

Selectivity with the # 330 Rotating Jaw Trap

By

Robert Gotie

Marie Kautz

Edward Kautz

Mark Brown

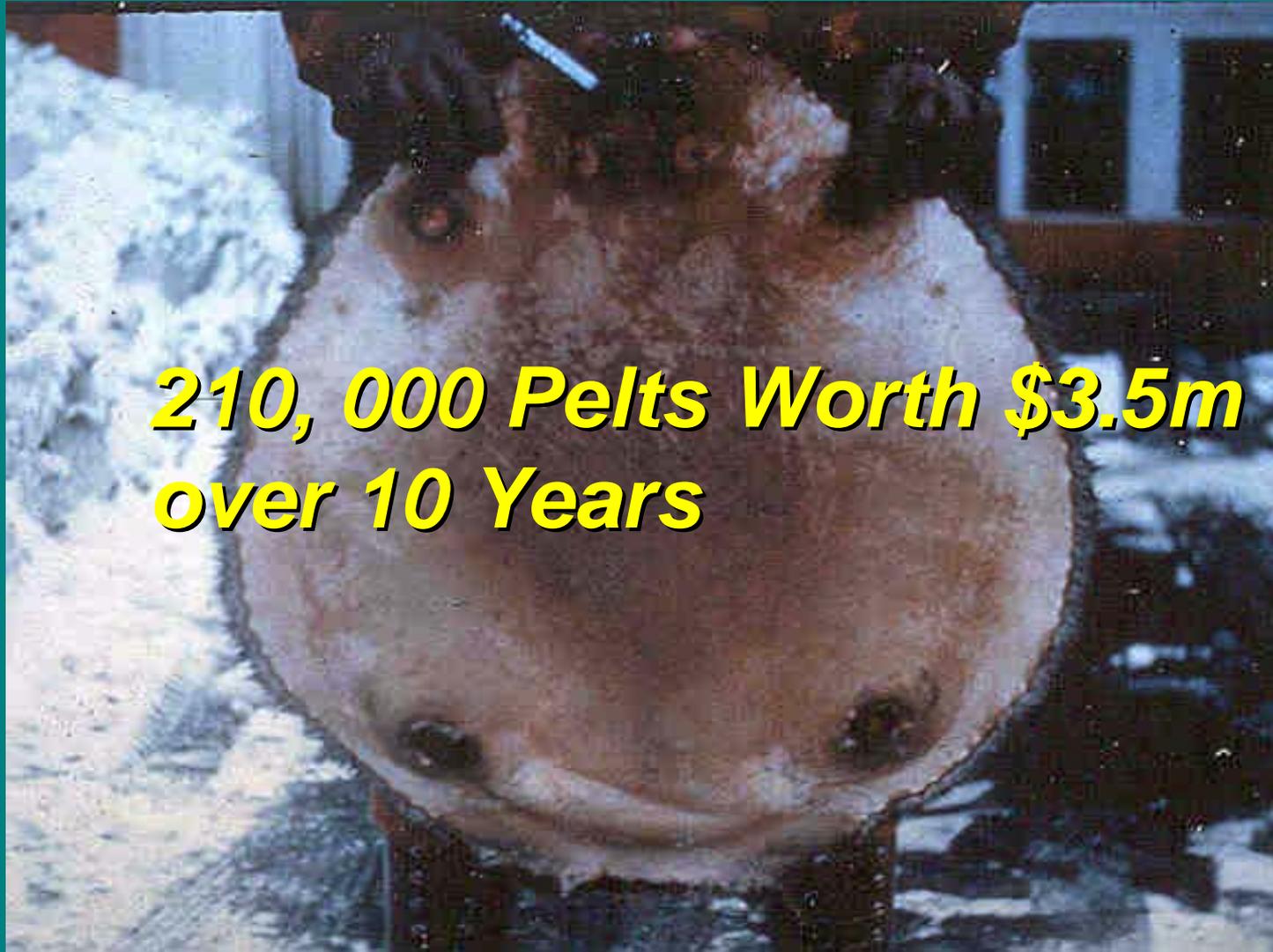


Ecological and Economic Importance of Beaver

***250,000 Acres Wetlands
Maintained annually***



Ecological and Economic Importance of Beaver



***210, 000 Pelts Worth \$3.5m
over 10 Years***

Ecological and Economic Importance of Beaver

***2000 to 2500 Beaver Damage
Situations Annually***



Ecological and Economic Importance of Beaver

***Trapping is Essential for
Managing Beaver Populations***



Conflict with River Otter Restoration

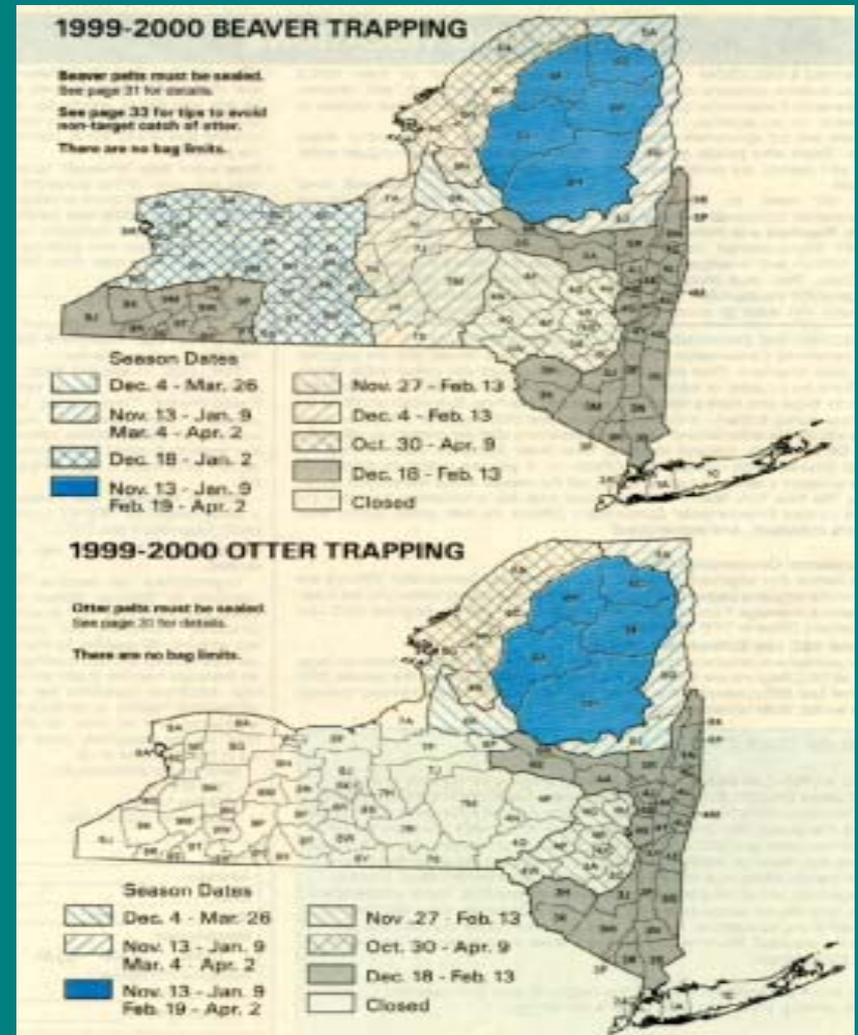


24 Otters Reported Since 1995

....And Management

Annual Season Regulations

Beaver Season Extensions

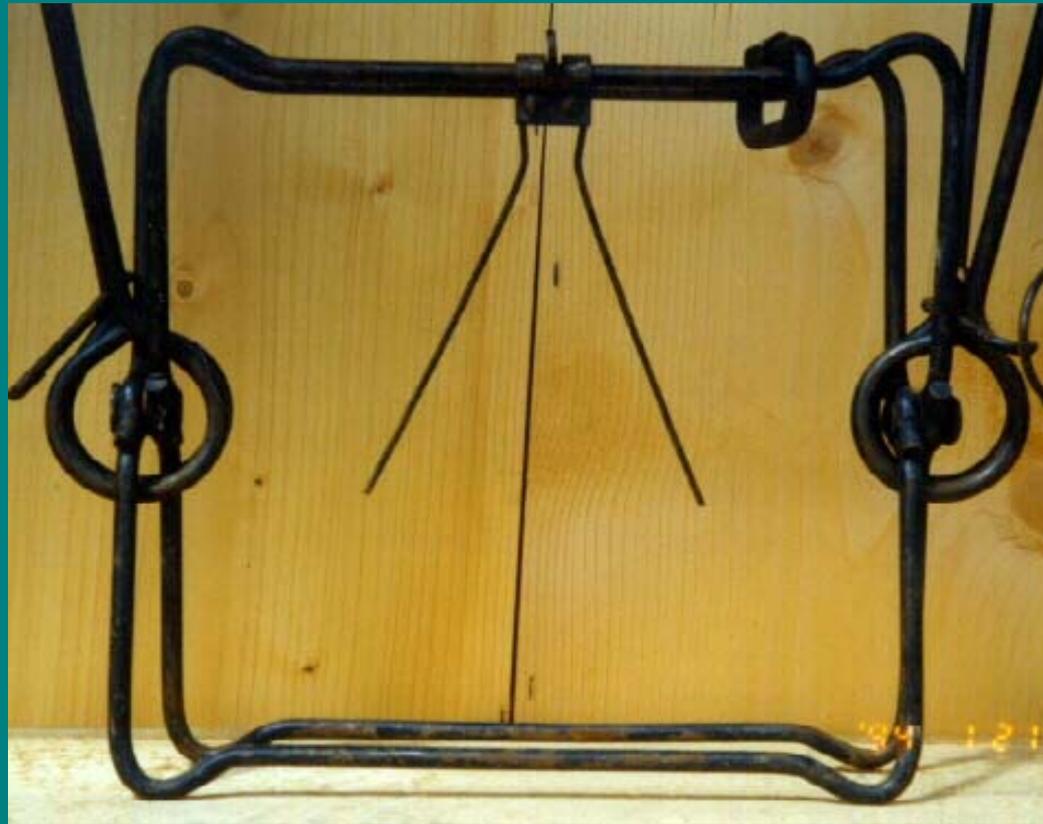


1997 Survey Results in NY

- ***93% of Trappers Use #330 Trap***
- ***72% of Beaver Taken in #330's***
- ***57% of Otter Taken in #330's***
- ***76% of Otter Taken in same set locations as Beaver***

***Continuous Improvement in Otter Management
Contingent on Finding a more Selective Beaver
Trap***

Can It Be Made Selective For Beaver?

