Lab report biodiversity assignment

Biodiversity exists in every ecosystem, weather it is big one, or just ecosystem of one garden, it has the same importance because without it nature loses its ability to perform major functions added for life on Earth, as it is oxygen production. Trough this investigation, two different ecosystems will be explored and the level of their biodiversity on certain area. Research question what extend is one ecosystem more diverse than other one? ” Hypothesis If ecosystem has more number of species and organisms within those species, it will have higher biodiversity.

Justification of hypothesis According to formula for Simpson s diversity index, D = N (N-l) / n (n-l), where N is total number of organisms, while n is sum of individuals within a piece, we can see that sum of all individuals and total number of organisms of particular species affect the biodiversity index. Variables Dependent variable Biodiversity of ecosystem. Dependent variable is key of the study and it will be tested on independent and controllable ones. It will be derived from sufficient collection of data and using Simpson s index. Finally it is going to be presented as number of species in two different ecosystems.

Independent variable Size of area of ecosystem tested, which is going to be presented in mm. This variable does not depend on other ones, and I decided to calculate biodiversity n 3 mm in both ecosystems, making sure that conditions are same for both. Controllable variables: Time, weather conditions. These variables control the biodiversity index which is going to be derived and will be controlled as I will decide at which time am I going to measure number of species in ecosystem. In my case, it will be beginning of

June. As well as I am going to make sure that I measure it on optimal temperature, without rain or strong sun.

PROCEDURE Material: * Meter * Paper * pen * Calculator * Thermometer Procedure Plan is the key point of each procedure. As already found material needed for beginning of my investigation, I have to decide on two different location for measuring. It is going to be meadow and garden around family house. In both locations, area of measurement is going to be 3 mm and I am going to make sure that during the measurement in both locations, conditions of temperature are approximately the same. As I labeled the area of 3 mm in meadow, I will count the number of different species living there.

Simpson s reciprocal index at meadow and garden DISCUSSION After I carried out the entire investigation, I got the results showing biodiversity of two different ecosystems trough Simpson s reciprocal index showed in graph 3. If we look generally on biodiversity index of both ecosystems, in both cases it is higher than 1, meaning that biodiversity index is not low. As the maximum value is equal to the number of species in the sample, we can say that in case of meadow, biodiversity is optimal, at medium level, while in case of garden it is maximum and high. Also, there is no huge variation between these two ecosystems, meadow has index of 3. While garden has index of 3. 33. The hypothesis stating that ecosystem with more species will have higher biodiversity was proven, as meadow had 5, and garden 3 species, and garden has higher biodiversity. It is due to the fact that it has more species and organisms within those species live in meadow. It can clearly be seen on graph 4. , below which compares number of organisms with Simpson s reciprocal index within two ecosystems. Graph 4. Comparison

of Simpson ‘ s reciprocal index, total number of organisms and number of species at meadow and garden EVALUATION

As all investigations have their own weaknesses and limitations, this one has them too. Even though I tried to avoid them, they are best way of learning and improving it through next investigations. Stating the variables was quite hard for this type of investigation, but as I finished with lab work, I realized that I didn’t make any mistakes regarding dependent, independent and stating controllable variables, because I proved hypothesis. The methods of working and good plan, lead me to the successful ending and reasonable results. Still, this investigation had its limitations which eventually affected results on some way.