

# Package: nordklimdata1 (via r-universe)

August 24, 2024

**Type** Package

**Title** Dataset for Climate Analysis with Data from the Nordic Region

**Version** 1.2

**Encoding** UTF-8

**Description** The Nordklim dataset 1.0 is a unique and useful achievement for climate analysis. It includes observations of twelve different climate elements from more than 100 stations in the Nordic region, in time span over 100 years. The project contractors were NORDKLIM/NORDMET on behalf of the National meteorological services in Denmark (DMI), Finland (FMI), Iceland (VI), Norway (DNMI) and Sweden (SMHI).

**License** GPL (>= 3)

**Depends** R (>= 2.10)

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**Repository** CRAN

**Repository/R-Forge/Project** nordklimdata1

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nordklidata1-package *Nordklim data set 1.0*

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## Description

The NORDKLIM data set contains close to 70 000 years of monthly data from 114 stations. The station network covers all five Nordic countries, including data from the Faeroe Islands, Jan Mayen, Bjornoya and Svalbard. There are seven monthly climatic elements describing temperature, two on precipitation and one on air pressure, cloud cover and snow cover.

Project contractors: NORDKLIM/NORDMET on behalf of the National meteorological services in Denmark (DMI), Finland (FMI), Iceland (VI), Norway (DNMI) and Sweden (SMHI)

## Details

Package: nordklidata1  
Type: Package  
Version: 1.0  
Date: 2013-03-10  
License: GPL (>= 3)

## Author(s)

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## Source

[http://www.smhi.se/hfa\\_coord/nordklim](http://www.smhi.se/hfa_coord/nordklim)

## References

Nordklim dataset 1.0 - description and illustrations Norwegian meteorological institute, 08/01 KLIMA, 2001

**Description**

The NORDKLIM data set - monthly data for 7 climatic elements from 114 stations in 5 Nordic countries.

**Usage**

```
data(NordklimData)
```

**Format**

A data frame with 71329 observations on the following 16 variables.

**NordklimNumber** Nordklim number identifier

**ClimateElement** Climate element identifier

**FirstYear** First year of the dataset

**January** Readings for January

**February** Readings for February

**March** Readings for March

**April** Readings for April

**May** Readings for May

**June** Readings for June

**July** Readings for July

**August** Readings for August

**September** Readings for September

**October** Readings for October

**November** Readings for November

**December** Readings for December

**CountryCode** Country code

**Details**

The NORDKLIM data set has 16 columns, the first three columns are the Nordklim number, climate element number and first year of the dataset, the next 12 columns are twelve months of readings, from January to December and the last column is the country code. Monthly climatic elements in the NORDKLIM data set:

Element number	Climatic element	Unit	Abbreviation
101	Mean temperature	0.1 C	T
111	Mean maximum temperature	0.1 C	Tx

112	Highest maximum temperature	0.1 C	Th
113	Day of Th	date	Thd
121	Mean minimum temperature	0.1 C	Tn
122	Lowest minimum temperature	0.1 C	Tl
123	Day of Tl	date	Tld
401	Mean Pressure	0.1 hPa	P
601	Precipitation Sum	0.1 mm	R
602	Maximum 1-day precipitation	0.1 mm	Rx
701	Number of days with snow cover (> 50% covered)	days	dsc
801	Mean cloud cover	%	N

### Source

[http://www.smhi.se/hfa\\_coord/nordklim](http://www.smhi.se/hfa_coord/nordklim)

### References

Nordklim dataset 1.0 - description and illustrations Norwegian meteorological institute, 08/01 KLIMA, 2001