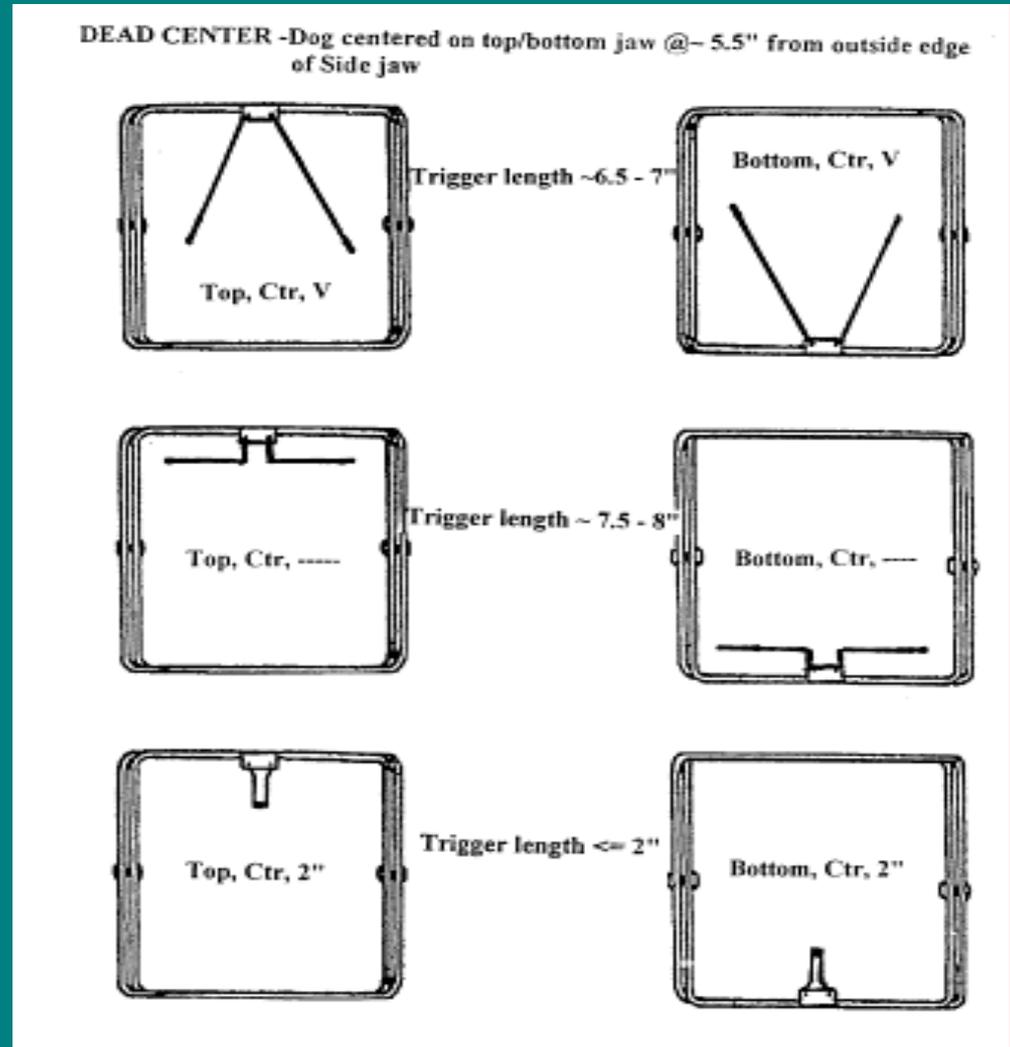


Two Phase Study Design to Test Selectivity of #330 Trap



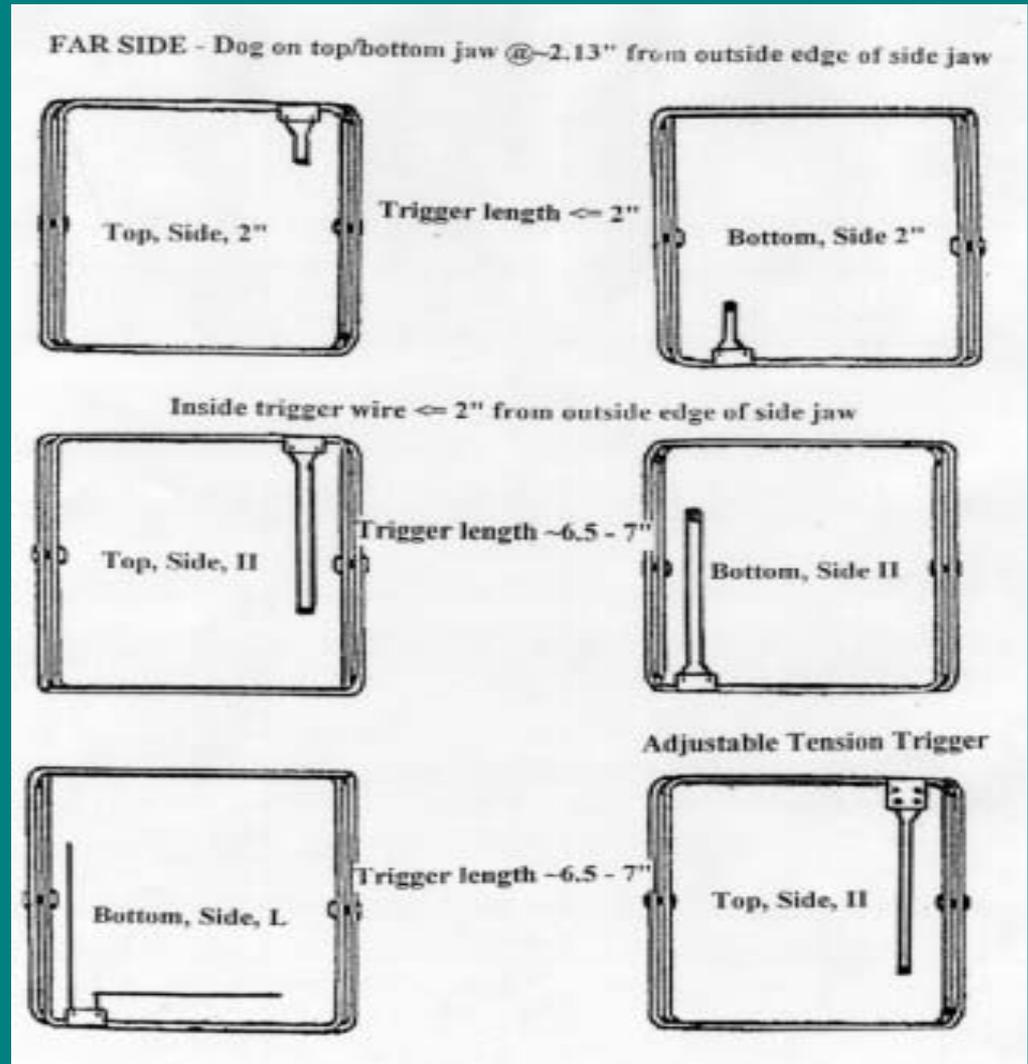
Experimental Trials: Select Trigger Configurations

Center Mounted Triggers



.... And

Side Mounted Triggers



