

The population size of clip birds - an observational study

[Sociology](#), [Communication](#)



Observing Change in Population Size of Different Size Clipbirds With Different Food Sources

In East Clipland, all three bird populations increased in season 1, which shows there was plenty of food for all three groups. Season 2, the small clipbird population decreased, the medium population stayed the same, and the large population increased. Season 3, both the large and medium populations increased drastically, while the small population decreased drastically. In West Clipland season 1, the medium and small populations increase, while the large population decreased. Season 2, both the medium and large populations decreased slightly while the small population continued to increase. Season 3, the large population decreased further, the medium population increased slightly, and the small population increased drastically.

The bird best equipped for survival in East Clipland are the large clipbirds. In the results, at the end of the third season, an average of 4.2 large clipbirds survived while only 4.0 medium birds survived. The medium birds also fared alright but their success is not as great as the large clipbirds. The small clipbirds all died out (an average of 0 survived at the end of the third season), showing that the small clipbirds were not at all suited for the East Clipland territory. From the results, it can be concluded that the large clipbirds fared the best in East Clipland.

The bird best suited for West clipland is the small clipbird. The mediums did second best, but the large birds barely survived. The small clipbirds had a higher average number of birds in each season compared to the large and

medium clipbirds, ending with an average of 5.4 birds after the third season. The population of the mediums clipbirds decreased from season 1 to season 3, ending with an average population of 2.6 birds. The population of the small large birds continually decreased, ending with a population of 0.6 birds. Since the small clipbirds had a higher average population across all three seasons, it can be concluded that the small birds are best adapted to survive in West Clipland.

The type of food best adapted to avoid being eaten in East Clipland is the corn. If placed in season three, this food would not be eaten as most birds still existing during season three are the large birds, who would rather go after the productive food source of marbles. Since most clipbirds existing in season three would prefer eating another food source with more calories, they would avoid the corn as much as possible.

The type of food best adapted to avoid being eaten in West Clipland are the marbles. If placed in season 3 in West Clipland, marbles would be avoided as most birds existing at that time are small birds and cannot pick up the large marbles with their beaks. Therefore, since the birds would rather eat the corn or lima beans, the marbles are best adapted to avoid being eaten.

Competition for food was the selective pressure observed in this simulation. Birds had to compete for food in order to survive and reproduce. Feeding efficiency was determined by beak size and calorie needs. For example, large clipbirds did well in East Clipland during season three because their beaks were large enough to eat marbles, the only food source. Furthermore,

the marbles were the perfect resource to help them survive as they provided them enough calories. The large clipbird population experienced a 1.8 increase in number of birds. However, the large clipbirds did not do as well in West Clipland season three, when popcorn was the only food source. This was the case because popcorn did not provide enough calories. While the large beaks could pick up the small popcorn, but it was not an efficient food source with a time limit, leading to an average decrease of 0.4 birds.

If a new Clipland opened that favored marbles and corn, it is likely that both small and large clipbirds would survive, while medium clipbirds would not survive as effectively. Large clipbirds are best adapted to eat marbles, while small clipbirds are best adapted to eat popcorn. Neither type of bird will encounter much intraspecific competition because either the other's beak wouldn't be an appropriate size, or the type of food wouldn't provide enough calories for the individual. Small clipbirds have too small beaks to eat marbles, but don't require a lot of calories so they can survive on low-calorie popcorn. In West Clipland, during season three, and with popcorn as the only food source, it can be observed that the small clipbirds survived and reproduced most efficiently, with an average survival of 5.4 birds. Large clipbirds have beaks large enough to pick up high-calorie marbles, while eating popcorn would be inefficient because large clipbirds need a large amount of calories in a short span of time. As seen in East Clipland in the third season when marbles were the only food source, large clipbirds survived and reproduced most efficiently with an average survival 4.2 birds. Medium clipbirds would be outcompeted for food because their beaks

wouldn't be as adept at eating marbles as the large birds and eating popcorn wouldn't provide enough calories compared to the small clipbirds, who need less calories. Therefore, in this new Clipland, large and small clipbirds would survive, while the medium clipbirds would struggle for enough food.