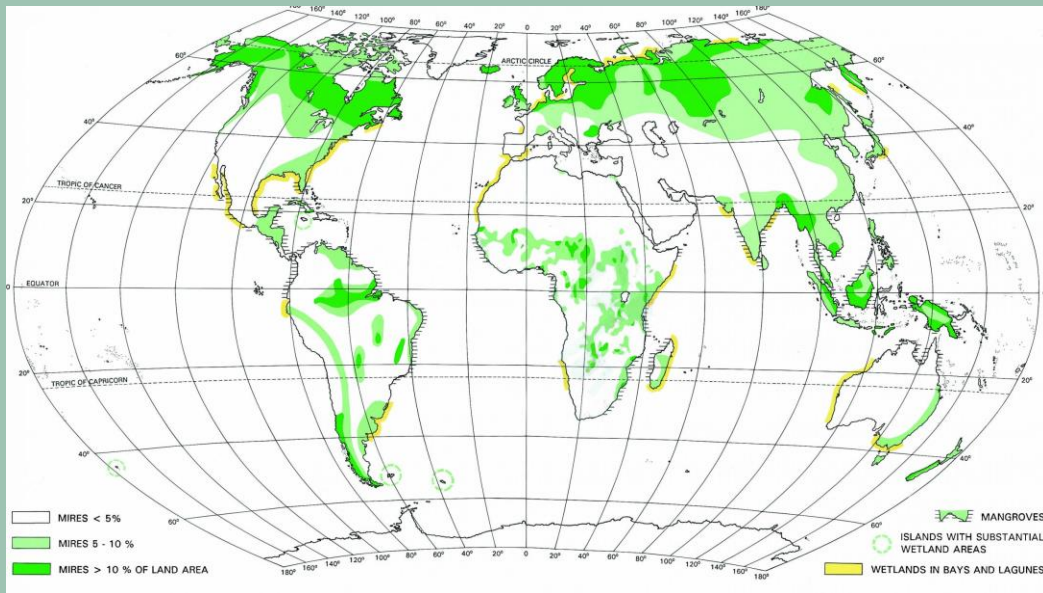




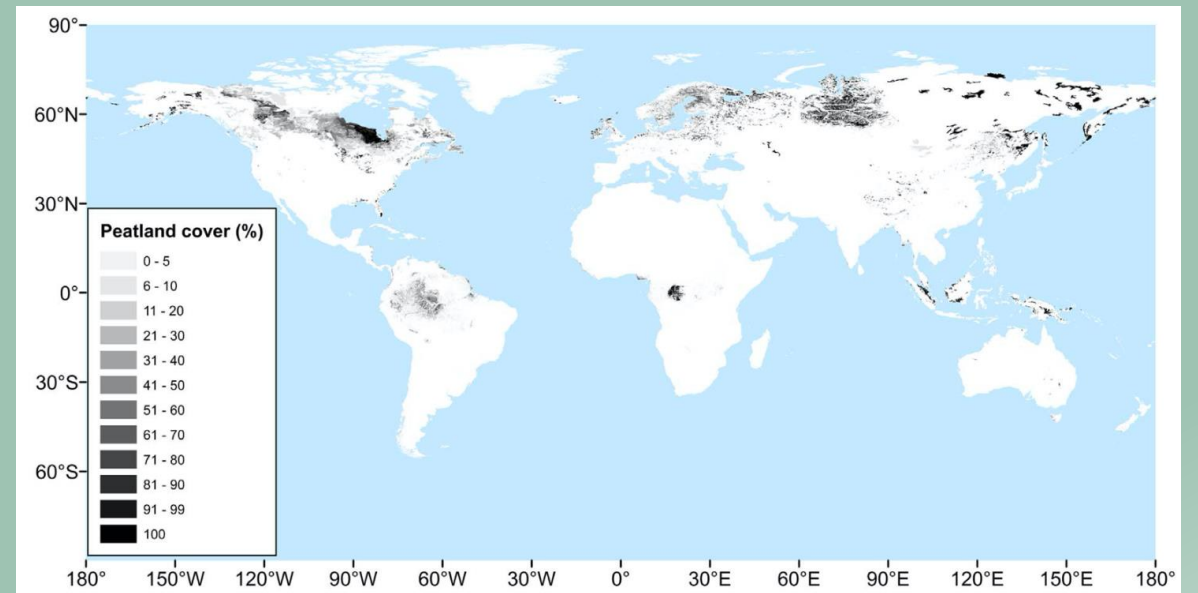
# Peatland Vegetation: Data Analysis

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# Peatland Distribution



Peatlands distribution according to Lappalainen, [1996](#)



Global Peatland distribution according to PEATMAP ( Xu et al. 2018)

# Peatland Destruction



Deforestation in Riau province, Sumatra, to make way for an [oil palm](#) plantation (2007)



Palm oil-driven deforestation in Indonesia (2022)

# Peatland Restoration



<https://www.wetlands.org/peatland-treasures/peatland-conservation-and-restoration/>