Experimental Trials: Test Live Animals

12 Trap Stations

*Random
Placement of Traps*

*Alternating
Circular Path*



Beaver Trials



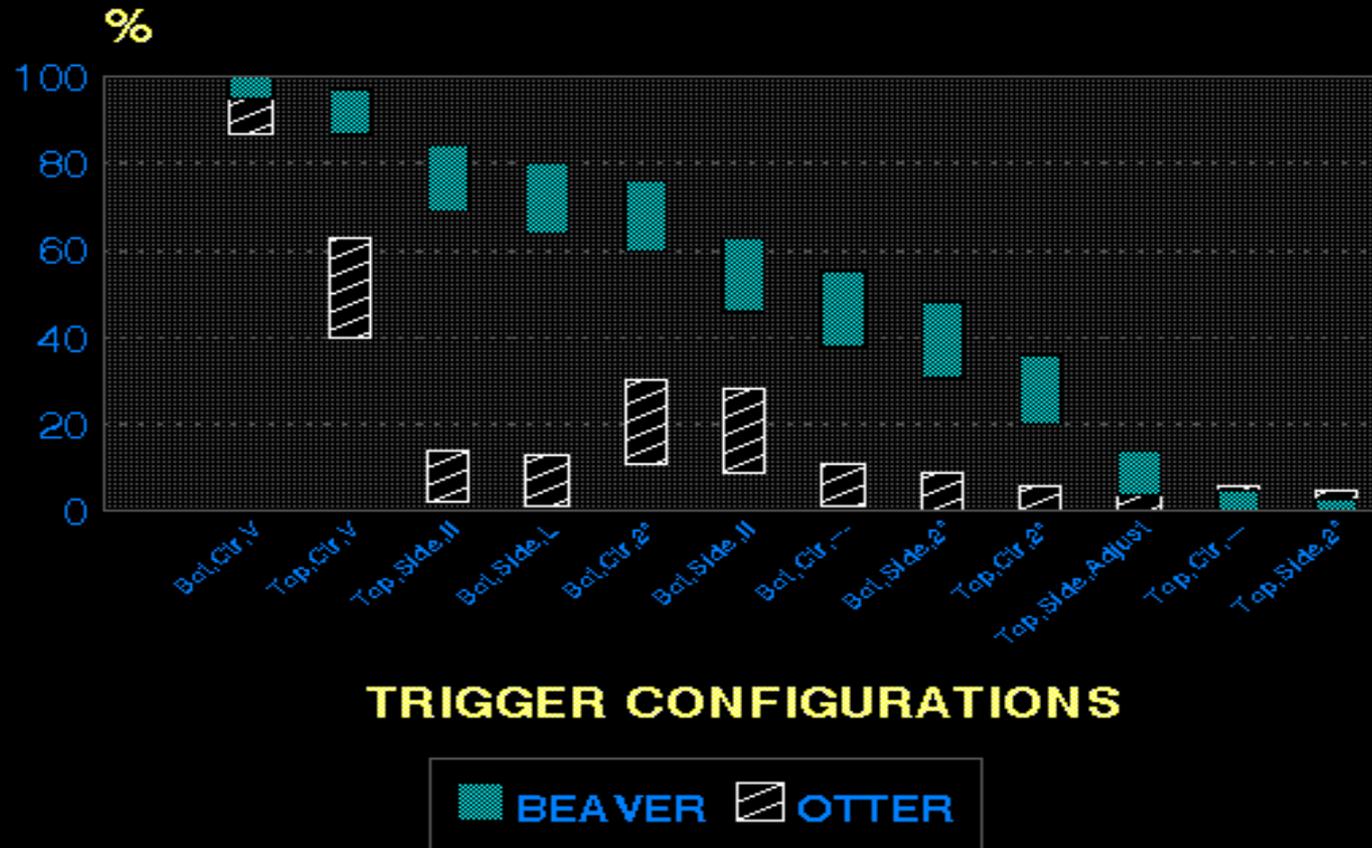
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River Otter Trials



