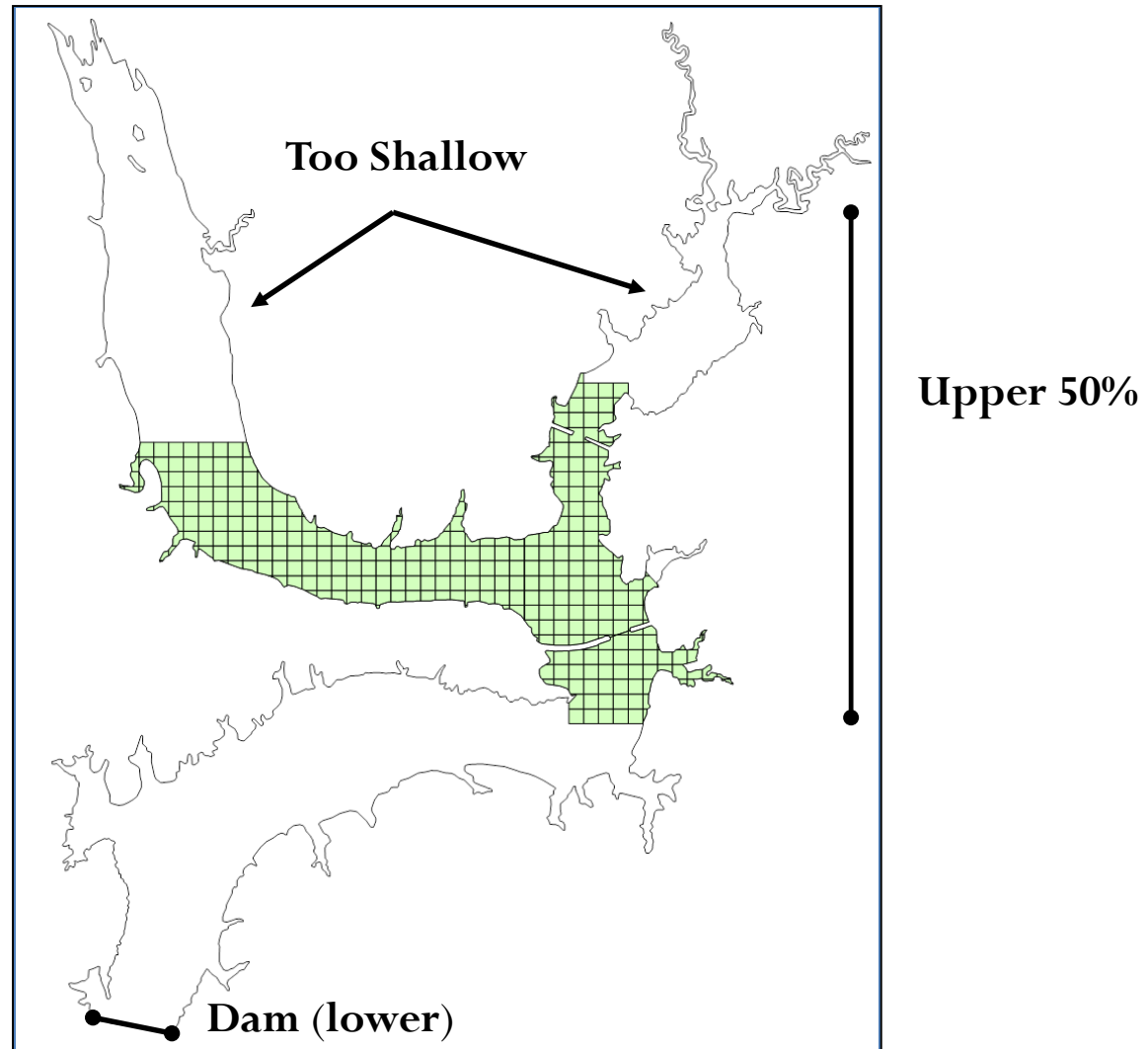
- Size Distribution
- Growth
- Mortality



# Methods – Size Distribution

- Low pulse electroshocking
- Summer 2015-2018
- Upper 50% of lake was sampled
- Depths of 3m to 13m
- 20 sites were randomly selected using a 300m x 300m grid overly

