



Scott Belfit

**Keeping terrapins out
of crab traps:**

**Do visual and other
cues matter?**

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Objectives:

1) Do funnel features influence the behavior of terrapins around crab traps?

- a) Funnel Color (orange, red, green, blue vs black control)
- b) Magnetic Field (ceramic magnets ringing funnel to create field)

2) What funnel features are best for getting crabs into traps and keeping terrapins out?

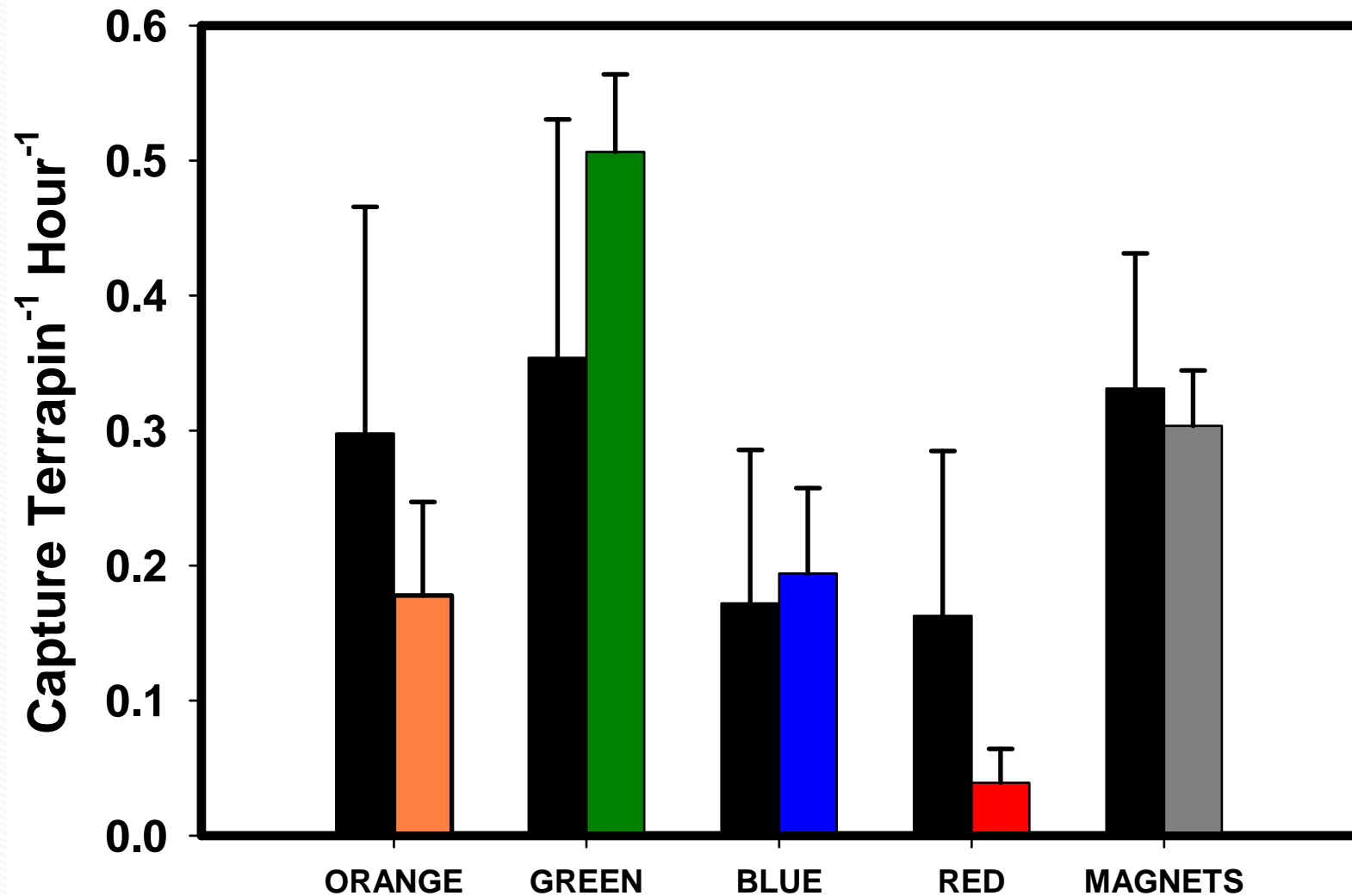
- a) Rigid Plastic BRDs (orange, red, blue)
- b) Wire BRDs (11-gauge)
- c) Magnetic Field (ceramic magnets ringing funnel)

