

# Package ‘rsoi’

January 11, 2019

**Type** Package

**Title** Import Various Northern and Southern Hemisphere Climate Indices

**Version** 0.5.0

**Description** Downloads Southern Oscillation Index, Oceanic Nino Index, North Pacific Gyre Oscillation data, North Atlantic Oscillation and Arctic Oscillation. Data sources are described in the README file.

**License** GPL-3

**URL** <https://github.com/boshek/rsoi>

**Depends** R (>= 3.3.0)

**Imports** stats, curl

**Suggests** devtools, rpd, testthat, tibble

**Encoding** UTF-8

**LazyData** true

**RoxygenNote** 6.1.1

**NeedsCompilation** no

**Author** Sam Albers [aut, cre] (<<https://orcid.org/0000-0002-9270-7884>>)

**Maintainer** Sam Albers <[sam.albers@gmail.com](mailto:sam.albers@gmail.com)>

**Repository** CRAN

**Date/Publication** 2019-01-11 08:50:03 UTC

## R topics documented:

download_ao . . . . .	2
download_enso . . . . .	2
download_nao . . . . .	3
download_npgo . . . . .	4
download_oni . . . . .	5
download_soi . . . . .	6

<b>Index</b>	<b>7</b>
--------------	----------

---

`download_ao`*Download North Atlantic Oscillation data*

---

**Description**

surface sea-level pressure difference between the Subtropical (Azores) High and the Subpolar Low.

**Usage**

```
download_ao()
```

**Value**

- Month: Month of record
- Year: Year of record
- NAO: North Atlantic Oscillation

**References**

<https://www.ncdc.noaa.gov/teleconnections/nao>

**Examples**

```
## Not run:  
nao <- download_ao()  
  
## End(Not run)
```

---

`download_enso`*Download Southern Oscillation Index and Oceanic Nino Index data*

---

**Description**

The Southern Oscillation Index is defined as the standardized difference between barometric readings at Darwin, Australia and Tahiti. The Oceanic Nino Index is average sea surface temperature in the Nino 3.4 region (120W to 170W) averaged over three months. Phases are categorized by Oceanic Nino Index:

- Warm phase of El Nino/ Southern Oscillation when 3-month average sea-surface temperature departure of positive 0.5 degC
- Cool phase of La Nina/ Southern Oscillation when 3-month average sea-surface temperature departure of negative 0.5 degC
- Neutral phase is defined as when the three month temperature average is between +0.5 and -0.5 degC

**Usage**

```
download_enso(climate_idx = c("all", "soi", "oni", "nngo"),
              create_csv = FALSE)
```

**Arguments**

`climate_idx` Choose which ENSO related climate index to output. Current arguments supported are `soi` (the Southern Oscillation Index), `oni` (the Oceanic Nino Index), `nngo` (the North Pacific Gyre Oscillation) and `all`. `all` outputs each supported index variable as a slimmer dataset than each individual climate index call.

`create_csv` Logical option to create a local copy of the data. Defaults to `FALSE`.

**Value**

- `Date`: Date object that uses the first of the month as a placeholder. Date formatted as date on the first of the month because R only supports one partial of date time
- `Month`: Month of record
- `Year`: Year of record
- `ONI`: Oceanic Oscillation Index
- `phase`: ENSO phase
- `SOI`: Southern Oscillation Index
- `NPGO`: North Pacific Gyre Oscillation

**Examples**

```
## Not run:
enso <- download_enso()
plot(x = enso$Date, y = enso$SOI, type = "l")

## End(Not run)
```

---

download\_nao

*Download North Atlantic Oscillation data*


---

**Description**

surface sea-level pressure difference between the Subtropical (Azores) High and the Subpolar Low.

**Usage**

```
download_nao()
```

**Value**

- Month: Month of record
- Year: Year of record
- NAO: North Atlantic Oscillation

**References**

<https://www.ncdc.noaa.gov/teleconnections/nao>

**Examples**

```
## Not run:  
nao <- download_nao()  
  
## End(Not run)
```

---

download\_npgo

*Download North Pacific Gyre Oscillation data*

---

**Description**

North Pacific Gyre Oscillation data also known as the Victoria mode

**Usage**

```
download_npgo()
```

**Value**

- Date: Date object that uses the first of the month as a placeholder. Date formatted as date on the first of the month because R only supports one partial of date time
- Year: Year of Record
- Month: Month of record
- NPGO: North Pacific Gyre Oscillation

**References**

<http://www.oces.us/npgo>

**Examples**

```
## Not run:  
npgo <- download_npgo()  
  
## End(Not run)
```

---

`download_oni`*Download Oceanic Nino Index data*

---

**Description**

The Oceanic Nino Index is average sea surface temperature in the Nino 3.4 region (120W to 170W) averaged over three months. Phases are categorized by Oceanic Nino Index:

- Warm phase of El Nino/ Southern Oscillation when 3-month average sea-surface temperature departure of positive 0.5 degC
- Cool phase of La Nina/ Southern Oscillation when 3-month average sea-surface temperature departure of negative 0.5 degC
- Neutral phase is defined as when the three month temperature average is between +0.5 and -0.5 degC

**Usage**`download_oni()`**Value**

- Date: Date object that uses the first of the month as a placeholder. Date formatted as date on the first of the month because R only supports one partial of date time
- Month: Month of record
- Year: Year of record
- ONI: Oneanic Oscillation Index
- ONI\_month\_window: 3 month period over which the Oneanic Oscillation Index is calculated
- phase: ENSO phase

**References**

[http://www.cpc.ncep.noaa.gov/products/analysis\\_monitoring/ensostuff/detrend.nino34.ascii.txt](http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/ensostuff/detrend.nino34.ascii.txt)

**Examples**

```
## Not run:  
oni <- download_oni()  
  
## End(Not run)
```

---

`download_soi`*Download Southern Oscillation Index data*

---

**Description**

The Southern Oscillation Index is defined as the standardized difference between barometric readings at Darwin, Australia and Tahiti.

**Usage**

```
download_soi()
```

**Value**

- **Date:** Date object that uses the first of the month as a placeholder. Date formatted as date on the first of the month because R only supports one partial of date time
- **Month:** Month of record
- **Year:** Year of record
- **SOI:** Southern Oscillation Index
- **SOI\_3MON\_AVG:** 3 Month Average Southern Oscillation Index

**References**

<https://www.ncdc.noaa.gov/teleconnections/enso/indicators/soi/>

**Examples**

```
## Not run:  
soi <- download_soi()  
plot(x = enso$Date, y = enso$SOI, type = "l")  
  
## End(Not run)
```

# Index

download\_ao, [2](#)  
download\_enso, [2](#)  
download\_nao, [3](#)  
download\_npgo, [4](#)  
download\_oni, [5](#)  
download\_soi, [6](#)