***PRE-ASSIGN LEAVES FOR STUDENTS AT THE END OF LAB 3 FOR LAB 4.1 PRE-LAB***

**Laboratory Unit 4.1-Spring – Ecological Methods: Field Sampling Techniques**

**Leaf Herbivory and Fungal Occurrence on Tree Species**

**Spring Data Collection Handout – Sampling 1 Tree/student (though data from all 4 trees in the assigned Group must be collected to complete this assignment)**

**Methods:** *Review the provided information on the* [*Lab 4.1 Leaf Herbivory Pre-Lab Webpage*](https://wordpress-projects.wolfware.ncsu.edu/bio-181l-zchxzbn/unit-4-1-leaf-herbivory-sampling-methods/)

***Step 1:* Record your observations below:**

* Description of sampling location.
  + Insert pictures:
* Description of observations around each **tree sampled**:
  + Insert pictures:
* Tree Identification (genus and species, and common name):
* Insert picture(s) and name the different types of leaf herbivory you observe on your tree - refer to <https://wordpress-projects.wolfware.ncsu.edu/bio-181l-zchxzbn/laboratory-units/unit-4-leaf-herbivory-examples>
* Insert pictures of types of fungal infection you observe on your tree:
* Other observations:
  + Insert pictures and/or write your observations:

**Step 2: Complete the following research on your tree species to learn more about their ecological niche:**

The following Resources may be helpful, though you may use other reputable sources

NCSU Extension - Plant Guide - <https://plants.ces.ncsu.edu/>

Arbor Day Foundation - <https://shop.arborday.org/treeguide>/

Lady Bird Johnson Wildflower Center <https://www.wildflower.org/plants> (good for native plants)

Ideal Growing Conditions:

Known Tree Health Concerns:

Wildlife Value:

***Steps 3 & 4*: Record leaf surface area and damage data in the table below:**  (**Table 4.1-1)**

**Table 4.1-1.** Calculations of approximate leaf surface area (SA)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Tree #1 species: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Country or Region of Origin: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Native/Non-native \_\_\_\_\_\_\_\_\_\_ Location & Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | | | |
| Leaf # | Overall Leaf  SA | Herbivory Damage Leaf SA | Fungal Damage Leaf SA | Total Leaf Damage | Percent  Leaf Damage | Type(s) of Herbivory Present |
| 1 |  |  |  |  |  |  |
| 2 |  |  |  |  |  |  |
| 3 |  |  |  |  |  |  |
| 4 |  |  |  |  |  |  |
| 5 |  |  |  |  |  |  |
| 6 |  |  |  |  |  |  |
| 7 |  |  |  |  |  |  |
| 8 |  |  |  |  |  |  |
| 9 |  |  |  |  |  |  |
| 10 |  |  |  |  |  |  |
| Total SA of leaves/ category |  |  |  |  |  |  |
| Ave. Surf. Area/10 leaves |  |  |  |  |  |  |

**Additional Notes:**