Diversity Indices

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2023-10-01

Load libraries

```
library(vegan)
```

```
## Loading required package: permute
```

```
## Loading required package: lattice
```

```
## This is vegan 2.6-4
```

```
data(BCI, BCI.env)
```

Species richness

Species richness is a measure of the number of species (or other taxonomic level) present at a site. Sites with more taxa are considered **richer**.

Diversity indices

Shannon_Weaver (or H)

The Shannon entropy (H) is calculated using the formula:

$$H = -\sum_{i=1}^{S} p_i * \ln(p_i)$$

where:
- $\sum$: A Greek symbol that means "sum",
- ln: Natural logarithm,
- p_i: The proportion of the entire community made up of species i.

This formula quantifies the uncertainty or information content in a system with multiple species, where each p_i represents the relative abundance of a specific species. - The higher the value of H, the higher the diversity of species in a particular community.
- The lower the value of H, the lower the diversity.
- A value of H = 0 indicates a community that only has one species.