An introduction to knitcitations

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# knitcitations

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* **License**: [MIT](http://opensource.org/licenses/MIT)
* [Package source code on Github](https://github.com/cboettig/knitcitations)
* [**Submit Bugs and feature requests**](https://github.com/cboettig/knitcitations/issues)

knitcitations is an R package designed to add dynamic citations to dynamic documents created with [Yihui's knitr package](https://github.com/yihui/knitr).

## Installation

Install the development version directly from Github

library(devtools)  
install\_github("cboettig/knitcitations")

Or install the current release from your CRAN mirror with install.packages("knitcitations").

## Quick start: rmarkdown (pandoc) mode

Start by loading the library. It is usually good to also clear the bibliographic environment after loading the library, in case any citations are already stored there:

library("knitcitations")  
cleanbib()

Set pandoc as the default format:

options("citation\_format" = "pandoc")

(Note: The old method will eventually be depricated. For documents using knitcitations <= 0.5 it will become necessary to set this as "compatibility").

### Cite by DOI

Cite an article by DOI and the full citation information is gathered automatically. By default this now generates a citation in pandoc-flavored-markdown format. We use the inline command citep("10.1890/11-0011.1") to create this citation (Abrams et al. 2012).

An in-text citation is generated with citet, such as citet("10.1098/rspb.2013.1372") creating the citation to Boettiger and Hastings (2013).

### Cite by URL

Not all the literature we may wish to cite includes DOIs, such as [arXiv](http://arxiv.org) preprints, Wikipedia pages, or other academic blogs. Even when a DOI is present it is not always trivial to locate. With version 0.4-0, knitcitations can produce citations given any URL using the [Greycite API](http://greycite.knowledgeblog.org). For instance, we can use the call citep("http://knowledgeblog.org/greycite") to generate the citation to the Greycite tool (Lord 2012).

### Cite bibtex and bibentry objects directly

We can also use bibentry objects such as R provides for citing packages (using R's citation() function): citep(citation("knitr") produces (Xie 2015b; Xie 2015a; Xie 2014). Note that this package includes citations to three objects, and pandoc correctly avoids duplicating the author names. In pandoc mode, we can still use traditional pandoc-markdown citations like @Boettiger\_2013 which will render as Boettiger and Hastings (2013) without any R code, provided the citation is already in the .bib file we name (see below).

### Re-using Keys

When the citation is called, a key in the format FirstAuthorsLastName\_Year is automatically created for this citation, so we can now continue to cite this article without remembering the DOI, using the command citep("Abrams\_2012") creates the citation (Abrams et al. 2012) without mistaking it for a new article.

### Displaying the final bibliography

At the end of the document, include a chunk containing the command:

write.bibtex(file="references.bib")

Use the chunk options echo=FALSE and message=FALSE to hide the chunk command and output.

This creates a Bibtex file with the name given. [Pandoc](http://johnmacfarlane.net/pandoc) can then be used to compile the markdown into HTML, MS Word, LaTeX, PDF, or many other formats, each with the desired journal styling. Pandoc is now integrated with [RStudio](http://rstudio.com) through the [rmarkdown](http://rmarkdown.rstudio.com) package. Pandoc appends these references to the end of the markdown document automatically. In this example, we have added a yaml header to our Rmd file which indicates the name of the bib file being used, and the optional link to a [CSL](https://github.com/citation-style-language/styles) stylesheet which formats the output for the ESA journals:

---  
bibliography: "references.bib"  
csl: "ecology.csl"  
output:  
 html\_document  
---

# Example file for RStudio / rmarkdown

This vignette itself is written as an .Rmd file with the yaml header discussed above for working with RStudio's knit buttons or the rmarkdown R package. You can see the [tutorial source file here](https://raw.githubusercontent.com/cboettig/knitcitations/master/vignettes/tutorial.Rmd). Calling rmarkdown::render("tutorial.Rmd") from R on the tutorial compiles the output markdown, with references in the format of the ESA journals.

# References

Abrams, Peter A., Lasse Ruokolainen, Brian J. Shuter, and Kevin S. McCann. 2012. “Harvesting Creates Ecological Traps: Consequences of Invisible Mortality Risks in Predatorprey Metacommunities.” *Ecology* 93 (2). Ecological Society of America: 281–93. [doi:10.1890/11-0011.1](http://doi.org/10.1890/11-0011.1).

Boettiger, C., and A. Hastings. 2013. “No Early Warning Signals for Stochastic Transitions: Insights from Large Deviation Theory.” *Proceedings of the Royal Society B: Biological Sciences* 280 (1766). The Royal Society: 20131372–72. [doi:10.1098/rspb.2013.1372](http://doi.org/10.1098/rspb.2013.1372).

Lord, Phillip. 2012. “Greycite.” *Knowledge Blog*. <http://knowledgeblog.org/greycite>. <http://knowledgeblog.org/greycite>.

Xie, Yihui. 2014. “Knitr: A Comprehensive Tool for Reproducible Research in R.” In *Implementing Reproducible Computational Research*, edited by Victoria Stodden, Friedrich Leisch, and Roger D. Peng. Chapman; Hall/CRC. <http://www.crcpress.com/product/isbn/9781466561595>.

———. 2015a. *Dynamic Documents with R and Knitr*. 2nd ed. Boca Raton, Florida: Chapman; Hall/CRC. <http://yihui.name/knitr/>.

———. 2015b. *Knitr: A General-Purpose Package for Dynamic Report Generation in R*. <http://yihui.name/knitr/>.