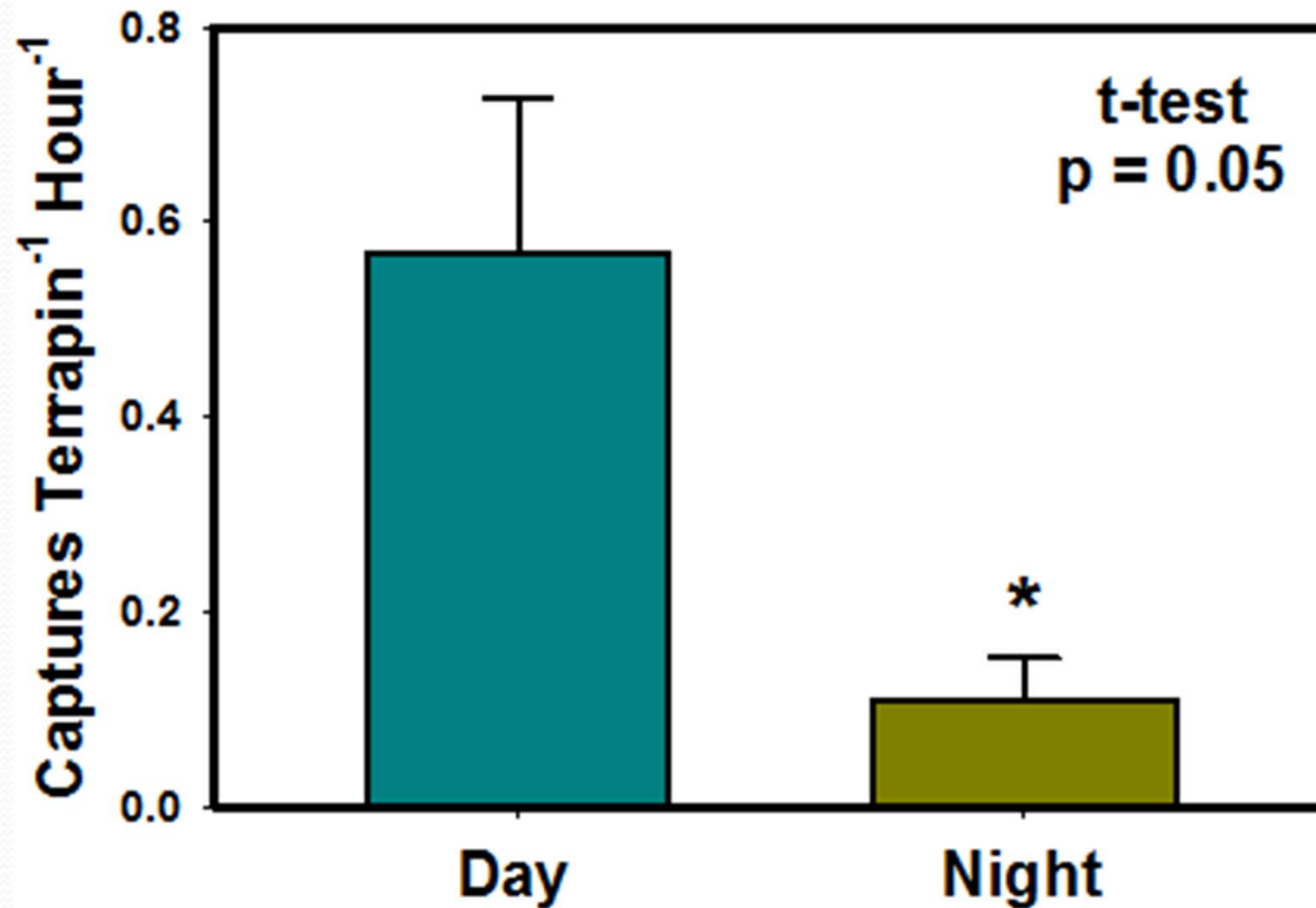


Methods for video analysis

- Caught groups of turtles (2-5) from Queen's Lake were placed in a tank and filmed 24 hours per day for a week. This procedure was repeated three times = 3 weeks.
- Tank contained 2 crab traps with open chimneys. One acted as the control (black funnel) while the other acted as the test (green, blue, orange, and red colored funnels, magnet ringed funnel).
- We only analyzed daylight hour footage, since we observed that terrapins were most active then.
 - Green funnel: 39.5 hours total
 - Blue funnel: 44.5 hours total
 - Orange funnel: 50 hours total
 - Red funnel: 41.5 hours total
 - Magnet funnel: 67 hours total

Do Funnel Features Alter Terrapin Capture?





