# WorldClim - Global Climate Data

*Free climate data for ecological modeling and GIS*

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# Bioclimatic variables

Bioclimatic variables are derived from the monthly temperature and rainfall values in order to generate more biologically meani
These are often used in species distribution modeling and related ecological modeling techniques. The bioclimatic variables repr
trends (e.g., mean annual temperature, annual precipitation) seasonality (e.g., annual range in temperature and precipitation) a
limiting environmental factors (e.g., temperature of the coldest and warmest month, and precipitation of the wet and dry quarte
a period of three months (1/4 of the year).

They are coded as follows:

BIO1 = Annual Mean Temperature
BIO2 = Mean Diurnal Range (Mean of monthly (max temp - min temp))
BIO3 = Isothermality (BIO2/BIO7) (* 100)
BIO4 = Temperature Seasonality (standard deviation *100)
BIO5 = Max Temperature of Warmest Month
BIO6 = Min Temperature of Coldest Month
BIO7 = Temperature Annual Range (BIO5-BIO6)
BIO8 = Mean Temperature of Wettest Quarter
BIO9 = Mean Temperature of Driest Quarter
BIO10 = Mean Temperature of Warmest Quarter
BIO11 = Mean Temperature of Coldest Quarter
BIO12 = Annual Precipitation
BIO13 = Precipitation of Wettest Month
BIO14 = Precipitation of Driest Month
BIO15 = Precipitation Seasonality (Coefficient of Variation)
BIO16 = Precipitation of Wettest Quarter
BIO17 = Precipitation of Driest Quarter
BIO18 = Precipitation of Warmest Quarter
BIO19 = Precipitation of Coldest Quarter

This scheme follows that of ANUCLIM, except that for temperature seasonality the standard deviation was used because a coeffi
variation does not make sense with temperatures between -1 and 1).

To create these values yourself, you can use the 'biovars' function in the R package dismo