

Is It All Good In The Hood? *Astatotilapia burtoni* aggression levels in complex and simple environments compared!

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Do environmental constraints affect aggressiveness in species such as *Astatotilapia burtoni*?

Astatotilapia burtoni

- species of African cichlids
- natively to Burundi, Rwanda, Tanzania, and Zambia
- Males are known for their relatively bright coloration and territorial behavior

Hypothesis: aggression negatively correlates with amount of environmental constraints like lack of shelter



Figure 1. Two male *Astatotilapia burtoni* cichlids face off over territorial boundaries.

Assembling The Kingdom of Atlantis:

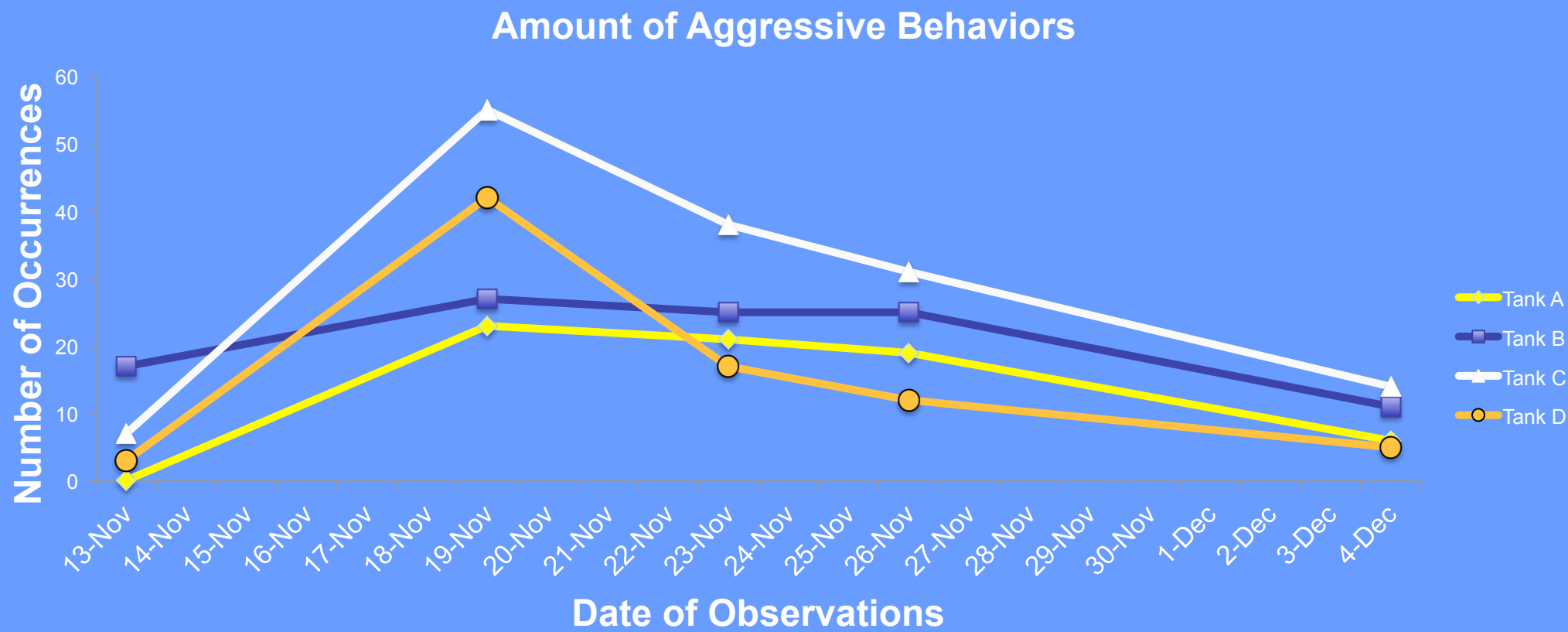
- Two sets of two tanks
- Each set has a simple and complex tank
- Simple contains 3 pottery shards while complex contains 25 pottery shards
- Seven fish per tank: 5 male, 2 female
- Each tank assessed with a combination of scan and 1/0 sampling to record a number of different behaviors over a ten minute period
- Labels
 - Tank A: Complex (25 shards)
 - Tank B: Simple (3 shards)
 - Tank C: Simple (3 shards)
 - Tank D: Complex (25 shards)



Figure 2. Fish tank with debris and cichlids

Results:

Aggression in *Astatotilapia burtoni* seemingly corresponds with environmental constraints



- Low number of habitats seems to correspond with higher aggression
- High numbers of habitats seem to correspond with lower aggression

Figure 3: The Number of Aggressive Behaviors Performed by *A. burtoni* during Sample Periods. Aggressive actions were considered as either chasing another fish or darting at another fish. In addition darting at the glass of the tank was also considered aggressive behavior as it was believed to correspond with a fish mistaking its own reflection for another individual. Sample periods were ten minutes in length and performed on each of the four tanks at least once on each date. During each sample period an observer scanned the tank and jotted down the number of times a certain behavior occurred. All occurrences of aggressive behaviors were tallied

To Sum It All Up:

Mo' Stuff is Mo' Bettah?

Future Directions:

Some ambiguity remains in the data as can be seen by the similarities between tanks A and B as well as the vast differences between the data between set A, B and set C, D. Results may just be a false positive but that can only be known through further testing. The experimental procedure could be replicated with other phylogenetically different species to see if this correlation holds true across taxa.

References:

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