

Measures of Biodiversity

First read and take notes on the following [excerpt from LibreTexts](#). Shannon-Wiener and Simpson's Index are both measures of the diversity of an individual community.

The Shannon-Wiener Index (H)

[Watch this video.](#)

$$H' = - \sum_{i=1}^s p_i \ln p_i$$

The Simpson Index (D)

[Watch this video.](#) Notice that Simpson's Index is often calculated as $1 - D$ or $1/D$.

$$D = \frac{1}{\sum_{i=1}^s p_i^2}$$

s = number of different species

p_i = the relative frequency of the i th species = n_i / N

n_i = the number of the i th species

N = total number of organisms

Sorensen's Coefficient C

Sorensen's Coefficient can be used to compare the biodiversity in two communities.

$$C_s = \left(\frac{2 \cdot c}{S_1 + S_2} \right)$$

c = the number of species in common in both communities

S_1 = the number of species in community 1

S_2 = the number of species in community 2