



# **Practical Management Tools To Produce Big Crawfish**

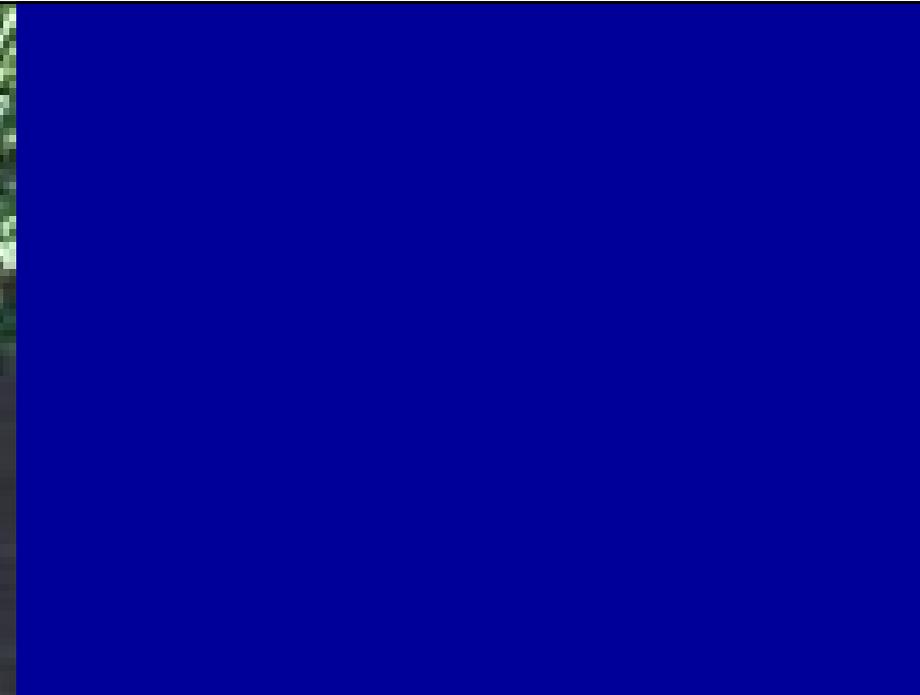
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**Aquaculture Research Station**

**LSU Agricultural Center**

**Louisiana State Seafood Industry Advisory Board**

**August 2, 2005**





<b>Size</b>	<b>Grade by Number</b>	<b>Count/Lb</b>	<b>Wholesale (\$/lb)</b>
<b>Large</b>	<b>1</b>	<b>15 or Less</b>	<b>\$0.70-2.00</b>
<b>Medium</b>	<b>2</b>	<b>16-20</b>	<b>\$0.40-0.90</b>
<b>Small (Peeler)</b>	<b>3</b>	<b>21 or More</b>	<b>\$0.25-0.40</b>
<b>Field Run</b>	<b>Mixed</b>	<b>16 to 35</b>	<b>\$0.40-1.50</b>

# **Numerous Studies (100+) Conducted by LSU AgCenter Since 1975 but most of focus since 1990s**

- **Feeding Trials (Planted Forages, Supplemental Feeding)**
- **Density Trials (How many are just right and how many cause stunting)**
- **Controlling Populations (reducing populations when overcrowded)**
- **Harvesting (frequency/mesh size)**
- **Management Rotations**

# **What Are The Most Important Factors Producing Big Crawfish?**

- **Population Density**
- **Good Food and Plenty of It**
- **Good Water Quality**
- **Harvesting Practices**

# **Aquaculture Research Station, Baton Rouge**



# **Rice Research Station, Crowley**



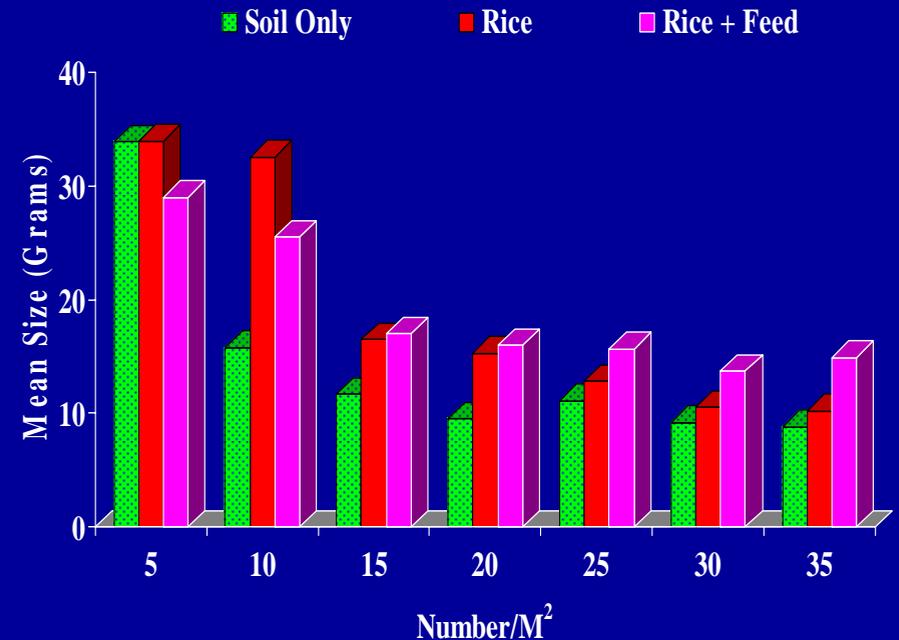
# What Are The Most Important Factors Producing Big Crawfish

