

Locations/Environments



Vegetation

Vegetation
 The vegetation in this yard is mostly lawn grass, with some shrubs and trees. The lawn grass is a mix of Kentucky bluegrass and fescue. The shrubs include boxwood, hydrangea, and azalea. The trees are mostly deciduous, including maple, oak, and birch.

Open Ground
 Open ground areas are important for birds as they provide a clear view of the surroundings. In this yard, the open ground is mostly lawn grass, which is mowed regularly. This provides a relatively flat and open area for birds to land and forage.

Under Tree
 Areas under trees provide shade and protection from predators. In this yard, the areas under trees are mostly lawn grass, with some fallen leaves and twigs. These areas are often used by birds for nesting and as a place to rest.

Seed Trays

Open Ground
 Seed trays were placed in the open ground areas of the yard to see if birds would use them. The trays were filled with a mix of birdseed and were placed in a sunny area. The results showed that many birds visited the trays, particularly in the open ground areas.

Under Tree
 Seed trays were also placed in the areas under trees to see if birds would use them. The trays were filled with a mix of birdseed and were placed in a shaded area. The results showed that fewer birds visited the trays in the under tree areas compared to the open ground areas.



Which location does the birds think is the safest?

Jackson Du
 Honors Biology
 PER 7

Introduction
 Birds are sensitive creatures, they respond to their environment instinctively even when they are young. Using quick assessments that seem to be safe, for example, places they can observe the surroundings, but most of the study is on the field, so every sense might not be in their choices. But what assessments do birds think that the best, or what environments do birds think is the safest and most comfortable?

To ask the question "What environments do birds like the best?" I set up three seed trays in three different places. The first tray was in open ground, where the birds can see everything around them. The second tray was under a tree, where it is shaded and the third tray was on a backyard floating on the pool.

I have three hypotheses:

1. Birds like open ground better, because they can see what is around them.
2. Birds like to be under the tree, because it is shaded and that way offers some protection.
3. Birds like to be on the pool better, because they can drink the water and say predators can swim across the pool to get them.

I observed the birds and count the number of birds at each seed tray to determine the birds' favorite location.

Hypotheses:

1. Birds feed on open ground is the safest because they can observe the surroundings, avoiding predators and forests.
2. Birds like to be under the tree better because it is cooler.
3. Birds feed the pool the safest and most comfortable because no predator can swim across the pool and the birds have access to water.

Prediction
 Birds feed the pool the safest and most comfortable because no predator can swim across the pool and the birds have access to water.

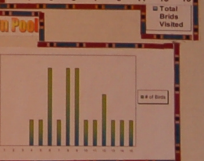
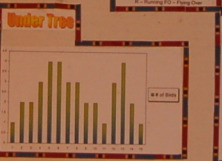
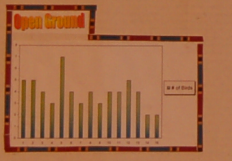
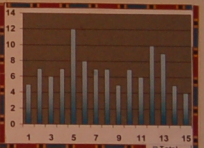
Data

Procedure:
 To create the best research question "Which location do the birds think is the safest", I set up three seed trays at those three locations with different surroundings.

The first one was in an open ground, second one under a tree, and third one floating on a pool.

Then I observe the three seed trays for 15 minutes each time for 10 times, and count the number of birds that visited each seed tray. At the end, I add all the data together to get the total number of birds that visited each seed tray. And the seed tray with the most visits is the birds' favorite location.

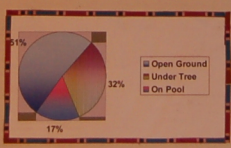
Tray Location	Day	Time	Number of Birds	
Open Ground	1st	9:00-9:15	4	
		9:15-9:30	2	
	2nd	9:00-9:15	3	
		9:15-9:30	5	
	3rd	9:00-9:15	1	
		9:15-9:30	2	
	Under Tree	1st	9:00-9:15	2
			9:15-9:30	3
		2nd	9:00-9:15	4
			9:15-9:30	1
3rd		9:00-9:15	2	
		9:15-9:30	3	
On Pool		1st	9:00-9:15	5
			9:15-9:30	4
		2nd	9:00-9:15	3
			9:15-9:30	2
	3rd	9:00-9:15	1	
		9:15-9:30	2	



Conclusion
 After calculating my data, I discovered that most birds like to visit the open ground seed tray. Through observation, I found the reason. What birds like to be in open ground, they can see what is around them. For example, I was trying to get birdseed and insects, but the birds have never seen me, so they came to my door. And birds that are feeding at the under tree seed tray did not stand at their feet, and most birds did not prefer their feet seed tray because they did not like it.

Therefore, my prediction about the good having the most visits was incorrect.

And the answer to the question "which location do the birds like the best" is Open Ground.



Birds

The House Finch (*Carpodacus mexicanus*) is a small, colorful bird native to North America. It has a distinctive red head and breast, and a brown body. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The American Goldfinch (*Carduelis tristis*) is a small, bright yellow bird with a black cap and a black breast. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The Downy Woodpecker (*Picoides pubescens*) is a small, black and white bird with a red nape. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The Blue Jay (*Cyanocitta cristata*) is a large, blue and white bird with a prominent crest. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The Red-winged Blackbird (*Aegialitis tricolor*) is a medium-sized, black and red bird with a prominent crest. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The American Crows (*Corvus brachyrhynchos*) are a large, black bird with a prominent beak. They are found in a wide range of habitats, from open fields to urban areas. They are known for their intelligence and are often seen in groups.

The American Herring Gull (*Larus argentatus*) is a large, white and grey bird with a prominent beak. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The American Osprey (*Pandion haliaetus*) is a large, white and brown bird of prey with a prominent beak. It is a common bird in the eastern United States and is often seen in open fields and meadows.

The American Bald Eagle (*Haliaeetus leucocephalus*) is a large, white and brown bird of prey with a prominent beak. It is a common bird in the eastern United States and is often seen in open fields and meadows.