

Tasks to begin in Class 5. For these tasks, use the version that is in the folder BlueFender1.

Task 18:

Think about home ranges. The way to think about this in SELES is by using an Event. What defines a home range? One possibility is this:

We will assume the following:

- pixel size is smaller than the homerange, therefore a homerange comprises many pixels
- it will take “no simulation time” to calculate home ranges, i.e., it will “spread out from the agent” but without consuming time.

Here is a possible strategy:

- Start a cluster at the current location of an agent (based on the map of the butterflies)
- grow a potential area starting from that point outward until an area of sufficient size (i.e., homerange size based on data) is made
- any pixel that is not in “adequate” habitat (i.e., farmland or another agent’s home range already set up) will not be allowed, but otherwise, the shape will be concentric around the location of the agent. This can, thus, create irregularly shaped home ranges
- if the potential area is not large enough (i.e., does not reach the minimum homerange size (from data)), then abandon and move a certain distance
- This whole thing will repeat within a year until either a suitable homerange is found, or a certain date is reached.

Task 19:

Think about seed dispersal from trees. Like Task 18, it will be an Event in SELES, with abundance of seeds as the spreading cluster.

Think about whether you want each tree to be a separate seed source, or you want groups of trees to be seed sources.

You will likely need:

- dispersal functions
- treat clearings differently than closed canopy?
- partial canopy?
- soil component?
- etc.
- Inherently would follow a similar logic to setting up a home range (Task 18)