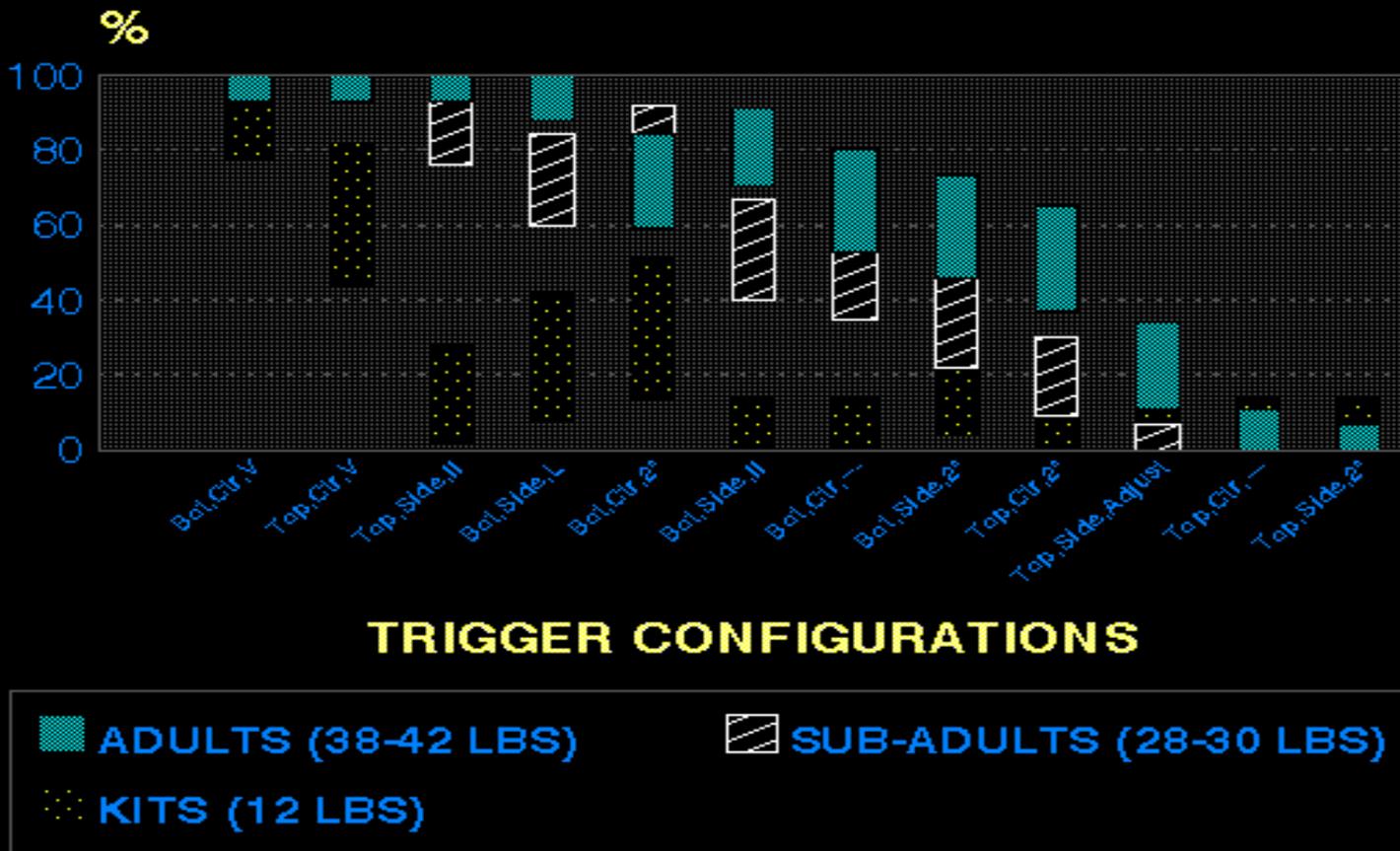
Experimental Results

FIGURE 3. FIRING RATE (90% C.I.) FOR ALL BEAVER AND OTTER IN #330 ROTATING JAW BEAVER TRAP



Experimental Results: Beaver Weight Class

FIGURE 2. FIRING RATE (90% C.I.) FOR BEAVER OF DIFFERENT WT CLASSES IN #330 ROTATING JAW BEAVER TRAP



Field Trials: Select Best Trigger

- *Similar Firing Rate for Beaver > 25 lbs*
- *Firing Rate <20% for Otter*
- *Inexpensive to Produce*