### Examples

```
## Not run:
data(NordklimData)
str(NordklimData)
# get all the country codes
countries <- unique(NordklimData$CountryCode)
# earliest and latest year of data collection
minFirstYear<- min(NordklimData$FirstYear)
maxFirstYear<- max(NordklimData$FirstYear)
allyears <- min(NordklimData$FirstYear):max(NordklimData$FirstYear)
# get the yearly average of all records
avgNordk <- cbind(NordklimData[,c('CountryCode', 'ClimateElement', 'FirstYear',
'NordklimNumber')],
YrAvg=apply(NordklimData[,c('January', 'February', 'March', 'April', 'May', 'June',
'July', 'August', 'September', 'October', 'November', 'December')],1,function(x)
{x[x== -9999]<-NA;mean(x,na.rm = TRUE)}))
str(avgNordk)
# plot the Danish mean temperatures for its 5 stations (for a quick visual
# inspection, no need for labels or legends)
DanavgNordk <- avgNordk[which(avgNordk$CountryCode=='DK' &
avgNordk$ClimateElement==101),c('FirstYear', 'YrAvg', 'NordklimNumber')]
p <- unique(DanavgNordk$NordklimNumber)
for (Dp in p) { plot(DanavgNordk[which(DanavgNordk$NordklimNumber==Dp),
c('FirstYear', 'YrAvg')],type='l',col=( which(Dp==p)),
xlim=c(min(DanavgNordk$FirstYear), max(DanavgNordk$FirstYear)),
ylim=c(60,120)); if (Dp != p[length(p)]) par(new=T)}
# average each country
avgNordkCountry=aggregate(YrAvg ~ CountryCode+ClimateElement+FirstYear ,
data = avgNordk, function(x) {x[x== -9999]<-NA;mean(x,na.rm = TRUE)})
```

```

str(avgNordkCountry)
# plot the temperatures (mean of all stations) for each country
for (country in countries) { plot(avgNordkCountry[
which(avgNordkCountry$CountryCode==country & avgNordkCountry$ClimateElement==101),
c('FirstYear','YrAvg')],type='l',col=( which(country==countries)),
xlim=c(minFirstYear, maxFirstYear),ylim=c(0,120),
main='Mean of yearly means of all stations for each country',
xlab='Years',ylab='Mean temperature');
if (country != countries[length(countries)]) par(new=T)}
legend('topleft', legend = countries, col=1:5, pch=1, lty=1, merge=TRUE)

## End(Not run)

```

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NordklimStationCatalogue

*The Nordklim Station Catalogue*

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### Description

Information about the Nordklim stations and climate element numbers.

### Usage

```
data(NordklimStationCatalogue)
```

### Format

A data frame with 114 observations on the following 31 variables.

**Station** Station id  
**Catalogue** Catalogue id  
**Station.name** Station name  
**Height.ASL** Height at sea level  
**Country** Country  
**Nordklim.number** Nordklim id  
**Lat.Long** Lat./Long.  
**X101** Mean temperature  
**X101E** Mean temperature error  
**X111** Mean maximum temperature  
**X111E** Mean maximum temperature error  
**X112** Highest maximum temperature  
**X112E** Highest maximum temperature error  
**X113** Day of Th  
**X113E** Day of Th error

**X121** Mean minimum temperature  
**X121E** Mean minimum temperature error  
**X122** Lowest minimum temperature  
**X122E** Lowest minimum temperature error  
**X123** Day of TI  
**X123E** Day of TI error  
**X401** Mean Pressure  
**X401E** Mean Pressure error  
**X601** Precipitation Sum  
**X601E** Precipitation Sum error  
**X602** Maximum 1-day precipitation  
**X602E** Maximum 1-day precipitation error  
**X701** Number of days with snow cover (> 50% covered)  
**X701E** Number of days with snow cover (> 50% covered) error  
**X801** Mean cloud cover  
**X801E** Mean cloud cover error

### Details

The station catalogue has five columns with station information (station name, height at sea level, country code, NORDKLIM number and Lat./Long.) followed by 24 columns, two for each climate element number, the first is the first year of the dataset and the second is the last year.

### Source

[http://www.smhi.se/hfa\\_coord/nordklim](http://www.smhi.se/hfa_coord/nordklim)

### References

Nordklim dataset 1.0 - description and illustrations Norwegian meteorological institute, 08/01 KLIMA, 2001

### Examples

```

## Not run:
data(NordklimStationCatalogue)
str(NordklimStationCatalogue)
# 114 stations
length(NordklimStationCatalogue$Nordklim.number)
# in 5 Nordic countries
length(NordklimStationCatalogue$Country)
# how many stations per country?
table(NordklimStationCatalogue$Country,dnn =
list("Number of stations per country"))
# how many climate elements recorded per station?
climElSta <- rowSums(sign(NordklimStationCatalogue[,c('X101','X111','X112',

```

```
'X113','X121','X122','X123','X401','X601','X602','X701','X801')]],
na.rm = TRUE)
barplot(climElSta,ylab='Climate elements',xlab='Stations',
main='Climate elements recorded per station')
# how many stations per climate element?
staClimEl <- colSums(sign(NordklimStationCatalogue[,c('X101','X111','X112','X113','X121',
'X122','X123','X401','X601','X602','X701','X801')]), na.rm = TRUE)
barplot(staClimEl,xlab='Climate element',ylab='Stations',
main='Stations per climate element')
# how many stations have 1,2,3, ..., 12 climate elements?
# (same as Fig. 2 from Nordklim dataset 1.0 - description and illustrations)
barplot(table(climElSta),xlab='Climate element',ylab='Stations',
main='Number of stations as a function of number of climatic elements')

## End(Not run)
```

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