# Methods – Size Distribution

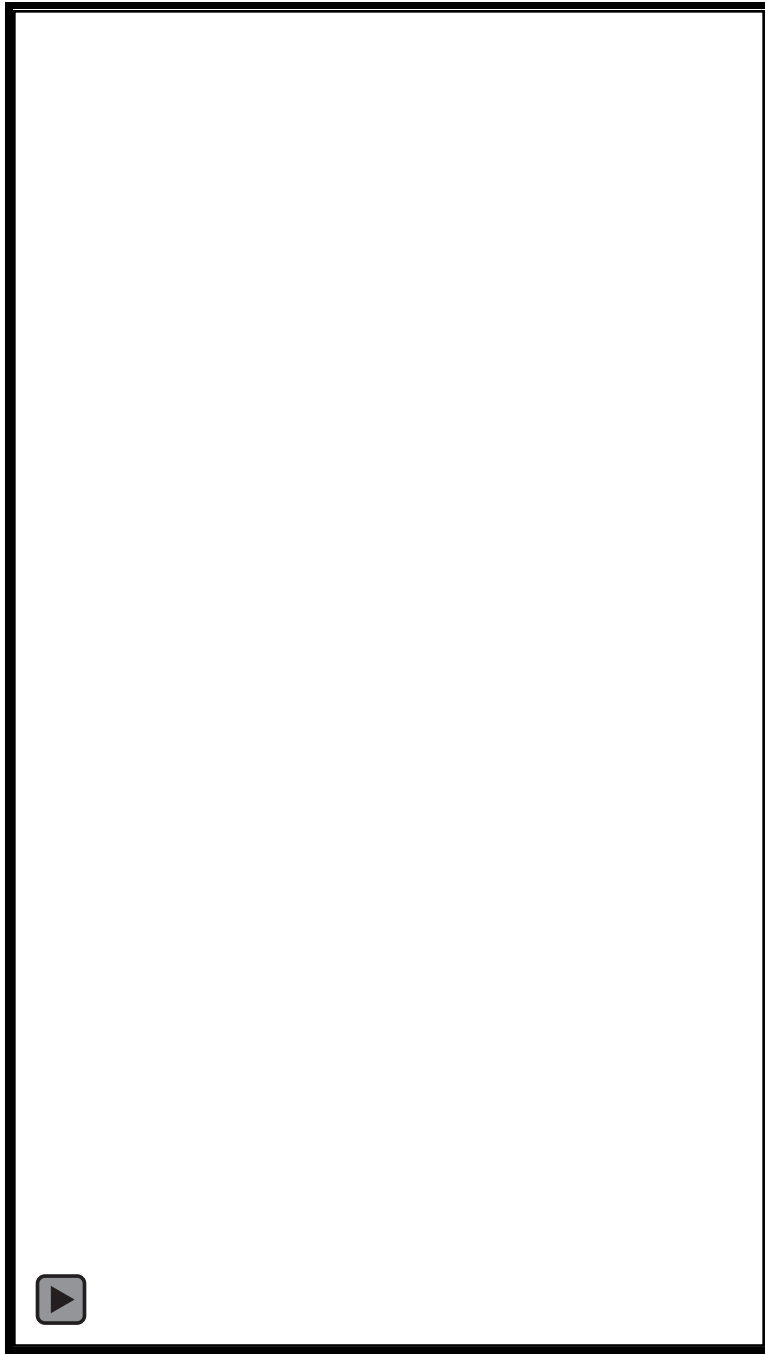




# Methods – Population Evaluation

- 1 shock boat, 2 chase boats each with one dipper
- 5 minute samples
- Samples collected between sunrise and sunset





# Methods – Size Distribution

- Collected Blue Catfish
  - Measured (TL mm)
  - Weighed (g)
- Length frequencies – Kolmogorov-Smirnov two-sample test
- Proportional Size Distributions (PSD's) and PSD-Preferred (PSD-P)

# Methods – Size Distribution

$$\text{PSD} = \frac{\text{Number of fish} \geq \text{Quality size}}{\text{Number of fish} \geq \text{Stock Size}} \times 100$$

- Blue Catfish
  - Stock – 305mm
  - Quality – 508mm
  - Preferred – 762mm



# Methods – Growth

- Lapilli otoliths were removed for aging
- Otoliths were collected from 4 lakes in 2017 and 2018 (Ellsworth, Eufaula, Kaw, Waurika)