- *Population Density (80%)*
- **Good Food and Plenty of It**
- **Good Water Quality**
- **Harvesting Practices**

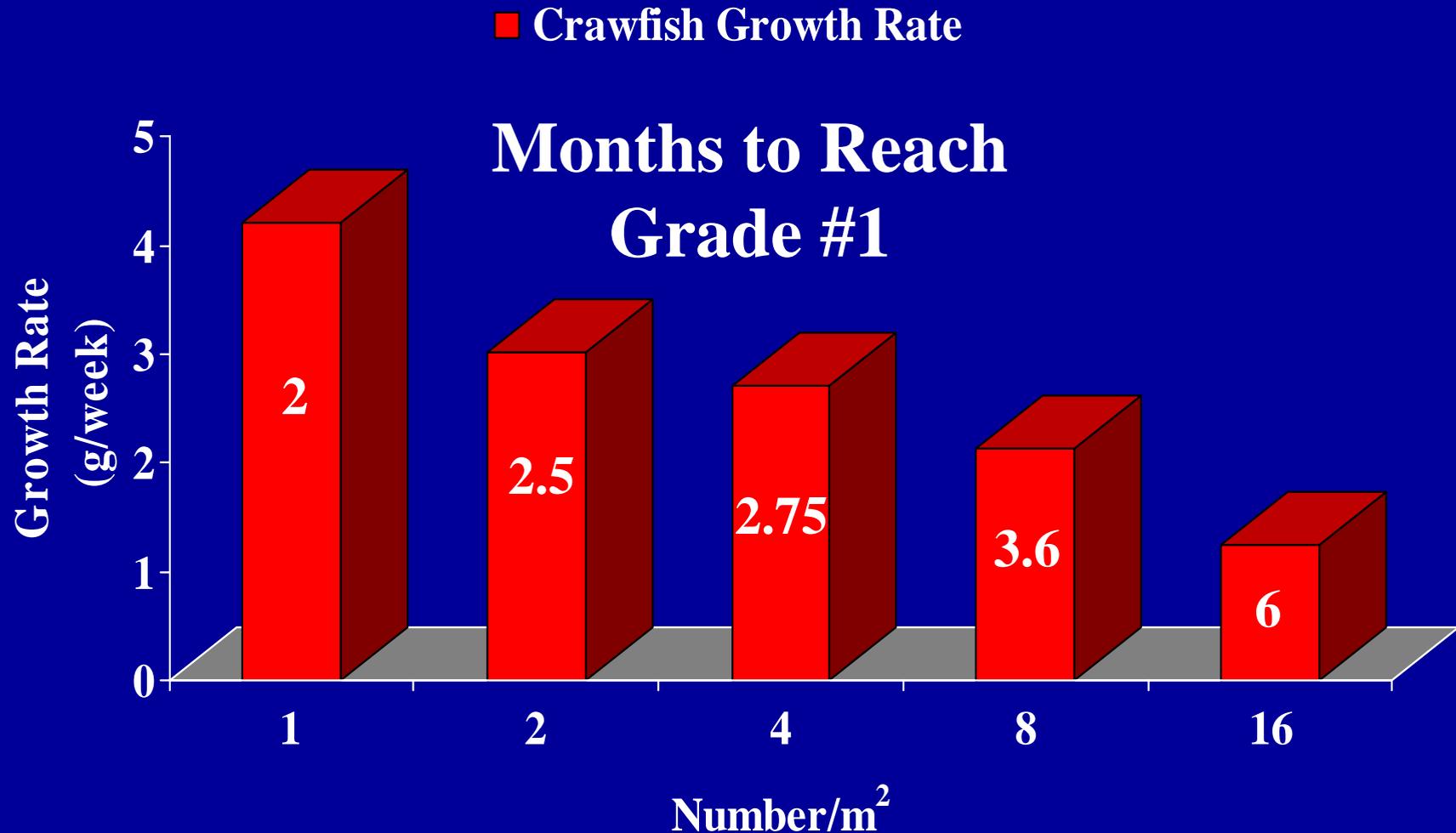
# Factors Affecting Crawfish Size

## *Density*

- **Density Trials (How many are just right and how many cause stunting)**

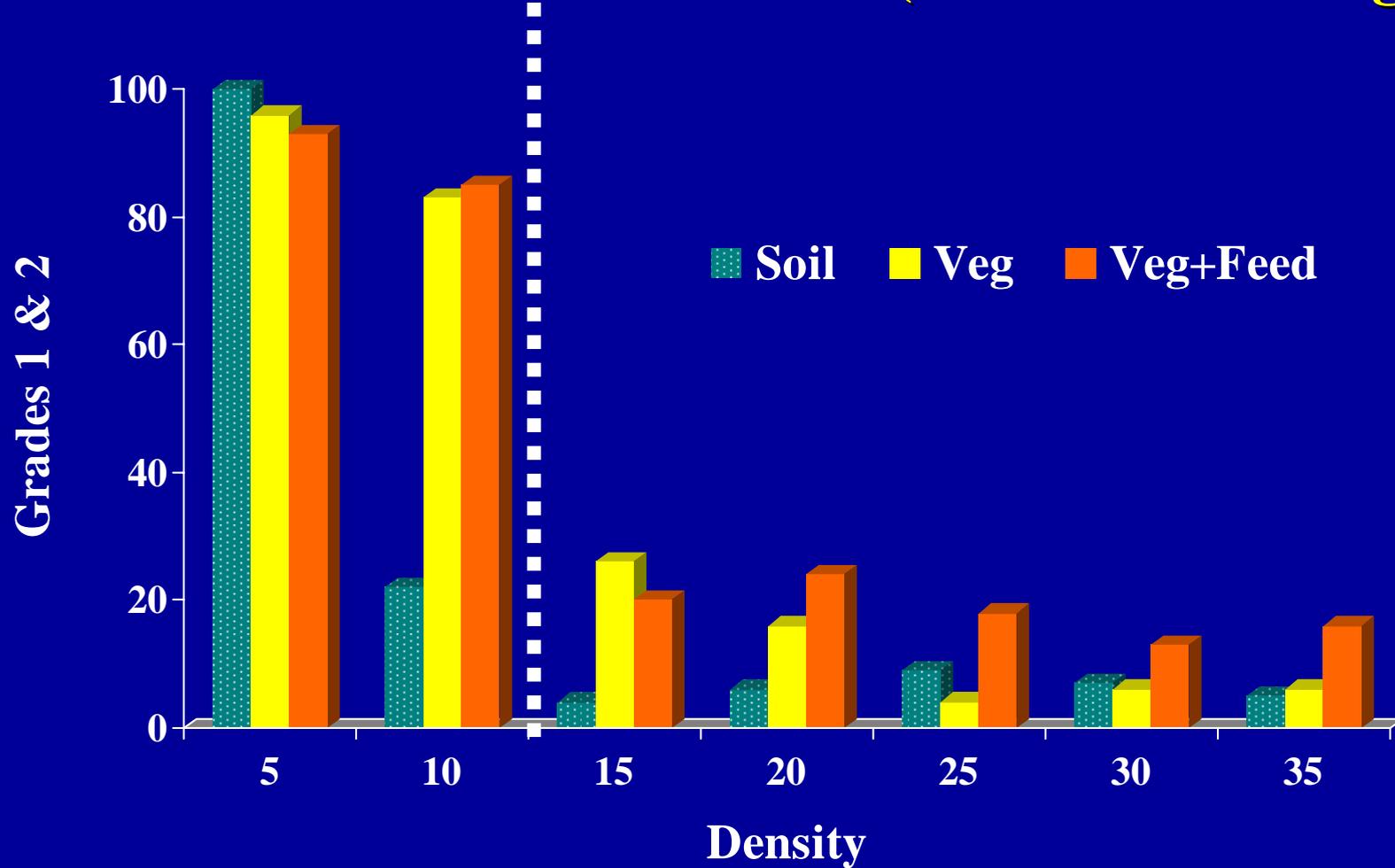


# Effect Of Crawfish Density On Crawfish Growth Rate



# Crawfish Density And Feed Study

## % Crawfish > Grade 1 & 2 (23 count & larger)



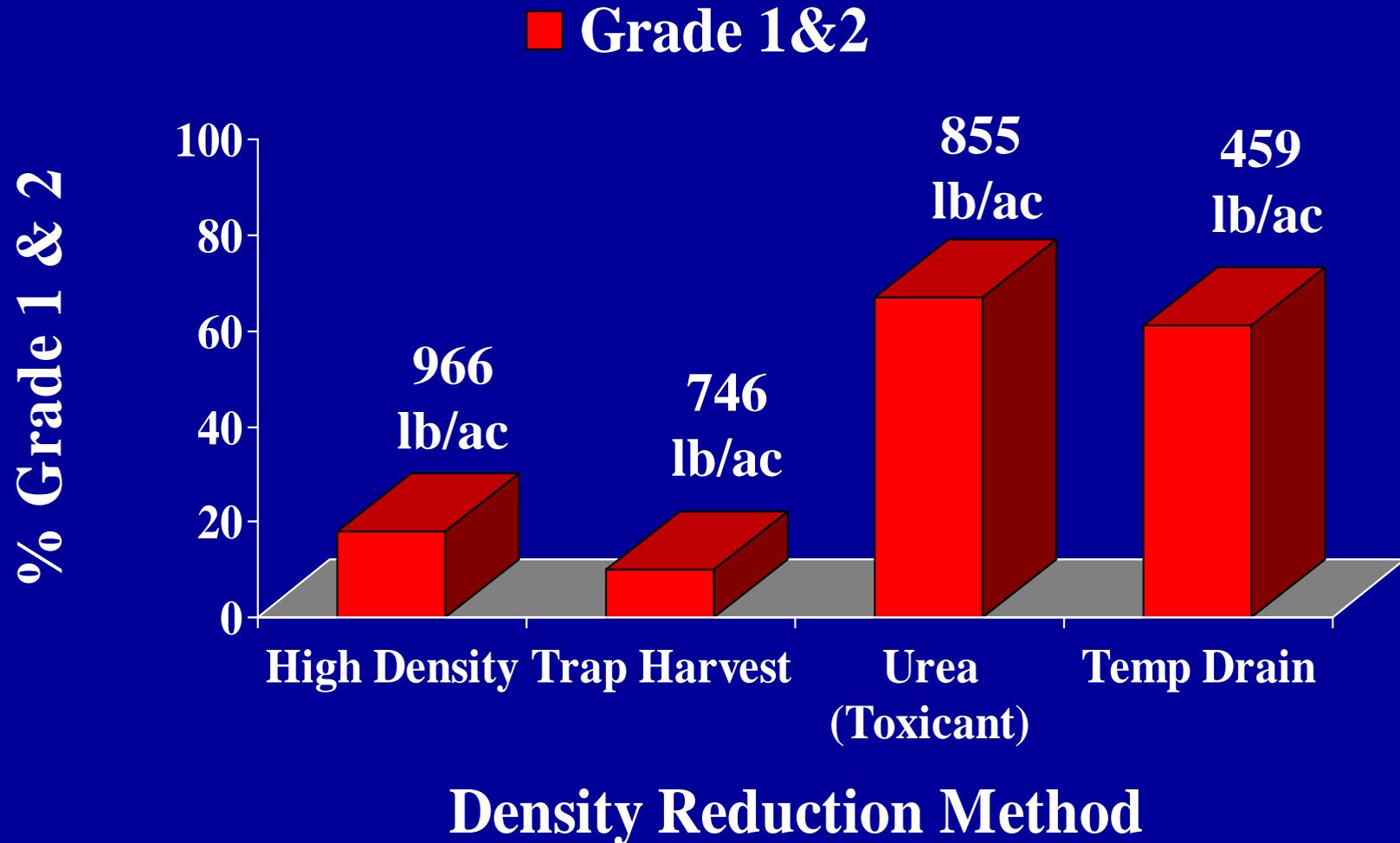
# Agression/Hormones?



# Function of Crawfish Burrowing Area Which Controls Reproduction



# Density Reduction Methods on Crawfish Size and Yield



# **Management Recommendations For Overpopulation**

## **Density Reduction By**

- (1) Chemical Toxicants (*Not Legal?*)**
- (2) Delay Flooding to Kill Young in Burrows**
- (3) Temporary Draining After Fall Flood-up**
- (4) Trapping Stunted Crawfish & Relaying**
- (5) Rapid Draining in Spring to Kill Adults**

# **If Pond Has Not Been Flooded Then, Delay your Flooding Until November**

- **Kills Some of the Young Crawfish in the Burrows**
- **Reduces Pumping/Water Management Costs**
- **Delays Harvest Until Spring, But Reduces Harvest Cost**
- **Lower Prices in Spring, but if Many Crawfish are Jumbo/Large Grades Then Price will Still be Good**
- **May Result in Too Many White Crawfish**

# **If Pond Has Been Flooded, Then Drain Pond and Re-flood in a Couple of Weeks**

- **Kills Many Young from Early Spawning,  
Not Later Spawns**
- **Delays Harvest/Reduces Harvest Cost**

**Crawfish Numbers Must Be Reduced**  
***Early In Production Season***  
**(November Through February)**  
**If Big Crawfish Are To Be**  
**Produced!!!**

# **Moving Young/Stunted (Peeler) Grade Crawfish to Another Pond (Relaying)**

**Move Crawfish to Environment with Good Food, Good Water and Low Density and They will Grow Fast**



# *\*Crop Rotations\**

- **Leave Pond (Field) Out of Production for 1+Years**
- **At Present, Most Effective Density-Reduction Procedure**



# **What Are The Most Important Factors Producing Big Crawfish**

- **Population Density**
- **Good Food and Plenty of It**
- **Good Water Quality**
- **Harvesting Practices**

