

# Package ‘noaoceans’

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**Type** Package

**Title** Collect Ocean Data from NOAA

**Version** 0.2.0

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**Description** Provides a small set of tools for collecting data from National Oceanic and Atmospheric Administration (NOAA) data sources. The functions provided in the package are wrappers around NOAA's existing APIs which is found at <<https://tidesandcurrents.noaa.gov/api/>>.

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**Encoding** UTF-8

**LazyData** true

**Suggests** testthat, covr, knitr, rmarkdown, dplyr, httpptest, ggplot2, maps, mapdata

**RoxygenNote** 6.1.1

**Imports** htr, jsonlite, rvest, xml2

**VignetteBuilder** knitr

**NeedsCompilation** no

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 coops\_station\_inventory

*Gather Co-OPS Station Data History*


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### Description

Find the historical data availability for a CO-OPS station. This data is obtained by scraping the data inventory page for the station. See the page for the [Barbuda\(station\\_id=9761115\)](#) as an example.

### Usage

```
coops_station_inventory(station_id)
```

### Arguments

`station_id` is a character string that provides the a 7 character station id.

### Details

In the returned data frame each row represents a particular oceanographic or meteorological measurement. The name of the measurement is provided in the first column (**Type**). The second column, **From**, provides a timestamp indicating the earliest available data for the measurement. The third column, **To**, provides the last date and time when the measurement is available. When there are gaps in availability there will be two rows from a given measurement. See the table below as an example.

<b>Type</b>	<b>From</b>	<b>To</b>
Wind	2011-06-10 21:06	2019-11-30 06:36
Air Temperature	2011-06-10 20:48	2019-11-30 06:36
Water Temperature	2011-06-10 20:48	2013-03-10 03:48
Water Temperature	2015-04-03 13:06	2019-11-30 06:36

As of the release of version 0.20.0 there are thirteen stations where the data inventory is missing and an **Error** will be returned if queried with `coops_station_inventory()`. The list of stations without a data inventory can be accessed by calling `noaaoceans:::known_missing_inventory()`. Due to heavy use of JavaScript on data inventory pages and a desire to keep package dependencies to a minimum the list of known stations has been hard coded. Please create an [Issue](#) or [Pull Request](#) to update the list stations missing data inventory.

### Value

A data frame.

### Examples

```
# Working station to show results.
inventory_df<- coops_station_inventory(station_id=9761115)
print(inventory_df)

# Station with known missing data inventory
coops_station_inventory(station_id=8517986)
```

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list\_coops\_stations     *Find All NOAA Stations*

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### Description

This function produces a data frame with all NOAA stations. The list of stations is retrieved from [NOAA's](#) website when the function is called.

### Usage

```
list_coops_stations()
```

### Details

In the returned data frame there is one row for each station. The name, location and date that the station was established are included as columns. In addition, there are columns that provide the status of various sensors at the station is included. The column names indicate the type of sensor

In the status columns a value of *1* indicates that sensor is working A *0* indicates that the sensor is not working. If a particular station does not have the capability indicated by the column name, the value provided is NA

### Value

A data frame.

### Examples

```
# Do Not Run

station_df <- list_coops_stations()
```

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noaaoceans     *noaaoceans: A package for collecting oceans and weather data from NOAA.*

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### Description

The noaaoceans package provides several functions to access NOAA APIs. It includes functions to access the [CO-OPS API](#) and metadata for each of the tide sensor stations.

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query_coops_data	<i>Retrieve Tides Data From NOAA CO-OPS API</i>
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### Description

Retrieve Tides Data From NOAA CO-OPS API

### Usage

```
query_coops_data(station_id, start_date, end_date, data_product,
                 units = "english", time_zone = "gmt", datum = NULL,
                 interval = NULL, bin = NULL)
```

### Arguments

station_id	is a character string that provides the a 7 character station id.
start_date	is a character string that specifies the start date for the retrieval period. Dates can be specified in the following formats: <i>yyyyMMdd</i> , <i>yyyyMMdd HH:mm</i> , <i>MM/dd/yyyy</i> , or <i>MM/dd/yyyy HH:mm</i> .
end_date	is a character string that specifies the end date for the retrieval period. Dates can be specified in the following formats: <i>yyyyMMdd</i> , <i>yyyyMMdd HH:mm</i> , <i>MM/dd/yyyy</i> , or <i>MM/dd/yyyy HH:mm</i> .
data_product	specifies the data product to be returned. See <a href="#">CO-OPS API Documentation</a> for the available data products.
units	a character string specifying if the data should be returned using metric or English units. Defaults to 'english'.
time_zone	a character string specifying what time zone information the data should be returned with. Options include Greenwich Mean Time 'gmt', Local Standard Time 'lst', and Local Standard/Local Daylight Time 'lst_ldt'. Local times refer to the local time of the specified station. The default is 'gmt'
datum	a character string indicating the datum that should be returned. See <a href="#">CO-OPS API Documentation</a> for the available datums.
interval	a character string that specifies the interval for which Meteorological data is returned. The API defaults to every six minutes and does not need to be specified. Other option include hourly 'h' and 'hilo'. The retrieval time period specified by <b>start_date</b> and <b>end_date</b> to create restrictions on the intervals that can be returned. See <a href="#">CO-OPS API Documentation</a> for details
bin	the bin number for the indicated currents station. If a bin is not specified for a PORTS station, the data is returned using a predefined real-time bin.

### Value

a data frame.

**Examples**

```
# Do Not Run
a <- query_coops_data('9414290',
                      '20170101',
                      '20170201',
                      'predictions',
                      interval = 'hilo',
                      datum = 'MLLW')
```

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