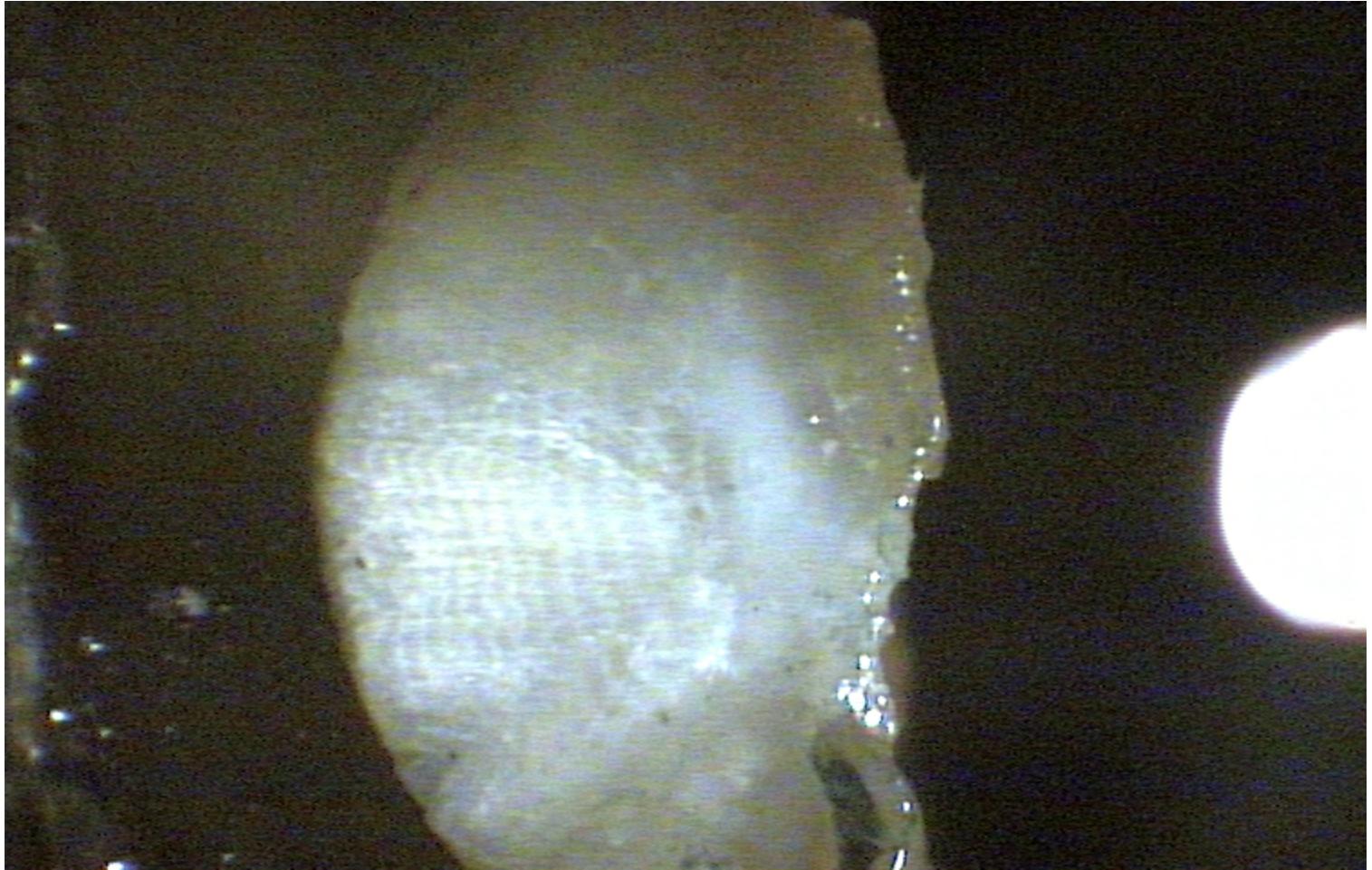
# Methods – Growth

- Otoliths mounted and sectioned
- Ages assigned by two readers and discrepancies resolved by a third reader





# Blue Catfish Otolith



# Methods – Growth

- Growth will be estimated using von Bertalanffy growth model
- Mean length at age and total annual mortality will be compared to pre regulation change data



# Questions???

