# Lab 16: Terrestrial Ecology

## Name and Course Section:

## Procedure

**Brief Explanation of Proposed Study:**

**Hypothesis:**

**Calculations of Shannon Species Diversity for Locations 1 and 2**

Diversity = (-(pA ln pA + pB ln pB + pC ln pC +….) in which “pA” is the proportion of species A in the community”

**Conclusion:**

**Bar Graph Comparing Species Diversity at Two Study Locations (insert digital version or draw neatly by hand):**

**Description of First Sample Location:**

|  |  |  |
| --- | --- | --- |
| **Species Identified** | **Estimated # of Individuals** | **Proportion of Community (estimated # of individuals/total # of individuals)** |
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| **Total** |  |  |

**Description of Second Sample Location:**

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| **Species Identified** | **Estimated # of Individuals** | **Proportion of Community (estimated # of individuals/total # of individuals)** |
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| **Total** |  |  |

## Summary Questions

1. Use the Shannon Diversity Index to calculate the owl diversity of a nature preserve containing 1000 total birds. 250 of these are great-horned owls, 500 are screech owls, and the remaining 250 are barred owls.
2. Compare (in 1-2 sentences) the following two salamander communities in terms of species richness and relative abundance. The first column lists the species of salamanders and columns 2 and 3 list the number of individuals located in the two communities.

|  |  |  |
| --- | --- | --- |
| **Species** | **Community 1** | **Community 2** |
| Tiger salamander | 350 | 112 |
| Red-backed salamander | 25 | 100 |
| Blue-spotted salamander | 10 | 78 |
| Mudpuppy | 0 | 109 |
| 2-lined salamander | 0 | 87 |
| Marbled salamander | 0 | 90 |

1. In the study you completed today on the prairie (or virtually), which of the two locations you chose had a higher species diversity? Suggest at least two plausible reasons why the diversity levels differed between the two locations.