

The analysis of bird behavior in the urban vs. rural areas

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CITATION

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Abstract: Studies have shown that human happiness can be directly affected by certain taxonomic groups, and birds are one of the main taxa. People can be much happier in places with more birds. The question is: where is the best place to observe birds? One place we most likely will not see many birds is in the cities. Studies have shown that crowded space, light pollution, as well as the plasticity (flexibility) of the bird's adaptation to the environment are some of the reasons that affect this issue.

Keywords: bird behavior; urban; rural; taxonomic; plasticity; adaptation; environment

Introduction

Many people enjoy observing birds because it gives them a sense of satisfaction about their life [1]. It is crucial to go to the correct places to search for birds since places like cities often offer fewer opportunities for bird watching. Different birds can be found in different areas. For every bird, there are certain biotic and abiotic factors that need to be included in the niche in which they live. The extent of adaptation of the birds in their environment is known as plasticity. The habitat that they live in must include all the beneficial conditions that the birds need, and provide a chance for the birds to avoid as many of the adverse conditions as they can. Cities may not be the best place for all of these beneficial conditions. This paper explores the factors that determine where the birds are and aims to identify their taxonomic distribution.

Objectives

Most cities are definitely not the best place for birds to live. For instance, light pollution in cities can have a huge negative effect on birds. Furthermore, the tall buildings in the cities are great hazards for birds to bump into.

Findings and Discussion

1. Abiotic

Some abiotic factors for a habitat that would be suitable for birds include the right climate for birds and enough place for birds to live. For example, the temperate deciduous forests in North America would be a great place for birds to stay during the summer. The climate there in the summer is suitable for the majority of birds: The summers there are mild with an average temperature of 70°F (21 °C) [2].

2. Food and Biotic factors

Biotic factors, on the other hand, include providing enough food for the birds in their respective habitats. If these factors are not present in the ecosystem, then there

likely will be little to no birds in the area. Therefore, this ecosystem might not be the most suitable habitat for many birds. For example, the area may not have enough prey for some types of birds, but certain species like zoonotic omnivorous birds tend to eat what is found in cities.

3. Spacing

In the cities, space and vegetation are very limited, which is likely caused by the fact that humans have occupied a majority of the area. Therefore, there likely wouldn't be as much space for the birds to make homes as they would in the wilderness [3].

4. Trapping effect

Finally, the attraction to strongly lit areas may “trap” day-active bird species. They are drawn to light because they see better, but once there, are reluctant to fly back into darkness. This would make them particularly vulnerable to their predators. Light similarly often traps many species of insects. If insect populations are also negatively affected by night lights, then this would affect insect-eating birds. Indeed, Cooper et al. [4] It found that insect-eating birds also tend to do more poorly in cities. Therefore, one reason that could help explain which birds do well in cities is their ability to adjust to light pollution. Notably as a result of the factors listed above, we find that these types of birds are more prevalent in urban areas. Birds such as Juncos survive better than many other birds because of their plasticity in such environments. - Yeh and Price, Bonier. Cooper and his colleagues (2020) also analyzed how the trends have changed between the 1990s to more recently between 2012–2016. They found that birds that could build nests on city structures survived better than those birds that prefer natural habitats, which are not typically found in cities. Over the years, the city nesting birds increased in number.

5. Conclusion

In general, some birds with high plasticity are able to adapt in urban environments. The plasticity of the bird can be crucial for population persistence during the early stages of colonization. The higher the plasticity, the higher the ability for a bird to adapt to new environments. Therefore, some populations of juncos for example, were able to adapt and even thrive in an urban environment. However not all populations of birds have the same plasticity as Juncos. In fact, the majority of the birds will not be able to adapt and survive in urban environments. The light pollution in cities will disturb their sense of direction and many other senses. The tall buildings in the cities with huge glass windows would then cause many birds to bump into them and die. Therefore, cities should build more parks and build more green areas. Not only will this create more habitat for birds, it will also allow people in the cities to become happier by giving them a chance to observe birds.

Therefore, if you are looking forward to seeing some birds or hearing them chirp by your window every morning you wake up, you may need to consider going to an urban area instead of a city. However, if you do want cities to be populated by birds

the way the suburban areas are, we need to focus on building more green areas, mini forests (such as parks), and bird friendly regions.

Conflict of interest: The authors declare no conflict of interest.

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