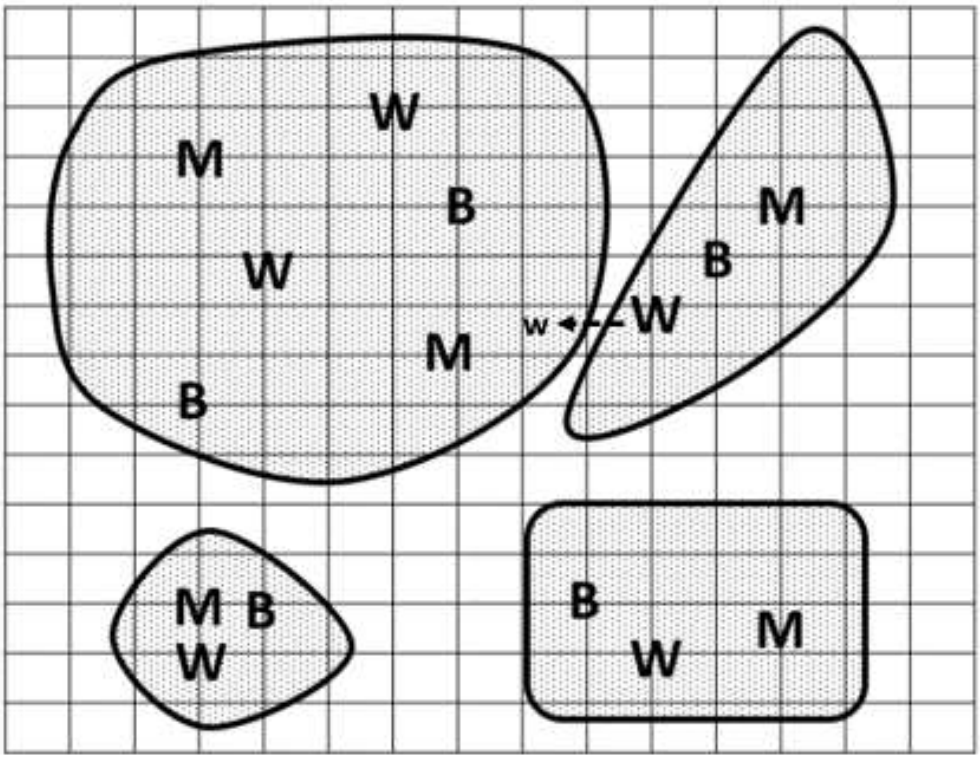
HOMEWORK:

1. Watch entire video: https://www.youtube.com/watch?v=0m6AjWZ2p8I&feature=youtu.be

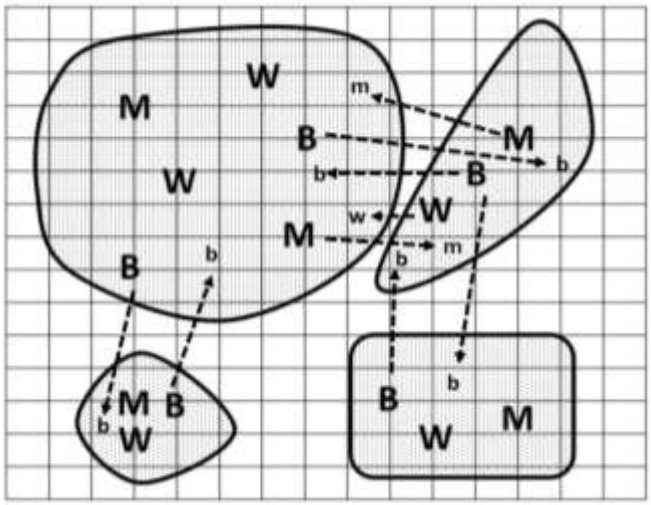
2. From the video, you understand that forest fragmentation is a major issue facing tropical rainforests (and really, all forests globally). Suppose the map below represents a tropical forest that has been broken into four fragments as indicated by shaded areas. There is a representative of a monkey-dispersed (M), bird-dispersed (B) and wind-dispersed (W) tree species in each fragment. The prevailing wind in this region is blowing from the East towards the West, like a Santa Ana wind. The open spaces between the fragments are inhospitable to the three tree species' seedlings. Monkeys will only cross open areas <50 m wide, and birds will only cross open areas that are less than 100 m wide.

Use the seed dispersal curves from class and the **information in the video** to help you to draw lower case letters at the end of arrows to indicate which other fragments the seedlings from each tree in the diagram are most likely to be dispersed to (one example shown in diagram). The top of the figure is North, the right side is East, etc.

Figure 7. Map of a hypothetical forest with four fragments (shaded areas). Each square is 100 m x 100 m. M = monkey-dispersed, B = bird-dispersed, and W = wind-dispersed tree species.



ANSWER:



2. How do you predict that fragmentation will impact the three, different species?

Species M will not disperse as much as it would if there was no fragmentation, and in some cases will not leave the fragment.

Answers: Species B will still be able to move between fragments, but not between all fragments. Species W will only be able to move between the fragments that are very close together.

3. How could fragmentation potentially affect tree diversity in the forest fragments over time?

Answers: Since wind and monkey dispersed seeds are not able to move between fragments as well as bird dispersed seeds, there will be more bird dispersed trees relative to wind and monkey dispersed trees in the future. Extra food for thought: Also, some of the populations in the fragments will become genetically isolated from one another, which could cause inbreeding.