# Numerous Feedings Trials Conducted Since 1975 – Planed Forages and Supplemental Feed



**At flood-up; October**



**November**



**December**



**January**



**February**



**March**



**April**



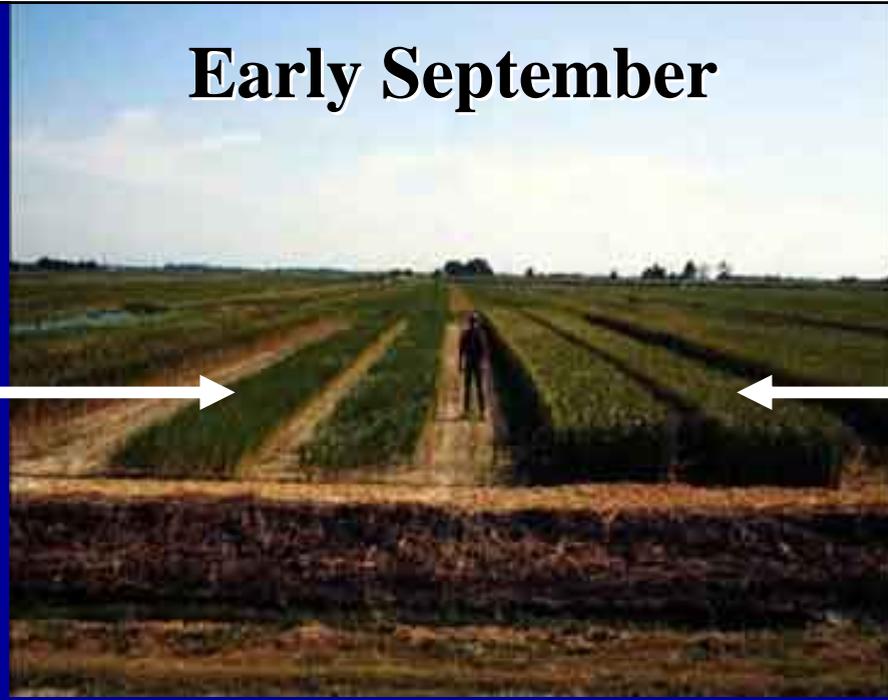
**May**



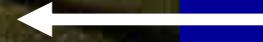
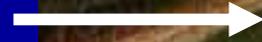
**Draw-down; June**



**Early September**



**August Planting**



**June Planting**

**Mid October**



**Mid April**



# What About Supplemental Feeding?

## Many Studies and Trials



- **Marginal Results with Either Hay or Pelleted Feeds**
- **Increase in Crawfish Yield (lbs/acre) and Meat Yield but Little Increase in Size**
- **Economics – We don't recommend because we don't think it is cost effective at this time**

# **What Are The Most Important Factors Producing Big Crawfish**

- **Population Density**
- **Good Food and Plenty of It**
- **Good Water Quality**
- **Harvesting Practices**

