

ARE URBAN BIRDS MORE ENVIRONMENTAL TOLERANT THAN RURAL?

By Rebecca Finne



In the world today 57.3 % of the world's population live in urbanized areas, and the number is continuously growing. As a result larger parts of the natural habitats of birds and mammals are being destroyed and they have to move to other areas, or adapt to the changes. But can all the birds adapt to these extreme environmental changes, or do some birds have special abilities making them better fit for this? Living in Budapest you don't need to look far to see large crowds of pigeons, but you won't see any woodpeckers. For surviving in the big city the birds have to overcome constant approach of humans and high density population which bring along it density related factors that are supposed to limit the population density. A higher population means a closer relationship both interspecific and intraspecific, parasites and other diseases are more easily spread, and the stress level is higher. Search for food is not a problem in the city, due to human influence, but there will be fight for the best nesting places. Most important of all they have to adapt to novel environments. The nesting places are not the same as in their natural habitat, so search for similar structures that can be fulfill their special needs. We all learn about Darwin's evolution-theory and survival of the fittest, is this the reality of the urban birds?

In experiments made around this topic the proper definition of rural and urban birds were formed, classifying the experimental birds, and all species falling between the defined characteristics was then excluded from the experiment making the result more accurate. An urban bird has to have breeding populations inside towns and cities, and there should be a higher

density of the population inside the city. By the help of ornithologists, bird watchers and biologists all over the world the population density and breeding distribution, which are most important when investigating environmental tolerance, were investigated.

Some has also investigated the flight distance, which are an important measurement of bird's tolerance to human approaches. After all, urbanization is about human's expansion. Experimenting with flight distance, details down to the color of the approaching person's cloths has to be decided. After proper background knowledge, time-consuming, repeated measurements were made to get the data needed.

What was discovered by all the different experiments made, all over the world was that the urban birds had a tendency to have a widely distributed population than rural birds. When looking at the flight distance, the urban birds had a much shorter than that of the rural one, larger breeding distribution, higher population density and all in all a higher ecological success.

A flight distance is characterized as the distance from the bird sees the danger, till it fly away. From these experiments it is shown that urban birds expand this buffer zone and allows the humans to come closer, or are "more tame" as a used term. The size of the bird and available hide-away places are important reducing factors for this, but it seems like birds living in the city can get used to disturbing factors.

This is an adaption most people are aware of, but other interesting adaption mechanisms, not so easily to see in our everyday life, have also been discovered among the urban birds. Some sing in a higher pitch in the city. Due to all the noise in the city, with all the low frequency noises from machines, electricity, maybe this was an important feature for this species survival, to locate their mate and reproduce. And are this new ability of the birds due to evolution, or have they just learned this. For the adaption toward surviving the higher stress levels put upon species living in a dense population, and a stressed environment, there have been discovered species with lower stress hormone.

The effect of population density is a highly discussed subject among humans. Time and money is put into management of bird droppings, which besides being unpleasant for visitors and not pretty sights, it can be part of spreading diseases as e.g. E.coli. Larger predators as the falcon are taking advantage of the large populations of prays, and are being seen more and more often living on skyscrapers and other high buildings.

So the urban birds do have a broader environmental tolerance, they have a broader niche, and their population is larger. As mentioned before the urbanization is continuously growing, and the rural birds in danger. They will be forced into other species habitats, there will be competition both intraspecific and interspecific, and we do not know all the consequences it can have for the predators or producers. Tolerance of species are good, they may survive the destroying of their natural resources, but what about the rest? If a species disbands in density, will it outcompete other less tolerant species, and they will die out? If species die out, we will get a serious problem with the biodiversity. So it has been confirmed by experiments that urban birds are more environmental tolerant than rural, but the effects of this is not clear.

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