

# The dataRetrieval R package

Laura De Cicco<sup>1</sup>

<sup>1</sup>*United States Geological Survey*

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## 1 Introduction to dataRetrieval

For information on getting started in R and installing the package, see Appendix (A): Getting Started.

## 2 General Workflow

```
library(GLRItcl)
```

### 2.1 Introduction

### 2.2 Site Information

## A Getting Started in R

This section describes the options for downloading and installing the dataRetrieval package.

### A.1 New to R?

If you are new to R, you will need to first install the latest version of R, which can be found here: <http://www.r-project.org/>.

There are many options for running and editing R code, one nice environment to learn R is RStudio. RStudio can be downloaded here: <http://rstudio.org/>. Once R and RStudio are installed, the dataRetrieval package needs to be installed as described in the next section.

At any time, you can get information about any function in R by typing a question mark before the functions name. This will open a file (in RStudio, in the Help window) that describes the function, the required arguments, and provides working examples.

```
?getGLRIData
```

To see the raw code for a particular code, type the name of the function:

```
getGLRIData

function (siteNumber, startDate, OWC = TRUE, pCodes = NULL)
{
  setInternet2(use = NA)
  setInternet2(use = FALSE)
  setInternet2(use = NA)
  siteNumber <- paste("USGS-", siteNumber, sep = "")
  siteNumber <- paste(siteNumber, collapse = ";")
  startDate <- format(as.Date(startDate), format = "%m-%d-%Y")
  if (OWC) {
    pCodes <- pcodeINFO$parameter_cd[!is.na(pcodeINFO$class)]
  }
  pCodes <- paste(pCodes, collapse = ";")
  baseURL <- "http://www.waterqualitydata.us/Result/search?siteid="
  url <- paste(baseURL, siteNumber, "&startDateLo=", startDate,
    "&pCode=", pCodes, "&countrycode=US&mimeType=tsv", sep = "")
  suppressWarnings(retval <- read.delim(url, header = TRUE,
    quote = "\"", dec = ".", sep = "\t", colClasses = c("character"),
    fill = TRUE))
  return(retval)
}
<environment: namespace:GLRItcl>
```

## References

- [1] Helsel, D.R. and R. M. Hirsch, 2002. Statistical Methods in Water Resources Techniques of Water Resources Investigations, Book 4, chapter A3. U.S. Geological Survey. 522 pages. <http://pubs.usgs.gov/twri/twri4a3/>
- [2] Hirsch, R. M., Moyer, D. L. and Archfield, S. A. (2010), Weighted Regressions on Time, Discharge, and Season (WRTDS), with an Application to Chesapeake Bay River Inputs. JAWRA Journal of the American Water Resources Association, 46: 857-880. doi: 10.1111/j.1752-1688.2010.00482.x <http://onlinelibrary.wiley.com/doi/10.1111/j.1752-1688.2010.00482.x/full>
- [3] Sprague, L. A., Hirsch, R. M., and Aulenbach, B. T. (2011), Nitrate in the Mississippi River and Its Tributaries, 1980 to 2008: Are We Making Progress? Environmental Science & Technology, 45 (17): 7209-7216. doi: 10.1021/es201221s <http://pubs.acs.org/doi/abs/10.1021/es201221s>