# - Water Quality -



# Good Water Quality

*Low Oxygen*

**Slow Growth**

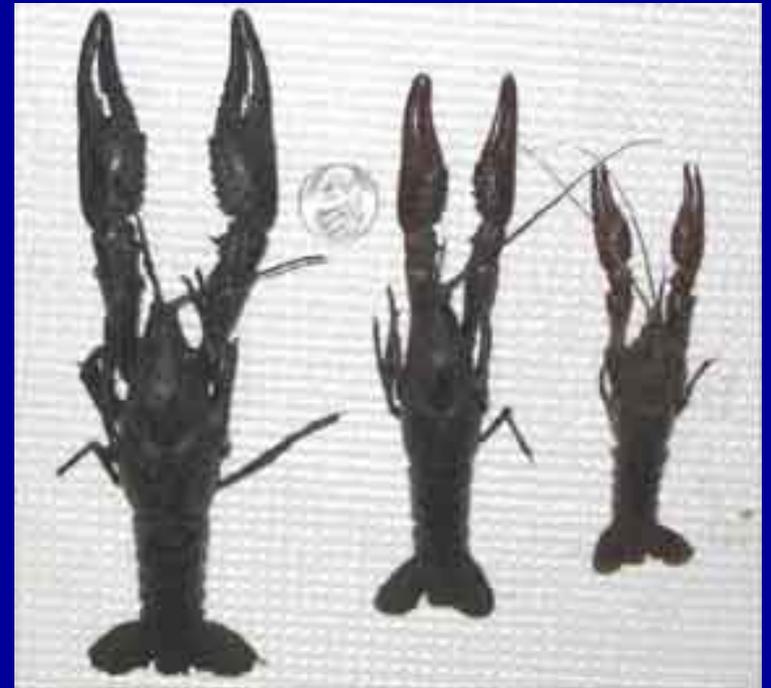
**Small Size**



*No Oxygen*

**Dead Crawfish**

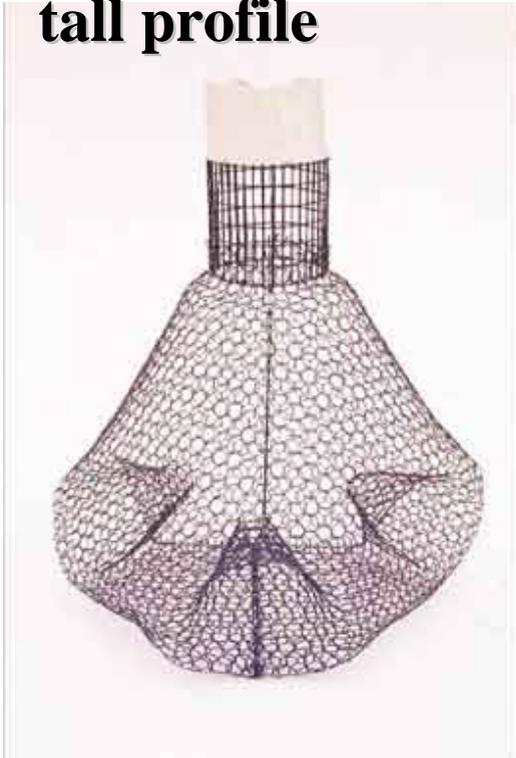
**Large Size**



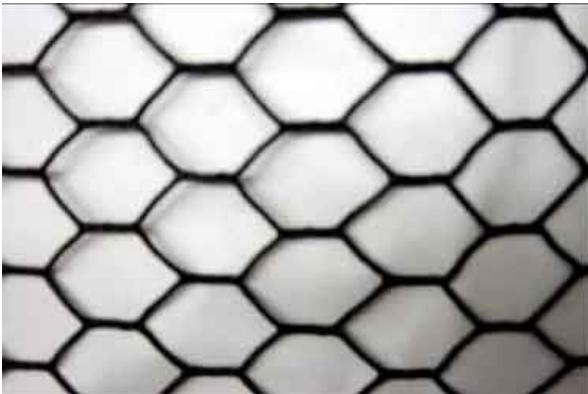
# Does Harvesting Practices Affect Production of Big Crawfish?



**tall profile**



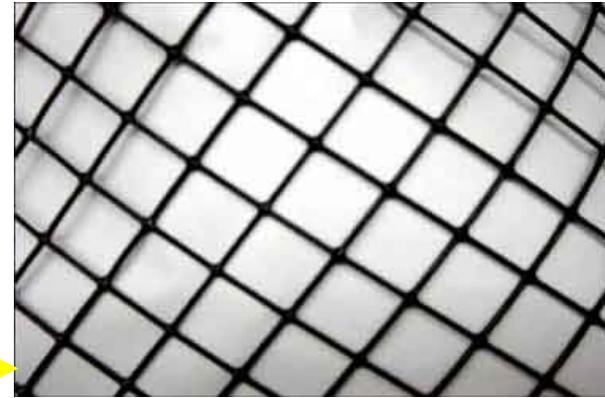
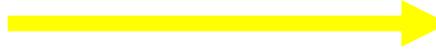