Day: 520 captures in 271 hours

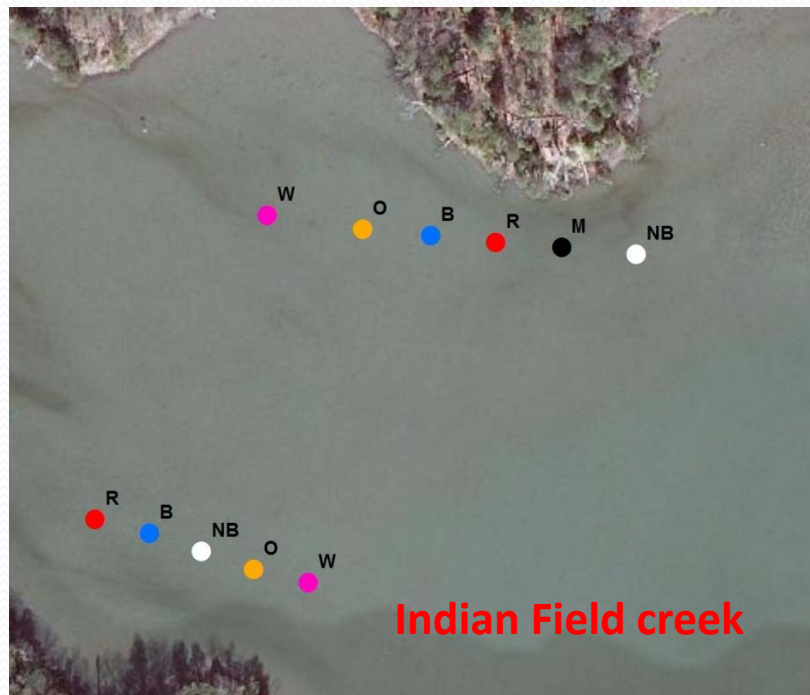
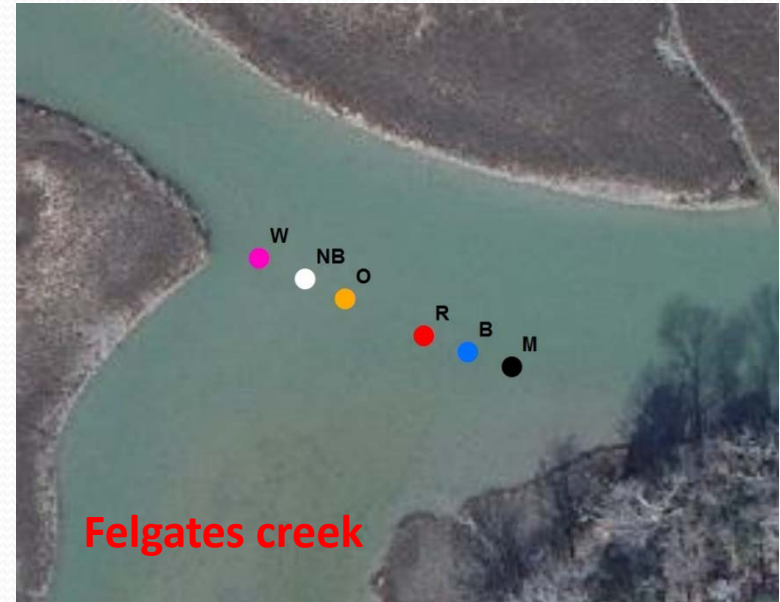
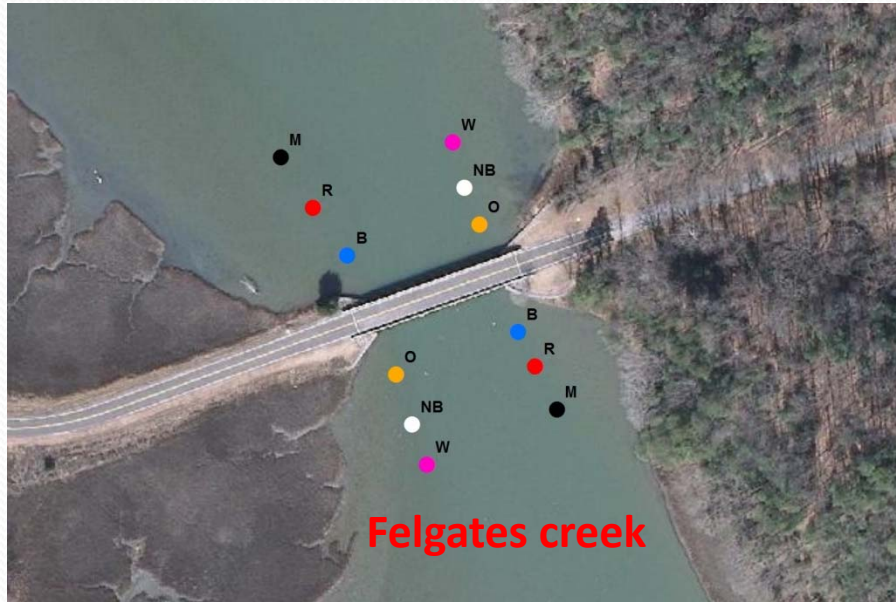
Night: 65 captures in 139 hours