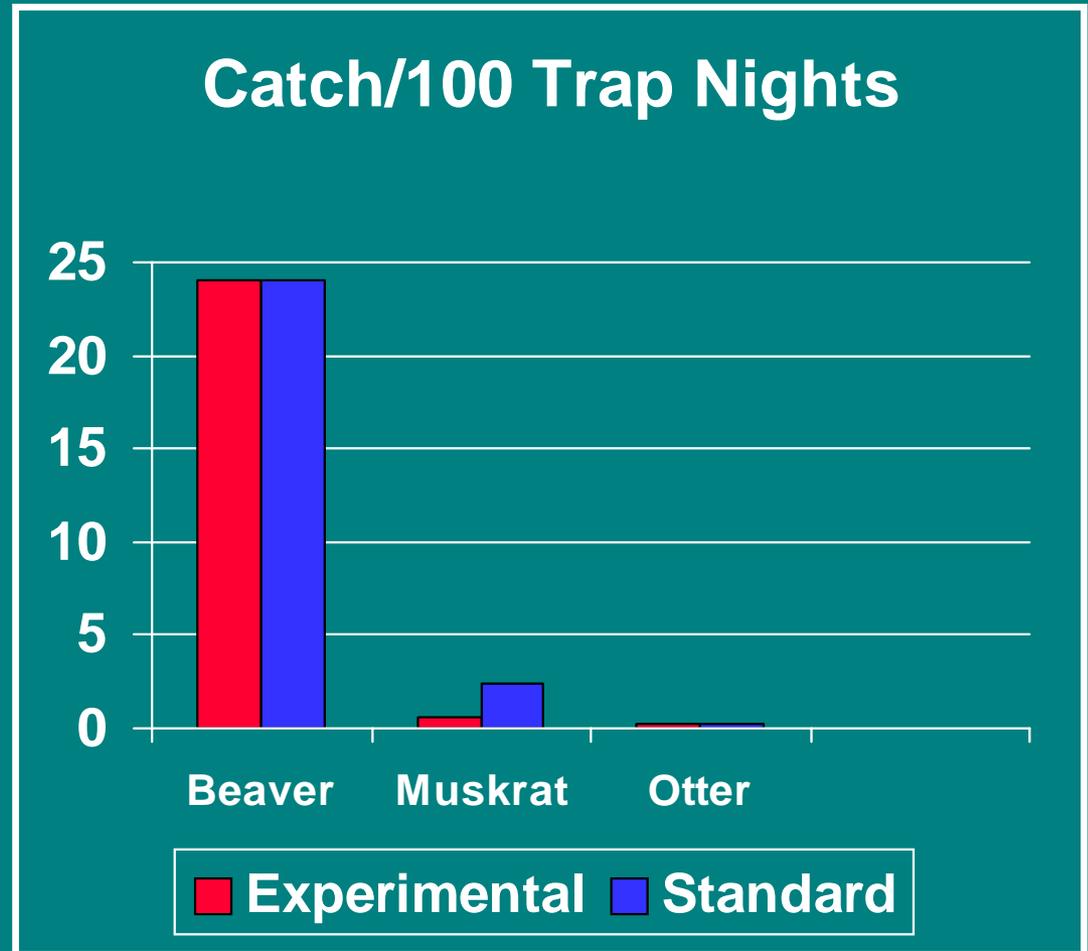
Test Traps (Std Vs Exp) during Trapping Season

- *Measure Difference in Beaver Catch Rate*
- *10 NY Trappers*
- *5 Pairs of Traps/Trapper*
- *Goal :189 Pair Nights*



Field Results

- **13 Trappers**
- **451 Pair Nights**
- **216 Beaver**
- **14 Muskrats**
- **2 Otter**



Beaver Catch Rate

- ***24/100 Trap Nights
- Both Triggers***
- ***No Significant
Difference in Catch
Rate (McNemar
paired test $P = 1.0$)***

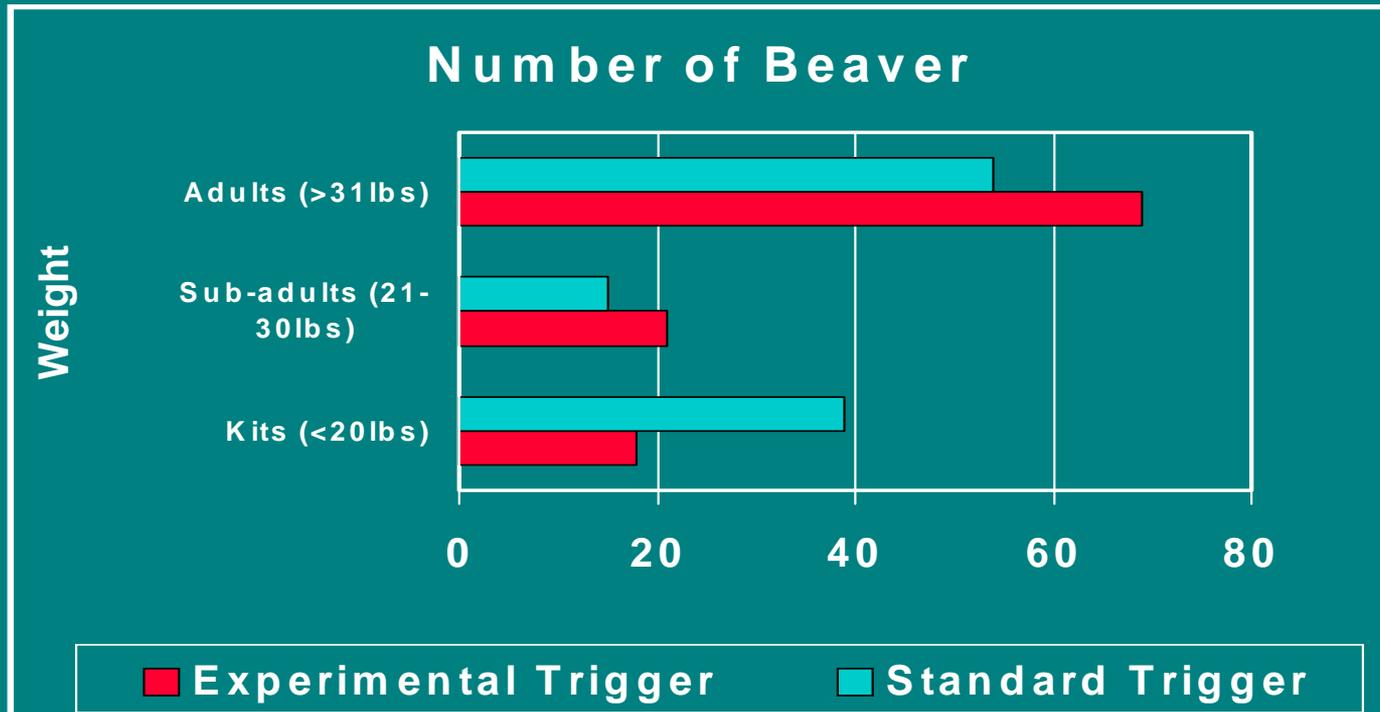


Difference by Weight

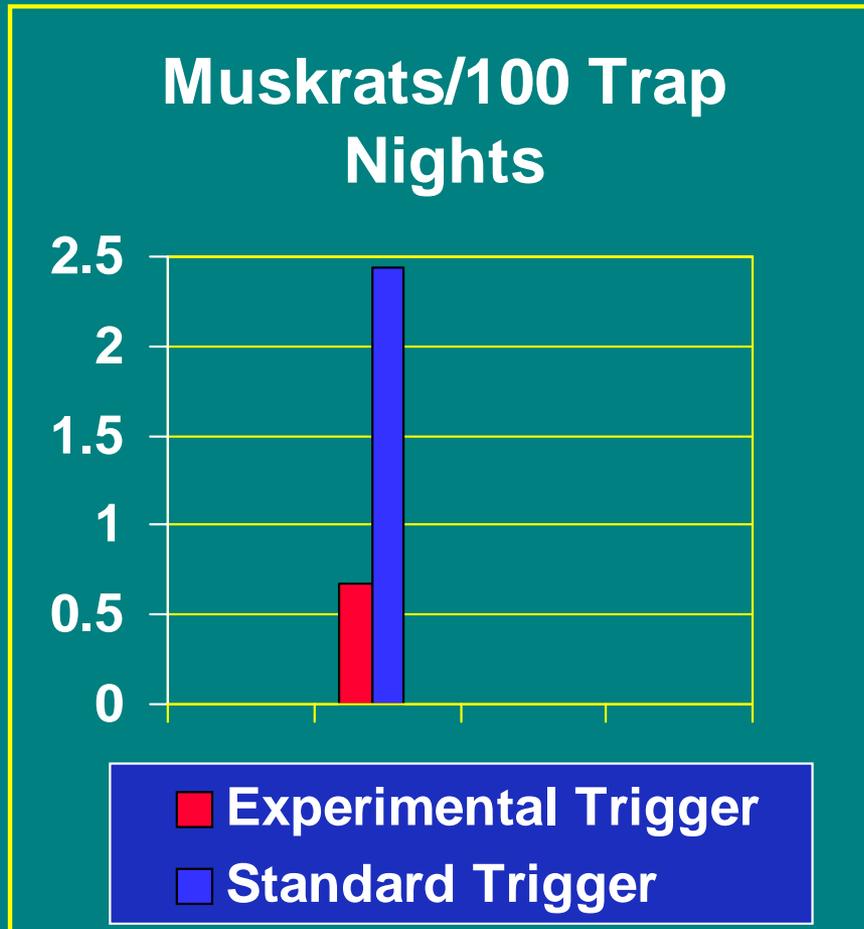
Mean Weight in Standard Trigger = 31 lbs