**standard profile**



**3/4" Hex Mesh - Old Style**



**3/4" Square Mesh - New Style**



**Frequent Harvesting – catch crawfish  
before they can grow to big size**



**Infrequent Harvesting – overpopulate and  
stunt**

**From 6 or 7 days per week**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓
	✓	✓	✓	✓	✓	✓
✓	✓	✓	✓	✓	✓	✓

**To 3 or 4 days per week**

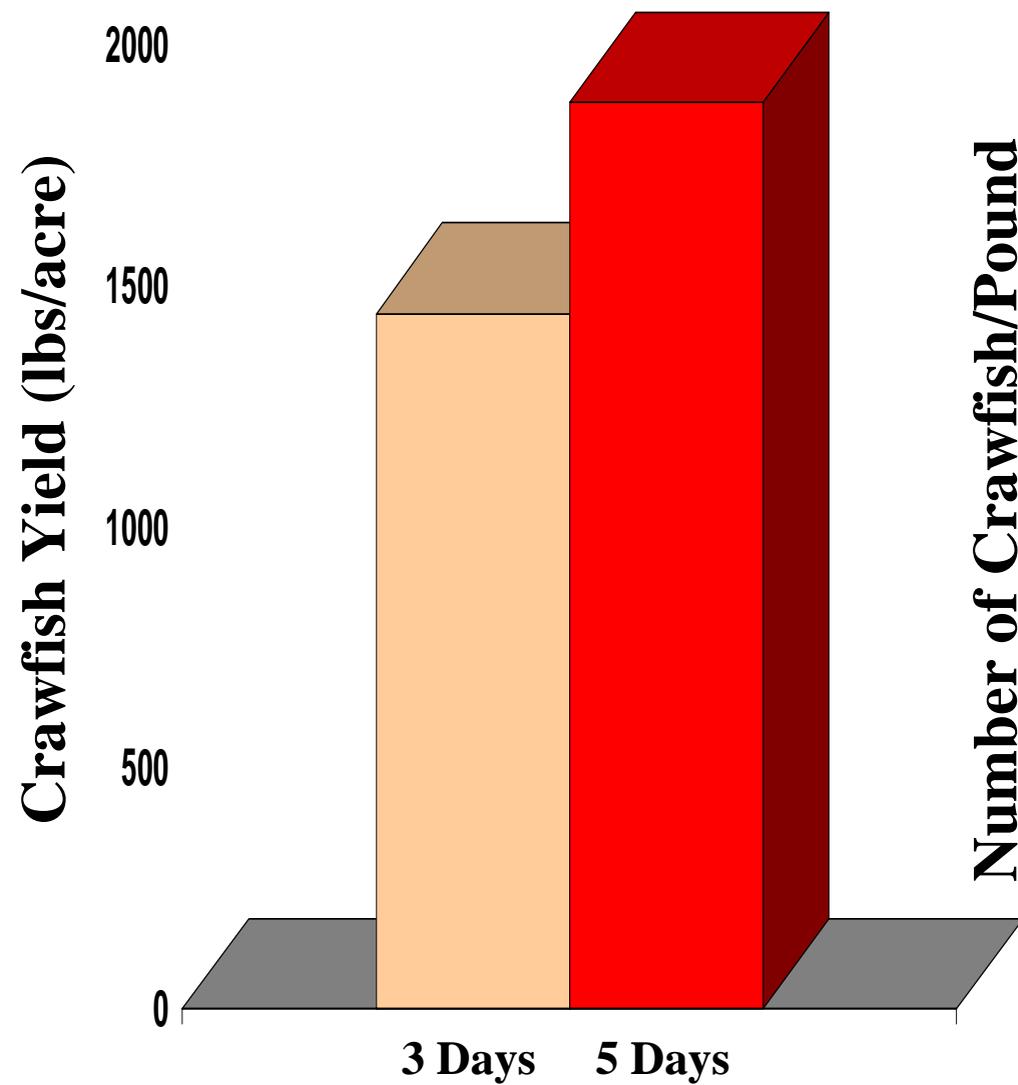
Sun	Mon	Tue	Wed	Thu	Fri	Sat
				✓	✓	✓
			✓	✓	✓	✓
				✓	✓	✓
			✓	✓	✓	✓



