

# Package: ncapi (via r-universe)

August 27, 2024

**Title** What the Package Does (one line, title case)  
**Version** 0.0.0.9000  
**Description** What the package does (one paragraph).  
**Depends** R (>= 3.4.0)  
**License** GPL-3  
**Encoding** UTF-8  
**LazyData** true  
**Imports** Rcpp  
**LinkingTo** Rcpp  
**RoxygenNote** 7.1.2  
**Repository** <https://hypertidy.r-universe.dev>  
**RemoteUrl** <https://github.com/hypertidy/ncapi>  
**RemoteRef** HEAD  
**RemoteSha** df7853935fe38781879a44e376f2a588a998ca4b

## Contents

ncapi . . . . .	2
nc_data_types . . . . .	2
nc_types . . . . .	2
Rnc_close . . . . .	3
Rnc_inq . . . . .	3
Rnc_inq_att . . . . .	4
Rnc_inq_dimension . . . . .	4
Rnc_inq_dims . . . . .	5
Rnc_inq_grpname . . . . .	6
Rnc_inq_grps . . . . .	6
Rnc_inq_natts . . . . .	7
Rnc_inq_vardims . . . . .	7
Rnc_inq_variable . . . . .	8
Rnc_open . . . . .	8

<b>Index</b>	<b>10</b>
--------------	-----------

---

ncapi	<i>ncapi.</i>
-------	---------------

---



---

nc_data_types	<i>NetCDF types</i>
---------------	---------------------

---

### Description

A data frame of the names of the NetCDF data types. Column 'name' is the descriptive name, and 'id' is the 0-based index, corresponding to the value returned by `nc_inq_var`.

### Details

See code in `data-raw/` for the creation.

[http://www.unidata.ucar.edu/software/netcdf/docs/data\\_type.html](http://www.unidata.ucar.edu/software/netcdf/docs/data_type.html)

---

nc_types	<i>NetCDF types</i>
----------	---------------------

---

### Description

Return the descriptive name of the NetCDF data type from its ID number. The ID is 0-based. [http://www.unidata.ucar.edu/software/netcdf/docs/data\\_type.html](http://www.unidata.ucar.edu/software/netcdf/docs/data_type.html)

### Usage

```
nc_types(x)
```

### Arguments

x id integer, or character coercible to integer

### Value

type names

---

Rnc_close	<i>Close a connection.</i>
-----------	----------------------------

---

**Description**

Close a connection.

**Usage**

```
Rnc_close(ncid)
```

**Arguments**

ncid                   file connection provided by ‘Rnc\_open‘

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
con <- Rnc_open(f_l3b)
Rnc_close(con)
```

---

Rnc_inq	<i>Source inquiry</i>
---------	-----------------------

---

**Description**

once we have a given ID (group-less file, or specific group) find its contents

**Usage**

```
Rnc_inq(grpid)
```

**Arguments**

grpid                   group ID provided by ‘Rnc\_inq\_grps‘

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
con <- Rnc_open(f_l3b)
groupids <- Rnc_inq_grps(con)
l3b <- Rnc_inq(groupids[1])
Rnc_close(con)
print(basename(f_l3b))
print(l3b)
f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_chlor_a_9km.nc", package = "ncapi")
```

---

Rnc_inq_att	<i>Attribute details</i>
-------------	--------------------------

---

### Description

This is a structured list of the *\*names\** of available attributes for the given variable. "Global" is variable -1. See Rnc\_inq\_variable for the variables and the number of attributes. To get the attribute values we need to map its type to the right function call of the API. This probably best done in R?

### Usage

```
Rnc_inq_att(grpid, varid, attid)
```

### Arguments

grpid	con
varid	variable id (can be global at -1)
attid	attribute id (within variable) f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_ch package = "ncapi") con <- Rnc_open(f_l3m) vars <- tibble::as_tibble(Rnc_inq_variable(con)) lapply(seq_len(vars\$natts[1])-1, function(iatt) Rnc_inq_att(con, vars\$id[1], iatt)) Rnc_inq_att(con, vars\$id[1], seq_len(vars\$natts[1])[5]) Rnc_close(con)

---

Rnc_inq_dimension	<i>Dimension inquiry</i>
-------------------	--------------------------

---

### Description

Dimension inquiry

### Usage

```
Rnc_inq_dimension(grpid)
```

### Arguments

grpid	group ID provided by 'Rnc_inq_grps'
-------	-------------------------------------

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
con <- Rnc_open(f_l3b)
groupids <- Rnc_inq_grps(con)
Rnc_inq_dimension(groupids[1])
Rnc_close(con)
f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_chlor_a_9km.nc", package = "ncapi")
con <- Rnc_open(f_l3m)
## watch out because if only one, the file con is the one
##groupids <- Rnc_inq_grps(con)
tibble::as_tibble(Rnc_inq_dimension(con))
Rnc_close(con)
## that should be the same as
#ncmeta::nc_dims(f_l3m)
```

---

Rnc_inq_dims	<i>Dimension inquiry</i>
--------------	--------------------------

---

**Description**

Dimension inquiry

**Usage**

