BIODIVERSITY

STUDENT/TEAM WORKSHEET | GRADES 9-12 | BASELINE DATA-TREES AND SHRUBS

NAME/TEAM: _____

Biological diversity can be quantified in many different ways. The two main factors taken into account when measuring diversity are richness and evenness. **Richness is a measure of the number of different kinds of organisms present in a particular area.** For example, species richness is the number of different species present. However, diversity depends not only on richness, but also on evenness. **Evenness compares the similarity of the population size of each of the species present**.

Example: Both samples have the same richness (3 species) and the same total number of individuals (30). However, the first sample has more evenness than the second. This is because the total number of individuals in the sample is quite evenly distributed between the three species. In the second sample, most of the individuals are boxwoods, with only a one oak and one maple present. Sample 2 is therefore considered to be less diverse than sample 1.

TREES AND SHRUBS	NUMBERS OF INDIVIDUALS	
	SAMPLE 1	SAMPLE 2
OAK	10	1
BOXWOOD	12	28
MAPLE	8	1
TOTAL	30	30

A community dominated by one or two species is considered to be less diverse than one in which several different species have a similar abundance.[1]

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[1] "Simpson's Diversity Index." *Simpsons Diversity Index*, www.countrysideinfo.co.uk/simpsons.htm.

The team needs to observe the entire space. Slowly look up, down and all around the observation area, including the ground.

Use the iNaturalist SEEK app or Google Lens app, local field guides and/or local experts to provide identification assistance. If the name of the tree or shrub cannot be found, enter a description.

1. CATEGORY (TREE OR SHRUB)	NAME OR DESCRIPTION	QUANTITY	ALIVE	DEAD	HOLLOW
EXAMPLE: TREE	BIG LEAF MAPLE	3	3		
	TOTALS				

2. Total number of trees and shrubs combined within the inventory site. _____
   (if number of trees and shrubs is greater than 50 write 50+)

3. **Richness**
   Number of different tree types _____

4. **Richness**
   Number of different shrub types _____

5. **Evenness**
   Number of each tree type. For example: 5 oaks, 2 fruitless mulberries and 1 magnolia.

6. **Evenness**
   Number of each shrub type.

7. Optional, but strongly encouraged. Ensuring native flora is a key factor in providing a healthy environment for wildlife to thrive. Using a field guide, online resources or local expert, identify how many trees and shrubs are considered native and how many are considered, non-native.

   _____ native to my region or state   _____ non-native to my region or state

8. Create a graph, chart, or infographic showing tree and shrub richness and evenness.

Example Bar Graph of Tree Richness and Evenness

	Value
Tree Type 1	1
Tree Type 2	3
Shrub Type 1	15
Shrub Type 2	25