

26 January 2015 – JB

Observing a Niche

Ecology, the study of how different organisms and species interrelate with each other and the environment, encompasses a wide array of complex systems. In a small transect of land, many species can be found. A species is one group of the same organisms. When many species share a space, they become a community. The habitat in which they live contains both biotic, living, and abiotic, nonliving, factor. The more variety a habitat has in its biotic factors, the more biodiversity it is considered to have.

For this lab we first observed three separate organisms under a microscope. For each organism – the *Chlamydomonas*, the *Gonium*, and the *Volvox* – we noted the number of cells in view, the colony size, the specialization of cells, the mechanisms of motility, whether it was isogamous or oogamous, and we drew a picture of what we saw. In procedure two we observed a 20 by 20 meter transect of land on the American University campus. We drew a picture of the land and took a representative soil sample. We then created a Hay Infusion Culture by mixing the sample with dried milk and letting the jar rest.



This transect included a normal array of plants, including weeds, wheat, and some small shrubbery. The soil was affected strongly by the cold, and has a lot of permafrost. A few pieces of trash were scattered throughout the area. Some stones and pebbles were also scattered around the storm drain. Some snow lined the edge of the dirt and then the rest of the transect was grassy.

Biotic	Abiotic
Small bushes	stones
insects	snow
wheat	Plastic cup
Small trees	Plastic straw
grass	cement
worms	dirt

The biotic and abiotic factors were relatively comparable to one another. The number of each was very even.

Overall, the transect was thoroughly examined and the most representative data was drawn. The permafrosted soil was compatible with the snowy weather going on. The Hay Infusion culture will be an accurate representation of the soil collected.