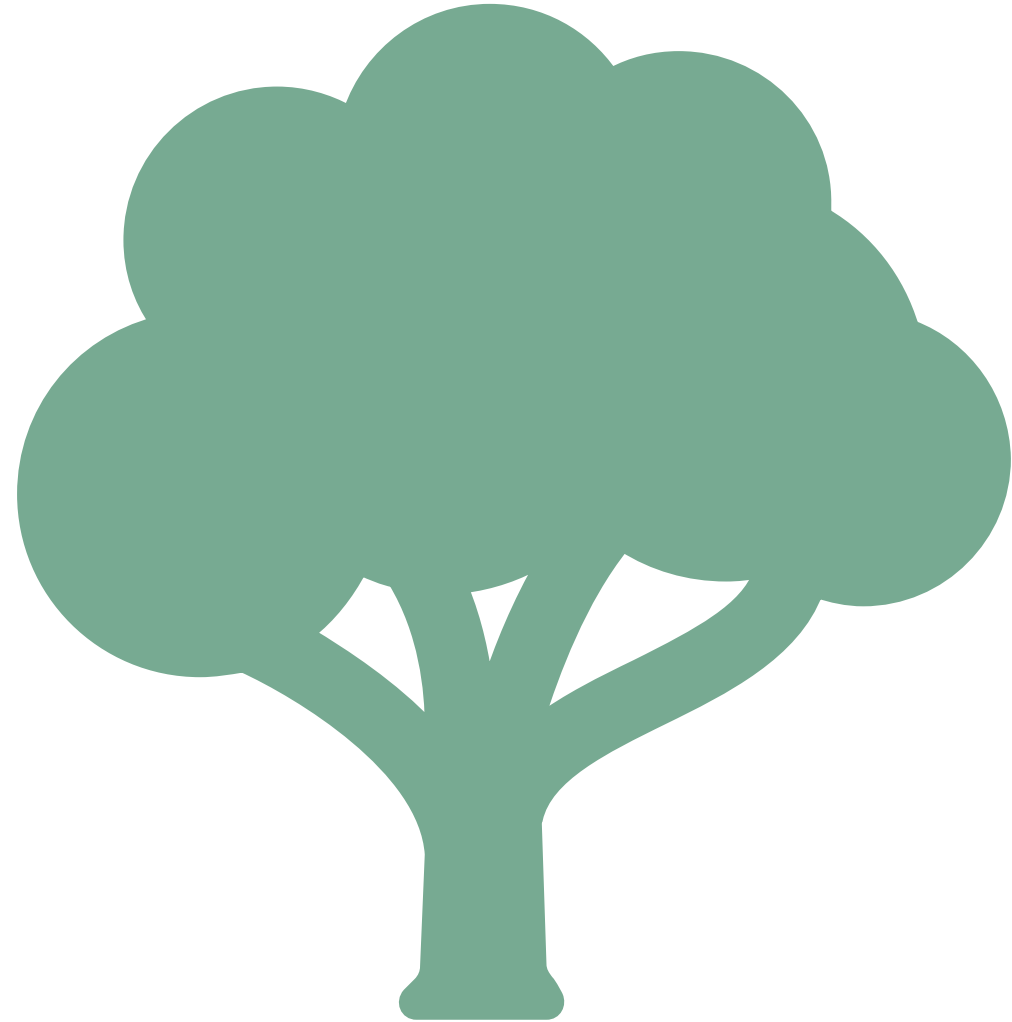


<https://peatlands.org/peatlands/peatland-restoration/>



# **Biodiversity Assessment**

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# I. Abundance Estimation

## A. Relative Frequency

$$\text{Relative frequency} = \frac{\text{Frequency of a species}}{\text{Summation of all frequencies}} \times 100$$

# I. Abundance Estimation

## B. Relative Density

$$\text{Relative density} = \frac{\text{Density of a species}}{\text{Summation of all densities}} \times 100$$

# I. Abundance Estimation

## C. Relative Dominance

$$\text{Relative dominance} = \frac{\text{Summation of dominance of a species}}{\text{Summation of all dominance}} \times 100$$



# I. Abundance Estimation

## D. Species Importance Value Index

$$\text{Importance value index} = \frac{\text{Rel. frequency} + \text{Rel. density} + \text{Rel. dominance}}{3}$$

## II. Homogeneity and Heterogeneity

- Divide the species or structural types that occur in the study area into five classes – A, B, C, D and E based on percentage frequency:

Class A = 1-20%

Class B = 21-40%

Class C = 41-60%

Class D = 61-80%

Class E = 81-100%

# III. Diversity Indices

- The **Simpson's Index of Diversity** gives more weight to common or dominant species
- The **Shannon Index** assumes all species are represented in a sample and that they are randomly sampled
- Biodiversity researchers prefer to stick to two numbers for comparative studies, combining a direct estimate of species richness with some measure of dominance or evenness

# III. Diversity Indices

## A. Simpson's Index of Diversity

- The value of this index ranges between 0 and 1, the greater the value, the greater the diversity

$$1 - D = \sum p_i^2$$

# III. Diversity Indices

## B. Shannon Index

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

<b>Description</b>	<b>Value</b>
Low	H = 1.00-2.49
Moderate	H = 2.50-2.90
High	H = 3.00-4.00

# IV. Community Similarity

## Sorenson's Coefficient (CC)

- CC gives a value between 0 to 1, the closer the value to 1, the more the communities have in common

$$CC = \frac{2ab}{a + b}$$



**Any  
Question?**

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**Thank You  
For  
Listening**

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