Average capture per terrapin per hour: for day = .567 for night = .110

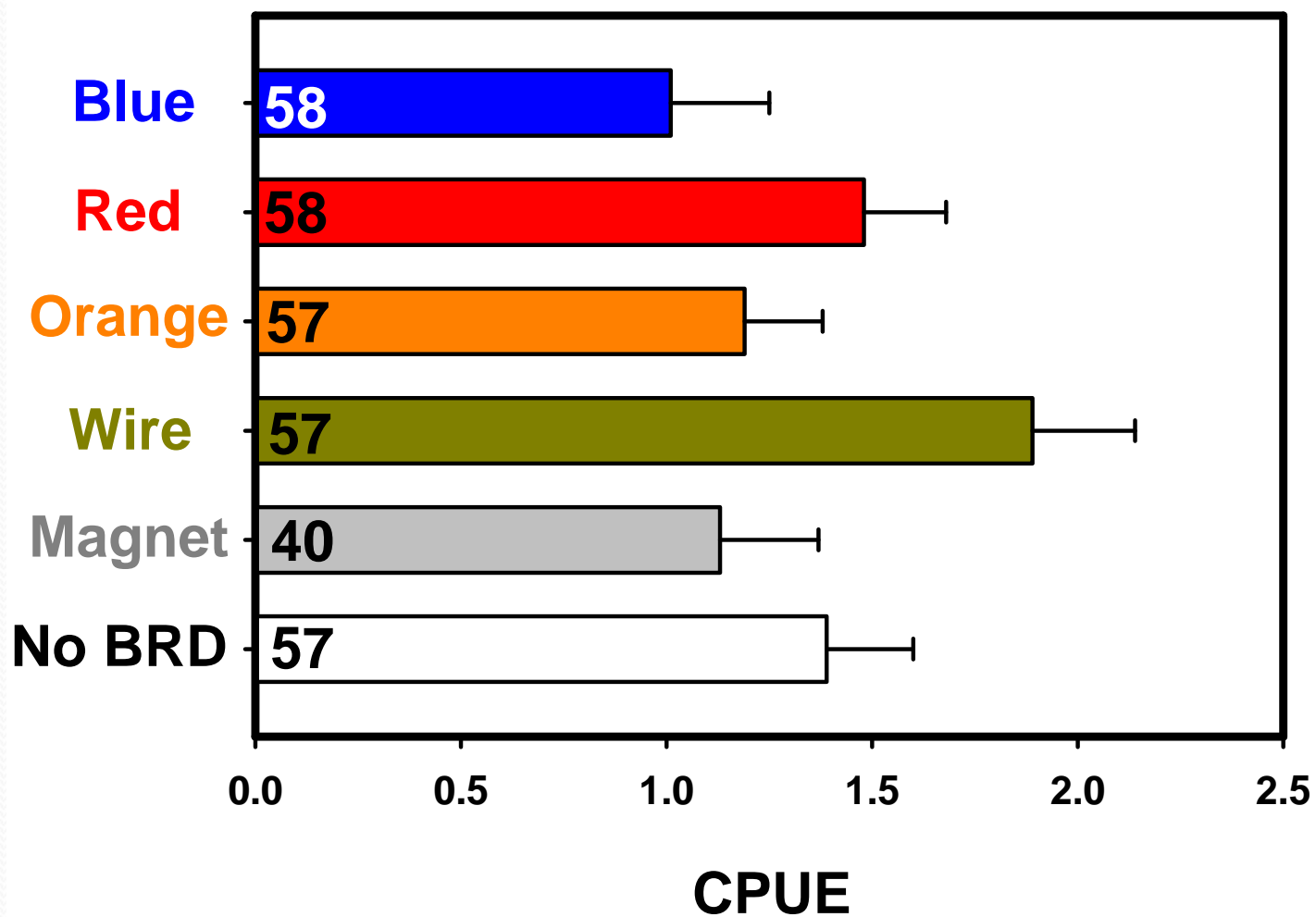


Methods for field work:

- Five groups of traps at two sites in Yorktown Naval Weapons Station
 - Felgates creek and Indian Field creek
 - Totaling 29 traps
 - 5 traps with red plastic BRDs
 - 5 traps with orange plastic BRDs
 - 5 traps with blue plastic BRDs
 - 5 traps with 11-gauge copper wire BRDs
 - 4 traps with magnet rings
 - 5 control traps with no BRDs
- Traps were baited with Atlantic menhaden every other trap night
- After each trap night we noted crab count, gender, and shell width as well as terrapin count, gender, and shell height
- Traps were fitted with wire chimneys and opened on weekends