```
Rnc_inq_dims(grpid)
```

**Arguments**

grpid                    group ID provided by ‘Rnc\_inq\_grps’

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
con <- Rnc_open(f_l3b)
groupids <- Rnc_inq_grps(con)
Rnc_inq_dims(groupids[1])
Rnc_close(con)
f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_chlor_a_9km.nc", package = "ncapi")
# ncmeta::nc_dims(f_l3m)
# A tibble: 4 x 4
   id      name length unlim
<int>   <chr> <dbl> <lgl>
1     0     lat   2160 FALSE
2     1     lon   4320 FALSE
3     2     rgb     3 FALSE
4     3 eightbitcolor 256 FALSE
```

---

Rnc\_inq\_grpname      *Inquire group name by ID*

---

**Description**

Inquire group name by ID

**Usage**

Rnc\_inq\_grpname(grpid)

**Arguments**

grpid                  group ID provided by ‘Rnc\_inq\_grps’

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
con <- Rnc_open(f_l3b)
groupids <- Rnc_inq_grps(con)
Rnc_inq_grpname(groupids[1])
lapply(Rnc_inq_grps(con), Rnc_inq_grpname)
Rnc_close(con)
```

---

Rnc\_inq\_grps              *Inquire group IDs*

---

**Description**

Inquire group IDs

**Usage**

Rnc\_inq\_grps(ncid)

**Arguments**

ncid                    file connection provided by ‘Rnc\_open’

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
con <- Rnc_open(f_l3b)
Rnc_inq_grps(con)
Rnc_close(con)
```

---

Rnc_inq_natts	<i>We already know this from Rnc_inq_variable</i>
---------------	---

---

**Description**

We already know this from Rnc\_inq\_variable

**Usage**

```
Rnc_inq_natts(grpid, varid)
```

**Arguments**

grpid	con
varid	variable id

---

Rnc_inq_vardims	<i>Dimensions of variables</i>
-----------------	--------------------------------

---

**Description**

Dimensions of variables

**Usage**

```
Rnc_inq_vardims(grpid, ivar)
```

**Arguments**

grpid	group ID provided by 'Rnc_inq_grps'
ivar	index of variable

**Examples**

```
f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_chlor_a_9km.nc", package = "ncapi")
con <- Rnc_open(f_l3m)
variables <- tibble::as_tibble(Rnc_inq_variable(con))
  setNames(lapply(variables$id, function(x) Rnc_inq_vardims(con, x)), variables$name)
Rnc_close(con)
```

---

Rnc_inq_variable	<i>Variable inquiry</i>
------------------	-------------------------

---

**Description**

Variable inquiry

**Usage**

```
Rnc_inq_variable(grpid)
```

**Arguments**

grpid                    group ID provided by ‘Rnc\_inq\_grps’

**Examples**

```
f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_chlor_a_9km.nc", package = "ncapi")
con <- Rnc_open(f_l3m)
tibble::as_tibble(Rnc_inq_variable(con))
Rnc_close(con)
## that should be the same as
# ncmeta::nc_vars(f_l3m)
# # A tibble: 4 x 5
#   id   name  type ndims natts
#   <int> <chr> <chr> <int> <int>
# 0    chlor_a float    2    12
# 1     lat float     1     5
# 2     lon float     1     5
# 3    palette ubyte    2     0
```

---

Rnc_open	<i>Open a connection.</i>
----------	---------------------------

---

**Description**

Pass a character data source name to the internal nc\_open library function.

**Usage**

```
Rnc_open(dsn)
```

**Arguments**

dsn                    data source name, i.e. file path or server path

**Examples**

```
f_l3b <- system.file("extdata", "oceandata", "S2008001.L3b_DAY_CHL.nc", package = "ncapi")
Rnc_open(f_l3b)
f_l3m <- system.file("extdata", "oceandata", "S2008001.L3m_DAY_CHL_chlor_a_9km.nc", package = "ncapi")
Rnc_open(f_l3m)
u_cst <- "http://coastwatch.pfeg.noaa.gov/erddap/griddap/erdQSwind3da"
Rnc_open(u_cst)
```

# Index

[nc\\_data\\_types](#), [2](#)

[nc\\_types](#), [2](#)

[ncapi](#), [2](#)

[Rnc\\_close](#), [3](#)

[Rnc\\_inq](#), [3](#)

[Rnc\\_inq\\_att](#), [4](#)

[Rnc\\_inq\\_dimension](#), [4](#)

[Rnc\\_inq\\_dims](#), [5](#)

[Rnc\\_inq\\_grpname](#), [6](#)

[Rnc\\_inq\\_grps](#), [6](#)

[Rnc\\_inq\\_natts](#), [7](#)

[Rnc\\_inq\\_vardims](#), [7](#)

[Rnc\\_inq\\_variable](#), [8](#)

[Rnc\\_open](#), [8](#)