

Stat 101L: Lecture 2

Data

- ◆ Information
- ◆ Context is important
 - **Who** are we collecting data on?
 - Cases: Rows in a data table.
 - **What** data are we collecting?
 - Variables: Columns in a data table.

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| | | | | | |
|---------------------------------|-------|------|----|----|-----|
| <i>Acacia bonariensis</i> | Moist | 1.59 | 35 | 59 | 94 |
| <i>Dendropanax arboreus</i> | Moist | 1.46 | 25 | 31 | 56 |
| <i>Heliocarpus americanus</i> | Moist | 2.36 | 30 | 40 | 70 |
| <i>Margaritaria nobilis</i> | Moist | 1.84 | 24 | 23 | 47 |
| <i>Pouteria macrophylla</i> | Moist | 1.55 | 57 | 46 | 103 |
| <i>Bougainvillea modesta</i> | Dry | 2.19 | 12 | 12 | 24 |
| <i>Chrysophyllum gonocarpum</i> | Dry | 1.42 | 59 | 70 | 129 |
| <i>Jacaratia</i> sp. | Dry | 2.12 | 21 | 50 | 71 |
| <i>Phyllostylon rhamnoides</i> | Dry | 1.49 | 18 | 21 | 39 |
| <i>Sweetia fruticosa</i> | Dry | 1.70 | 28 | 26 | 54 |

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Data

- ◆ Who?
 - Tropical trees/shrubs.
- ◆ What?
 - Species, type of forest
 - Average crown exposure, sugar (mg/g), starch (mg/g), nonstructural carbohydrate (mg/g)

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Population – all items of interest.
Example: All trees/shrubs in tropical forests.

Sample – a few items from the population.
Example: 10 trees/shrubs.

Parameter – numerical summary of the entire **population**.
Example: **population mean** sugar concentration.

Statistic – numerical summary of the **sample**.
Example: **sample mean** sugar concentration.

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What?

- ◆ Variables
 - Categorical (Qualitative) variable
 - Species
 - Type of forest
 - Numerical (Quantitative) variable
 - Crown exposure
 - Sugar, starch, and NCH

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Categorical

- ◆ Nominal – names.
 - Species – *Acacia bonariensis*
- ◆ Ordinal – ordered categories.
 - Forest type – Dry, Moist (ordered by amount of wetness).

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Categorical

- ◆ In the next chapter we will see how to summarize categorical data by counting how many cases are in each category.
- ◆ Do not confuse the summary of a categorical variable with a numerical (quantitative) variable.

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Categorical

- ◆ What type of forest a tree/shrub is in is a categorical variable.
- ◆ Summary:
 - There are 5 Moist forest trees/shrubs and 5 Wet forest trees/shrubs.

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Numerical

- ◆ Discrete – takes on only certain isolated values.
 - Crown exposure – 1, 2, 3, 4, or 5
- ◆ Continuous – measurement.
 - Sugar concentration – any value greater than 0 mg/g.

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