Legal Male Crab CPUE



*one trap night = 24 hours

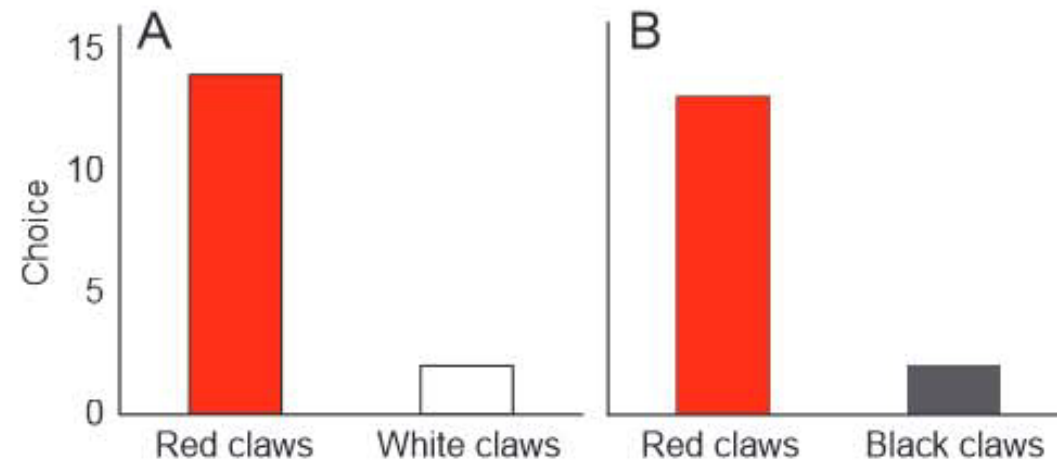
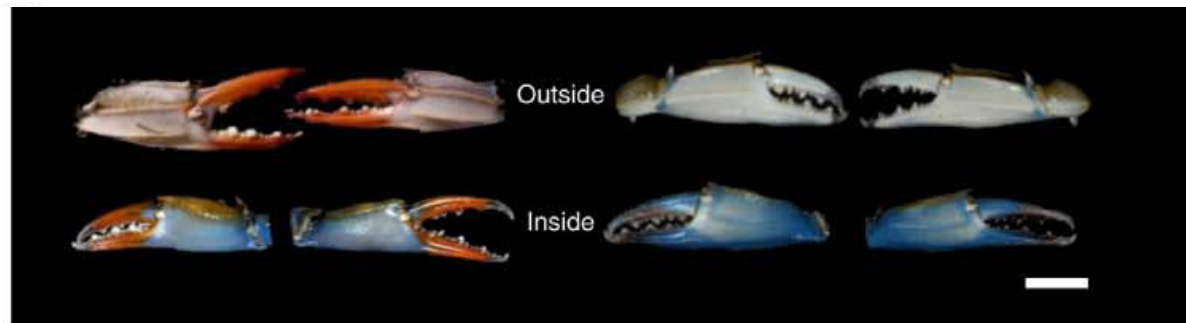
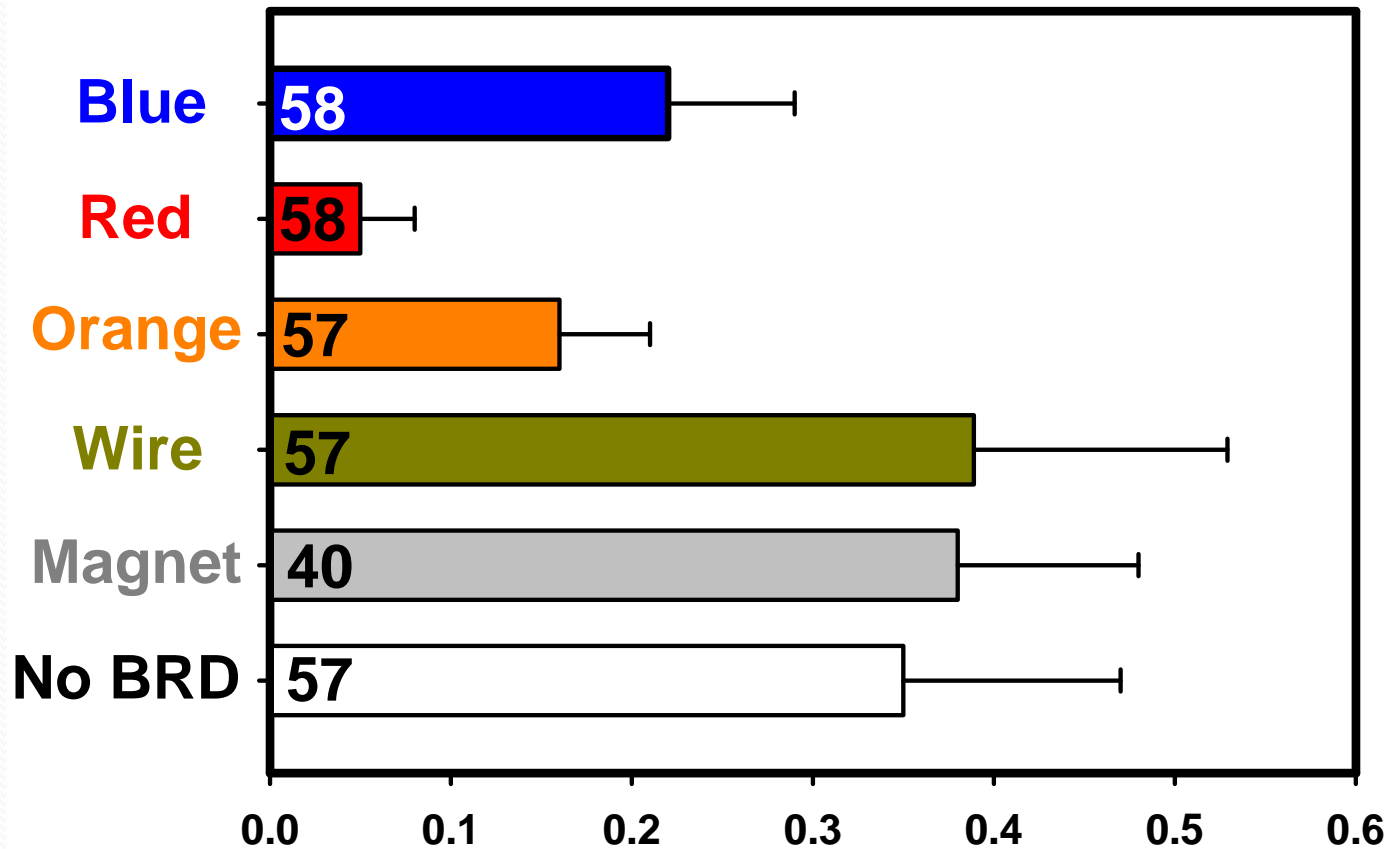


