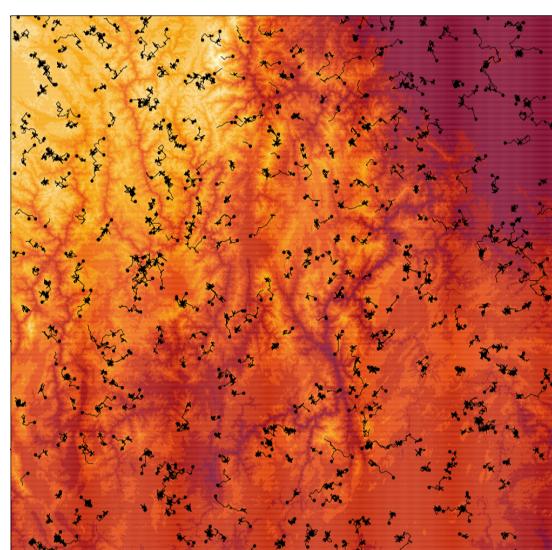
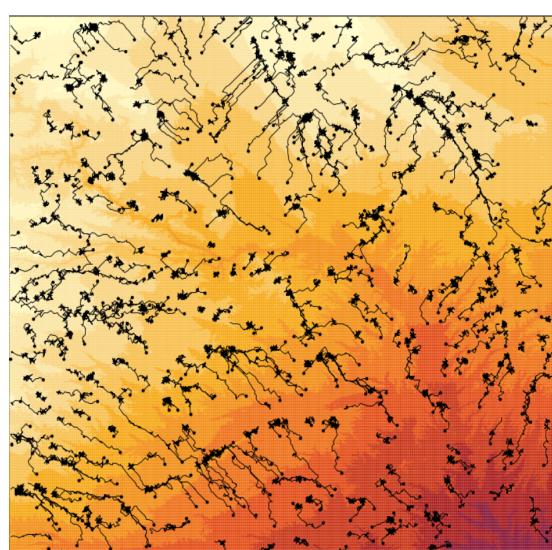
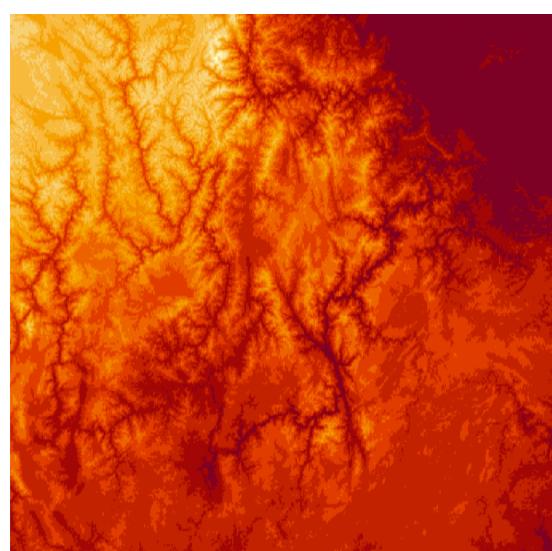
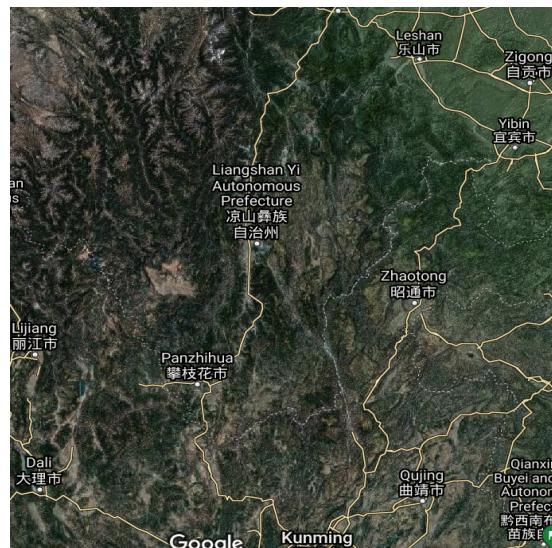


(-100,45)
Plain



(100,30)
Mountain



In this model, temperature is the direct driving factor of species movement. Temperature is affected by many elements. To simplify the causal relationship, I selected latitude and altitude as the major factors determining the temperature. But when I directly changed the values of temperature parameters like initial temperature and annual temperature increment, although the moving distance will fluctuate, the behavior patterns of species didn't display significant alteration, which suggested that species movement is not sensitive to temperature itself. Another explanation to this seemingly abnormal insensitivity is that, in this model, species actually make use of the relative temperature rather than temperature itself to decide the moving directions.

So I employed two different terrains, plain and mountain, to investigate whether species movement will be affected by the factors underneath the temperature. Apparently, from the outcomes shown above obtained in two terrains, we can see distinct moving patterns. Long distance movements were much more frequently observed in plain and virtual corridors were formed that line up with the topography. Species in mountains made more short movements and barely used corridors. Greater amplitude of temperature change resulting from acute altitudinal changes in mountains allows species to seek out suited environment meeting their needs. On the other hands, the virtual temperature barriers among the mountains to some extent discouraged the species from making long migration.

Above all, in this model, although both latitude and altitude were involved to impact the temperature and thereby behavior of species, latitude didn't play a critical role in determining the movement of species. That explained why uphill movements were common in both of terrains, but poleward movements were almost only observed on plain. However, the coefficient in this model to quantify the impact of latitude on temperature is based on only one article. More evident data will be needed to accurately embody the possible strength of latitude in this model.