

The dataRetrieval R package

Laura De Cicco¹

¹*United States Geological Survey*

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Contents

1	Introduction to dataRetrieval	1
2	General Workflow	1
2.1	Introduction	1
2.2	Site Information	1
A	Getting Started in R	2
A.1	New to R?	2

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="."  
return(retval)  
  
}  
<environment: namespace:GLRItcl>
```

References

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- [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>