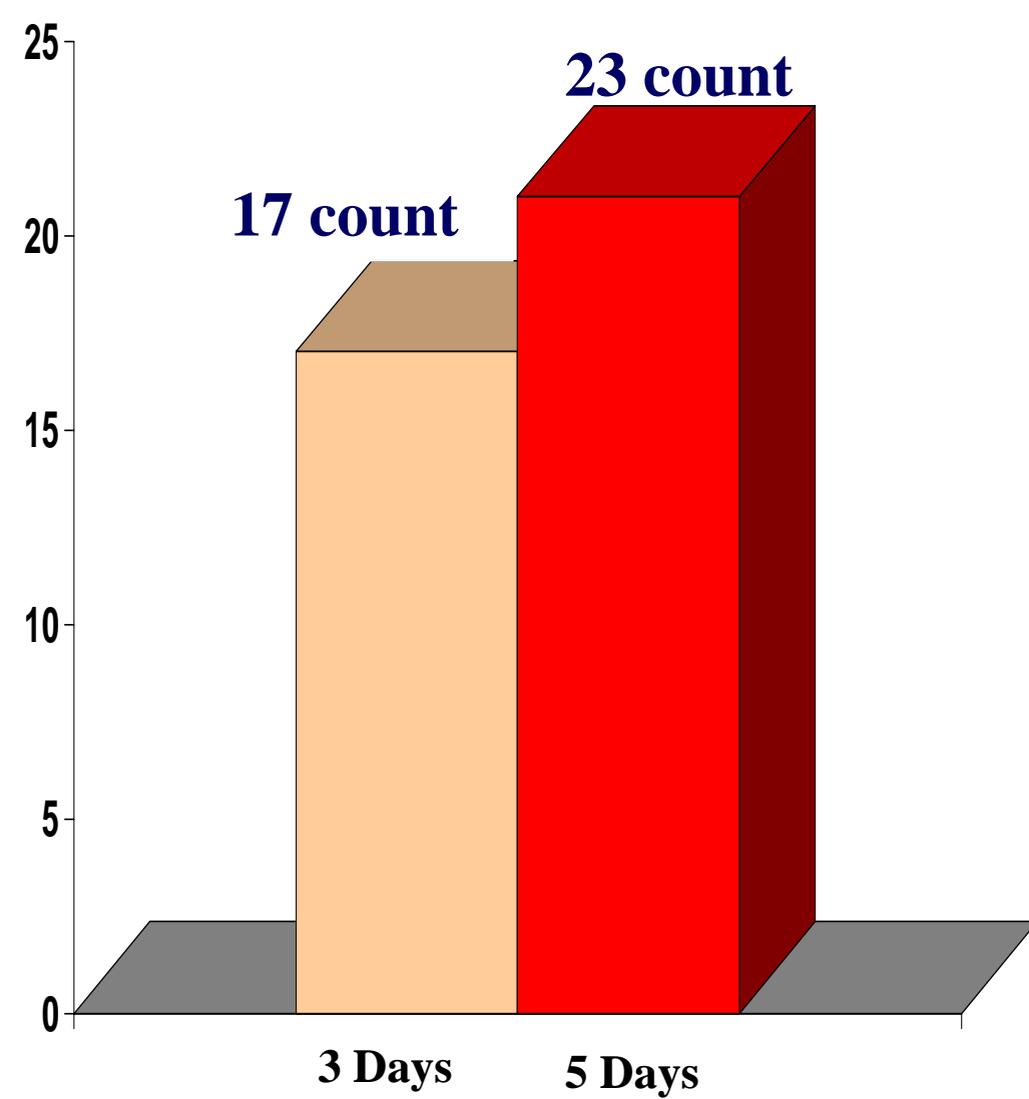
**Every other day for larger crawfish**

Sun	Mon	Tue	Wed	Thu	Fri	Sat
		✓		✓		✓
	✓		✓		✓	
✓		✓		✓		✓
	✓		✓		✓	

**+17% 5 days**  
**-40% Cost**



**+20% size increase**



# Fewer Traps Days per Week (3 to 4) In Most Cases Better than More Days/Week (6 to 7)



# !!!Balance Needed Between Forage, Water Quality, and Number of Young!!!

Obtaining this Balance is The Most Difficult Problem  
in Managing Crawfish Ponds