Fig. 5. Results of the choice experiments. (A) Male *Callinectes sapidus* chose the red claws over white ones in 14 out of 16 trials ($P < 0.005$, two-tailed exact binomial test). (B) Male *C. sapidus* also chose red claws over black ones in 13 out of 15 trials ($P < 0.01$).



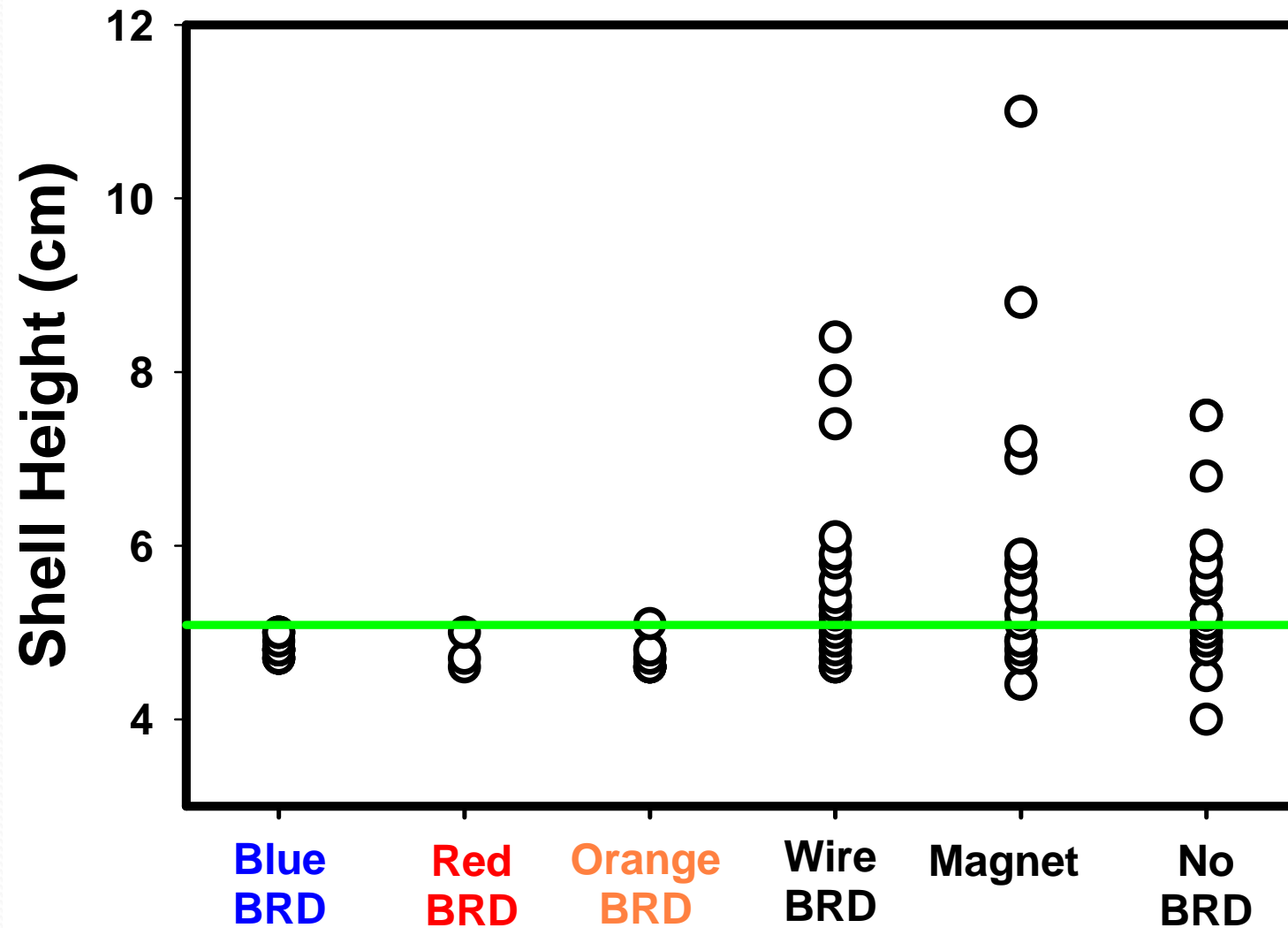
Terrapin CPUE

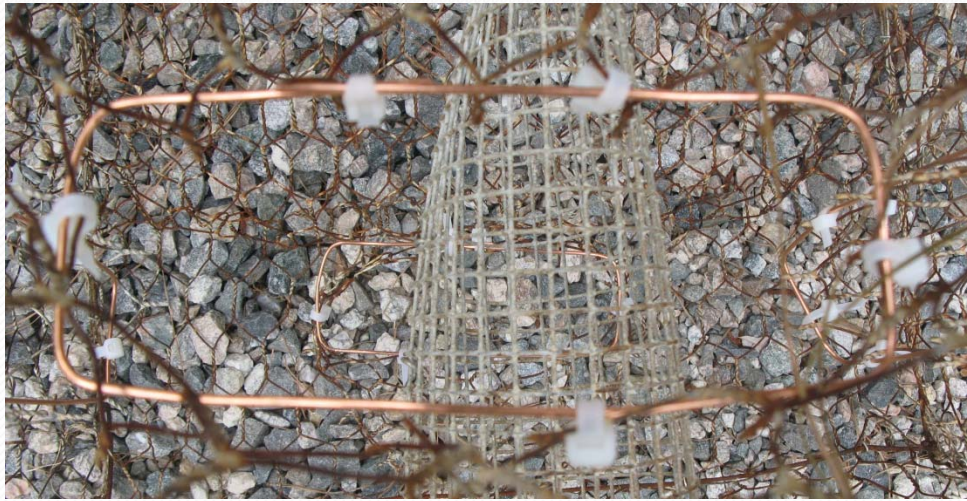


