In our field, each species' survival is influenced by the initial population size of the other. Typically, rabbits outlast foxes; however, when there are more rabbits initially present, foxes thrive due to an abundance of prey, leading to an increase in their population and greater predation pressure on rabbits, causing their decline. Conversely, a larger initial fox population can rapidly deplete rabbit numbers, leading to a decline in the fox population due to lack of prey. This emphasizes the need for a balanced ecosystem to prevent either species from becoming overly dominant and disrupting the intricate web of interactions. For instance, we can test the factors in our model with 10 cycles for fox survival without food, a field size of 400, and initial populations of 100 for both species. Combined, these factors create a scenario where the foxes struggle to find enough prey to sustain themselves within the ecosystem. With limited survival cycles, a moderately sized field, and initial populations that may not adequately support both species, the foxes are unable to thrive, resulting in their quick extinction within the model.

The outcome also depends on field size, grass growth rate, and fox survival cycles without food. Larger fields support more populations of rabbits and foxes, providing more resources and space. Faster grass growth means more food for rabbits, leading to higher rabbit populations, which indirectly benefit foxes. Slow grass growth can lead to food shortages for rabbits and starvation among foxes. Longer survival without food can help foxes persist during low prey abundance, while limited survival ability increases the risk of starvation and population declines. Adjusting these parameters can lead to different outcomes, affecting which species dominates and the ecosystem's stability over time.