Mean Weight in Experimental Trigger = 35 lbs

Significant Difference ($P = .024$, t test)



Muskrat Catch Rate

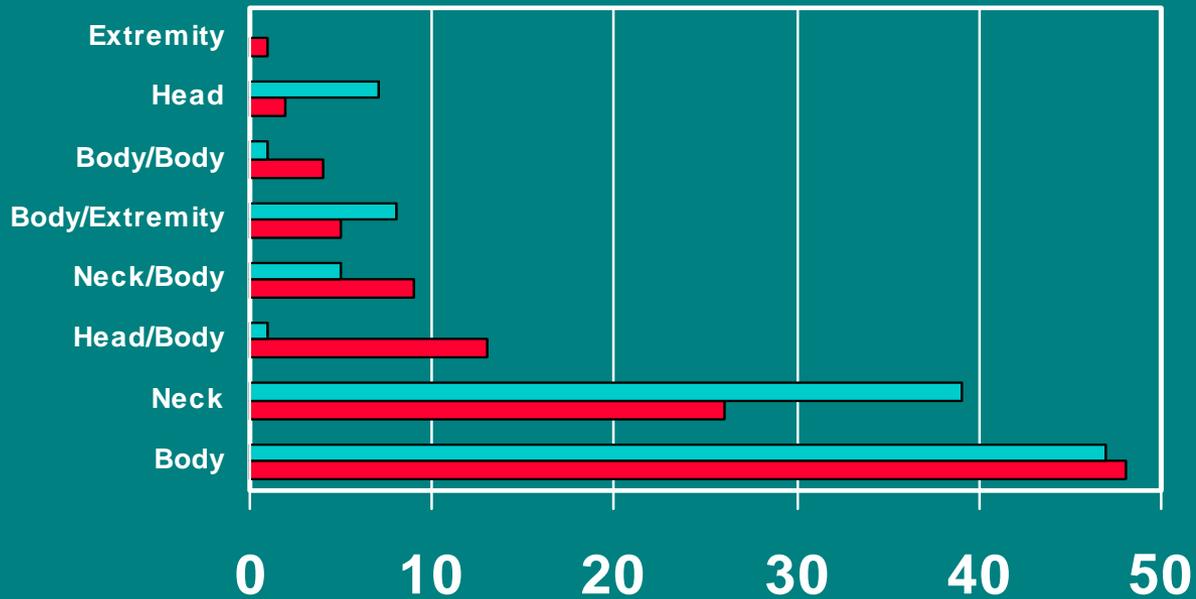


- ***Significant Difference Between Triggers (McNemar paired test $P = .03$)***

Position of Trap Jaws

Number of Beaver Caught

Catch Position

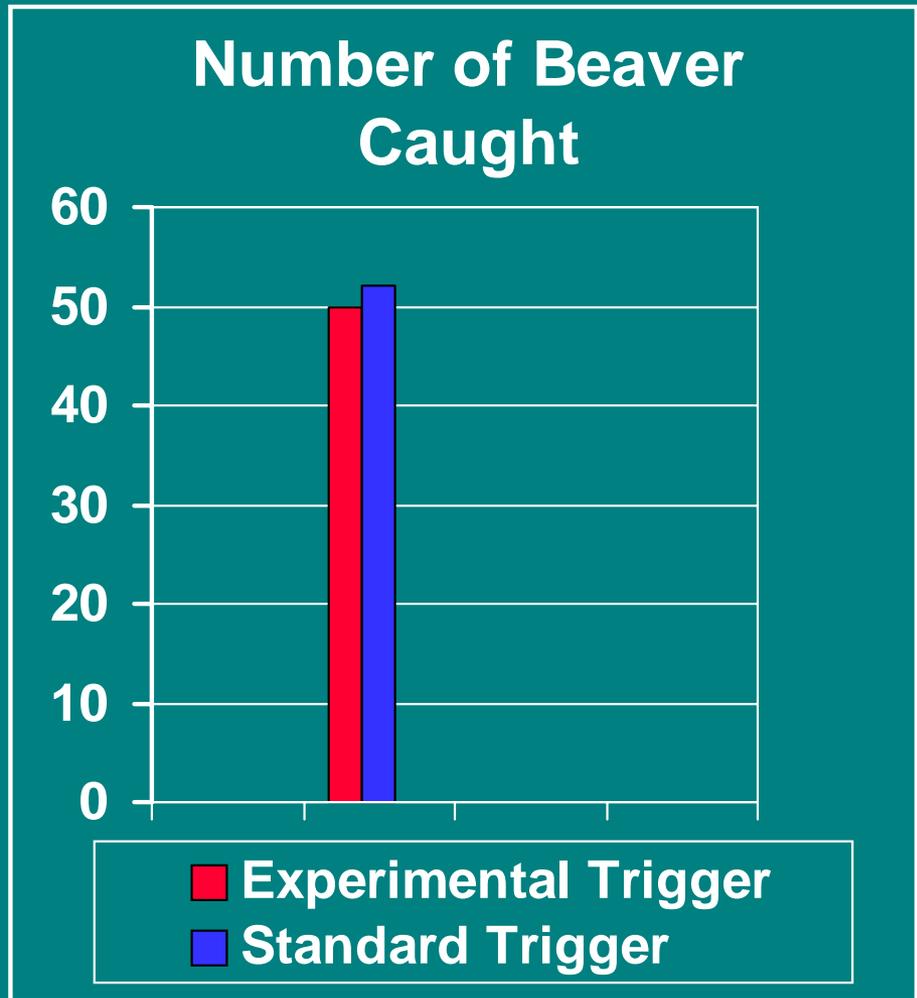


■ Experimental Trigger

■ Standard Trigger

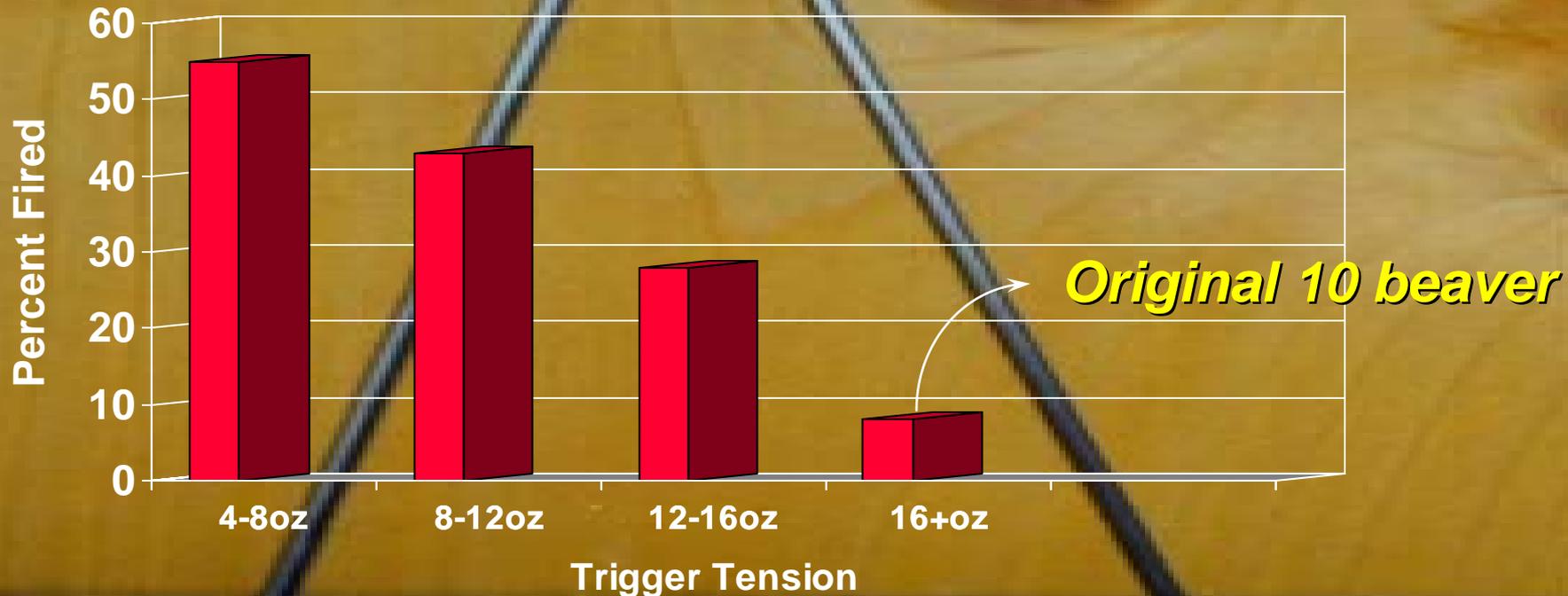
Head and/or Neck Catch Position

- **No Significant Difference Between Experimental and Standard Trigger (Chi Square = .07, P = .79)**