## *Good Balance*

- Big Crawfish/High Yield
- Good Profit

## *Poor Balance*

- Small Crawfish/Low Yield
- Low/No Profit



**Poor Forage Stand**



**Hasten Forage Depletion**

**High % of Peeler-Grade  
Crawfish**

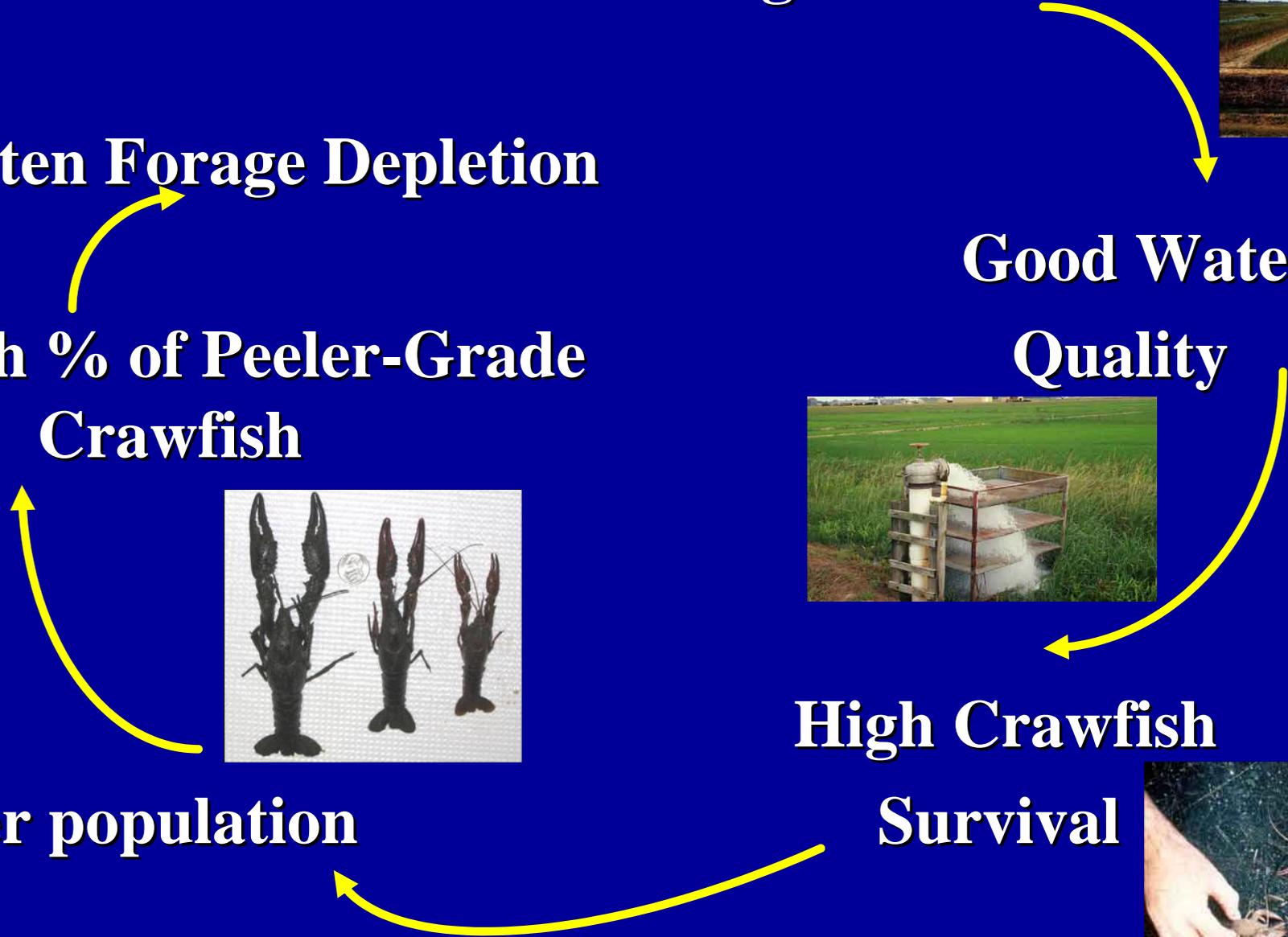


**Over population**

**Good Water  
Quality**



**High Crawfish  
Survival**



# Questions?

