Histogram & Describing a Distribution Worksheet (Answer Key)

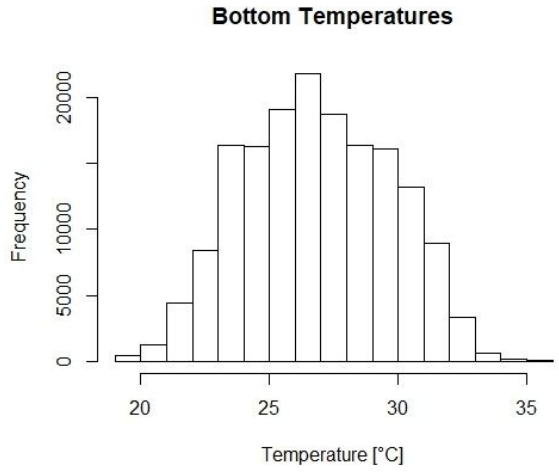
KEY TERMS

- **Histogram**: *a graphical representation in x-y form of the distribution of data in a data set; x represents the data and y represents the frequency or relative frequency; the graph consists of contiguous rectangles*
- **Shape:** *describes if the distribution is symmetric or skewed, the number of mounds that appear, and if any outliers are present*
- **Center:** *describes the "typical value"; the mean/median/mode of the distribution*
- **Spread:** *describes the amount of horizontal variation/diversity present in the distribution*

Illowsky, B., & Dean, S. (2018). Introductory statistics.
Gould, R., & Ryan, C. N. (2015). Introductory statistics: Exploring the world through data. Pearson.

In the exercises below, histograms display raw data for Mokauea loko i'a's bottom temperatures, surface temperatures, and salinity levels from May 22, 2019 through May 22, 2020. It is critical to analyze and describe these distributions in order to understand what efforts are needed to restore the pond. Help us understand these distributions by describing the shape, center, and spread of each histogram.

EXERCISE 1: Bottom Temperatures



Shape:

- Symmetric
- Unimodal
- Outliers: None

Center:

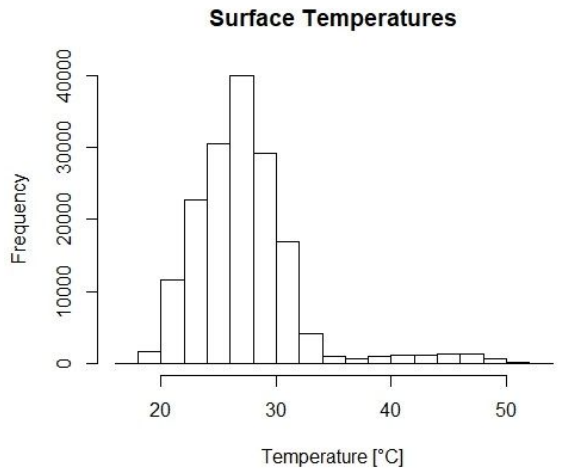
~26°C

Spread:

Large variation

The above data is real data collected from research at Mokauea loko i'a.
Additional Mokauea loko i`a data can be explored here: http://grogdata.soest.hawaii.edu/

EXERCISE 2: Surface Temperatures



Shape:

- Right-skewed
- Unimodal
- Outliers: None

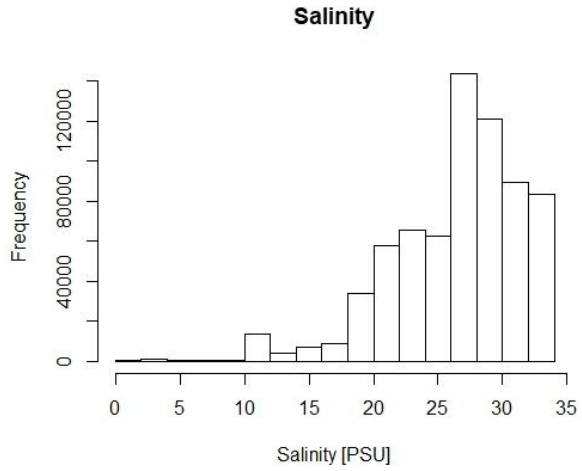
Center:

~ 27°C

Spread:

Large variation

EXERCISE 3: Salinity



Shape:

- Left-skewed
- Unimodal
- Outliers: ~3 PSU

Center:

~27 PSU

Spread:

Large variation

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