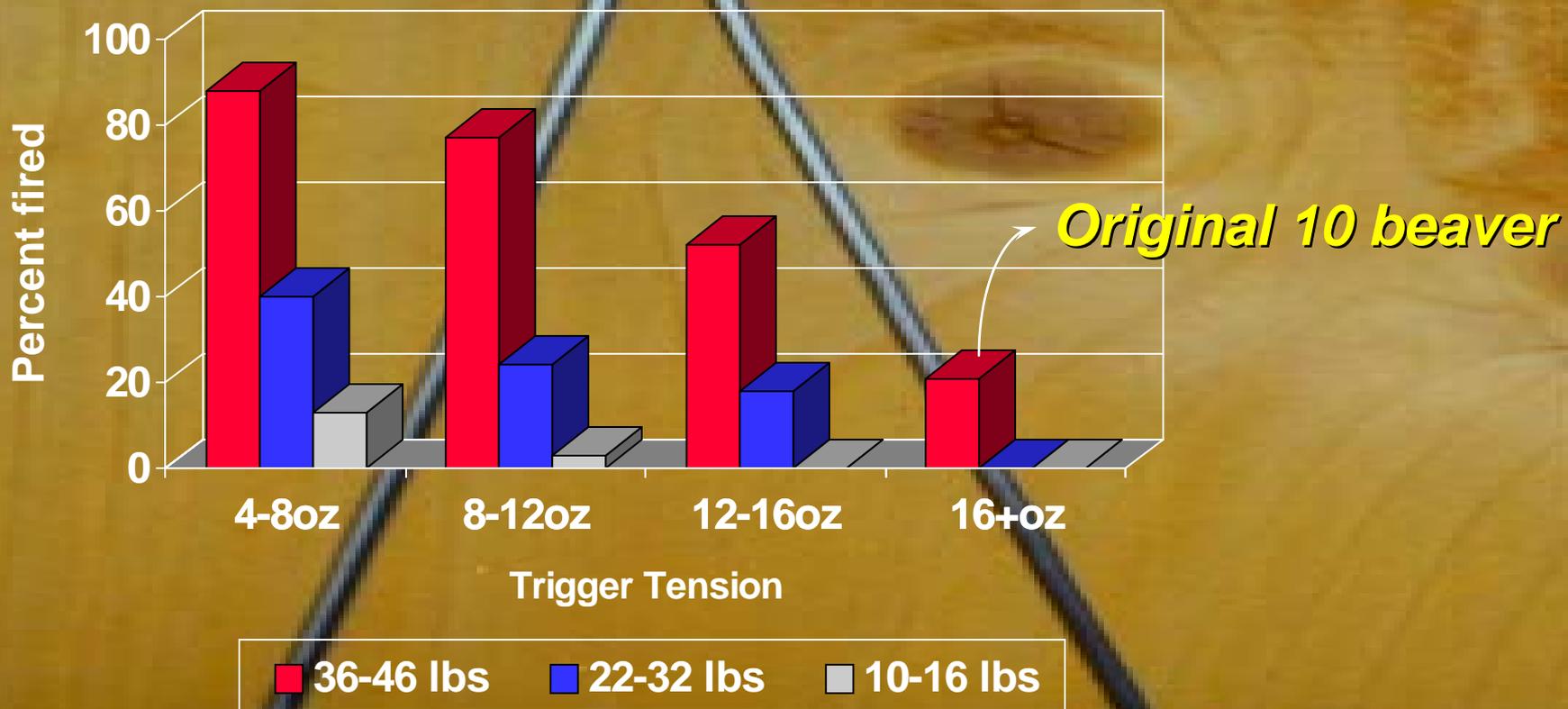
Preliminary Results

Firing Rate on Beaver with a Tension Adjustable Trigger (17 beaver)



Beaver Weights vs Tension

Adjustable Trigger



A detailed map of North Carolina, showing major cities, towns, and geographical features. The map is oriented with North at the top. The state's name, "NORTH CAROLINA", is printed in large, bold, black letters across the center. Major cities like Charlotte, Raleigh, and Durham are clearly visible. The map also shows the state's borders with Virginia to the east and South Carolina to the south.