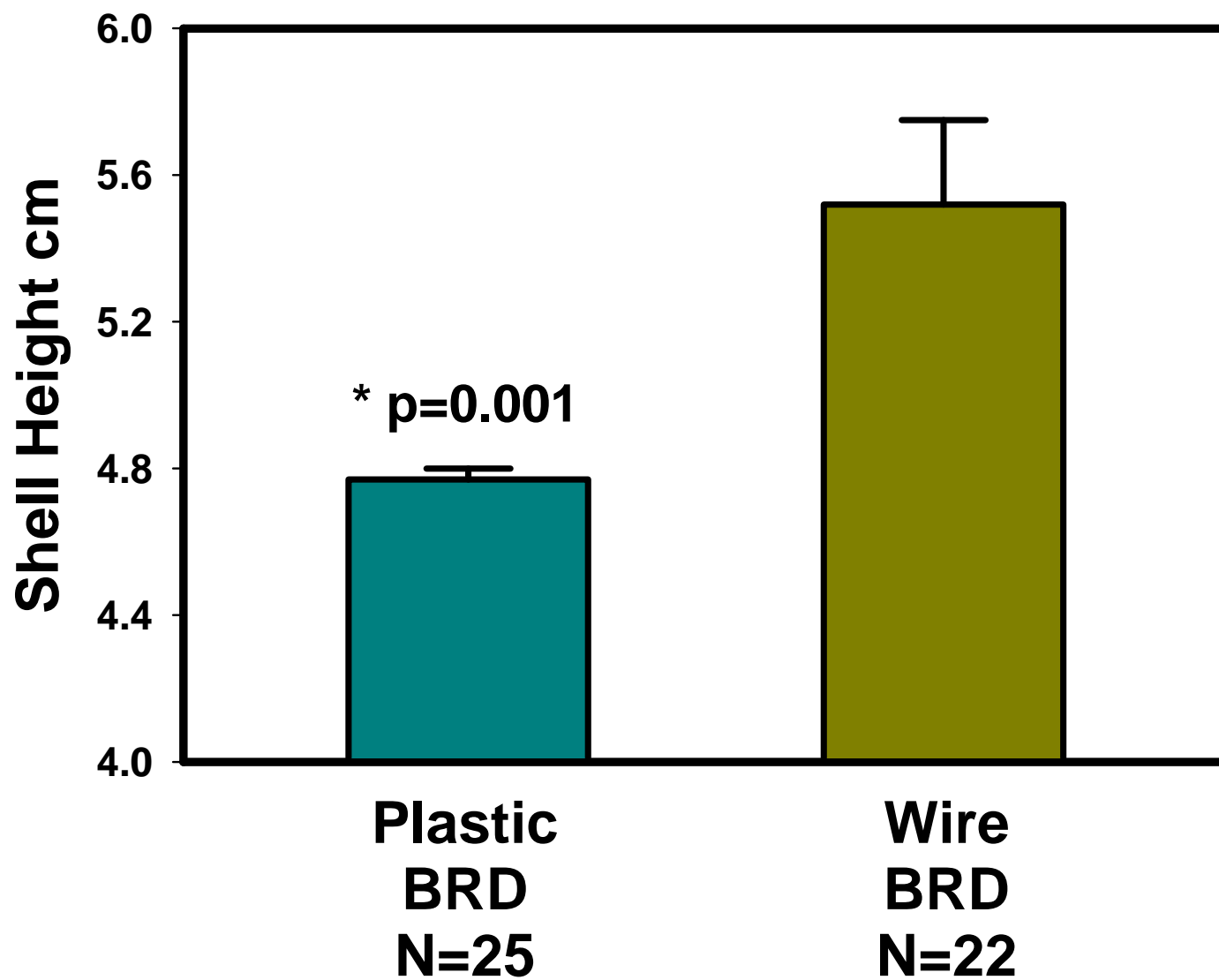
*one trap night = 24 hours

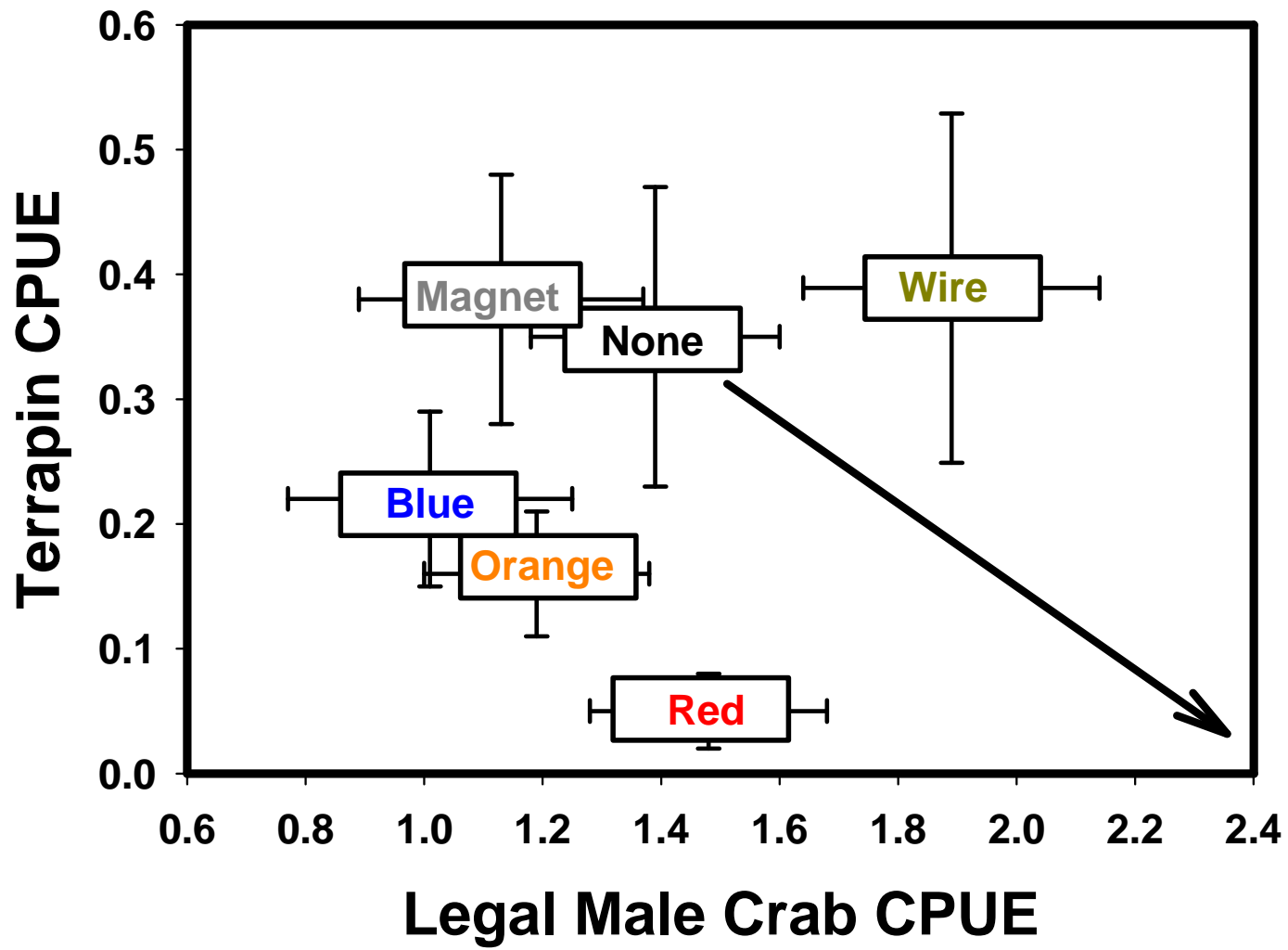
CPUE

Terrapin Captures









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