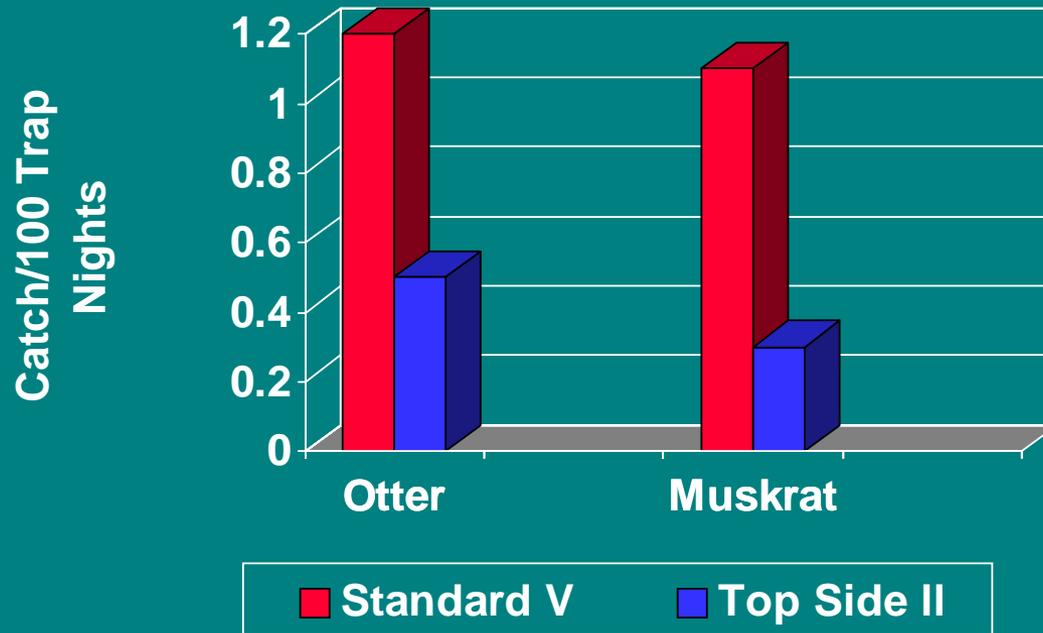
Field Testing - Winter 2001

Catch Rate Difference For Otter with TSP Trigger

Perry W. Sumner, NC Wildlife Comm.

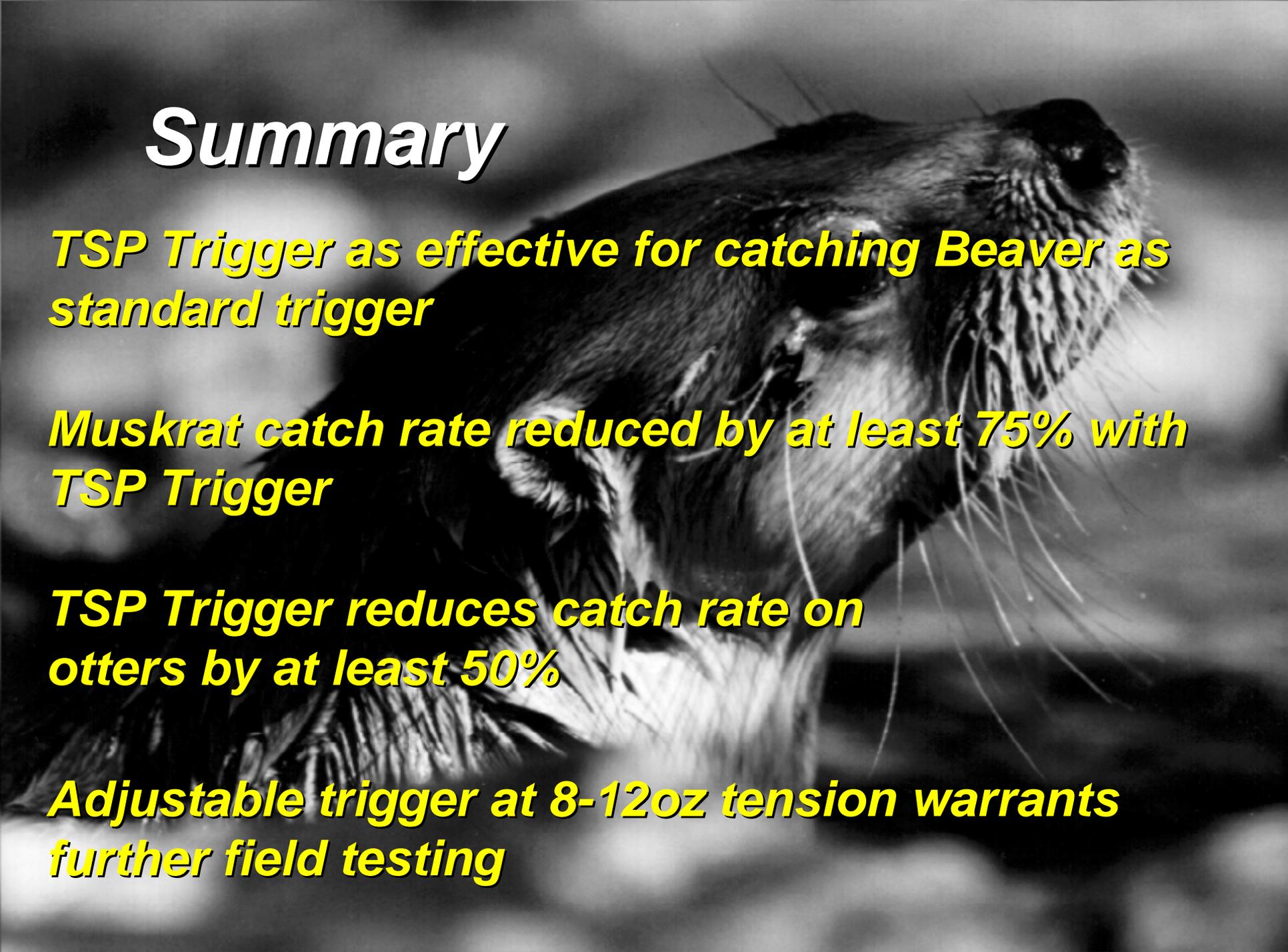
Jon F. Heisterberg, NC USDA/APHIS

Catch Rate on Otter - North Carolina Data ***760 pair nights***



Significant Difference in Otter Catch Rate
(McNemar paired test $P = .13$)

Summary



TSP Trigger as effective for catching Beaver as standard trigger

Muskrat catch rate reduced by at least 75% with TSP Trigger

TSP Trigger reduces catch rate on otters by at least 50%

Adjustable trigger at 8-12oz tension warrants further field testing