Tables using Children and Table Functions

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## Overview

This is an example of a Tables Rmd with separate Rmds for the individual tables. The table code is in the tables folder. Table1 is a simple table. Table\_Counts is a table function that is then called to make tables with the same format but different input data. For this example, I am only going to use kable() for all output types. See Tables.Rmd and Table\_Counts\_flex.Rmd for examples of using the **kableExtra**, **xtable** and **flextable** packages.

## Tips

### General set-up

* Be a modular and simple as you can. You can spend many hours figuring out how to do things in R Markdown (that are simple in Word).
* Don’t make everyone in your team be the R Markdown wizard. You only need one person to build the framework.
* Use simple child Rmds so that other team members work only on simple Rmd flat files.
* Don’t put all your tables or figures in one huge file: Table xyz.Rmd, Table abc.Rmd. Have your dedicated R Markdown wizard figure out the automatic numbering.
* Copy reports built by others who doing something similar to you. TALK within your center or across centers and share work.

### Specific tips

* best not to use chunk labels in the your Rmd children. It’s too easy to get duplicate labels accidentally.
* if you need to reference a file in a folder, let R create the path so that it is compatible across systems:

file.path('images', 'figure1.Rmd')

* I always use the **here** package so that my code doesn’t break if I happen to issue a change workspace directory command.

file.path(here::here(), 'images', 'figure1.Rmd')

* Making tables within for looks is tricky and it is different if you are outputting to Word versus html and also depends on what package that you use. See my Rmd files for examples of how to set it up, but also be prepared for things breaking in the future as package writers change things. This feature is really fluid. Web searches on stackoverflow are key for solving these problems.

### Working with Word

For many of us, Word is part of our team’s workflow. Word is binary so working in that destroys the history that you are capturing with Git. Word is also not compatible with automization, so is inefficient. That said, it is often part of our workflow and the track changes feature is often needed. Rather than trying to fight that I suggest the following:

* Don’t build the whole report in Word. Work on individual text sections and then have R Studio (via pandoc/knitr) assemble the report (text, figures, tables) from the individual parts.
* How to deal with the team needing to review the assembled document (text, figures, tables):
  + Try to modularize. So maybe make individual chapters and have review happen at that level. Then you incorporate the changes into the plain text manually.

#### Making tables look nice in Word

The example in Table\_Counts.Rmd and Table\_Counts\_flex.Rmd shows you tricks to make nice Word tables.

* how to include a page break in your Word doc between tables.
* using format="pandoc" for the table
* using results='asis' andprint()` so you can use for loops.

# A Sample title

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# Acknowledgements

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# Abstract

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# Introduction

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Table 1. This is a basic table.

|  |  |  |  |
| --- | --- | --- | --- |
|  | mpg | cyl | disp |
| Mazda RX4 | 21 | 6 | 160.0 |
| Mazda RX4 Wag | 21 | 6 | 160.0 |
| Datsun 710 | 23 | 4 | 108.0 |
| Hornet 4 Drive | 21 | 6 | 258.0 |
| Hornet Sportabout | 19 | 8 | 360.0 |
| Valiant | 18 | 6 | 225.0 |
| Duster 360 | 14 | 8 | 360.0 |
| Merc 240D | 24 | 4 | 146.7 |
| Merc 230 | 23 | 4 | 140.8 |
| Merc 280 | 19 | 6 | 167.6 |

Table 2. Coweeman River. Yearly counts of Spawners and Fracwild for 2000 to 2014

|  |  |  |
| --- | --- | --- |
| Year | Spawners | Fracwild |
| 2000 | 290 | 1 |
| 2001 | 802 | 1 |
| 2002 | 877 | 1 |
| 2003 | 1106 | 1 |
| 2004 | 1503 | 1 |
| 2005 | 853 | 1 |
| 2006 | 566 | 1 |
| 2007 | 251 | 1 |
| 2008 | 424 | 1 |
| 2009 | 783 | 1 |
| 2010 | 639 | 1 |
| 2011 | 566 | 1 |
| 2012 | 413 | 1 |
| 2013 | 2035 | 1 |
| 2014 | 890 | 1 |

Table 3. Elochoman River. Yearly counts of Spawners and Fracwild for 2000 to 2014

|  |  |  |
| --- | --- | --- |
| Year | Spawners | Fracwild |
| 2000 | 146 | 1 |
| 2001 | 2806 | 1 |
| 2002 | 7893 | 0 |
| 2003 | 7348 | 1 |
| 2004 | 6880 | 0 |
| 2005 | 2699 | 0 |
| 2006 | 324 | 1 |
| 2007 | 168 | 1 |
| 2008 | 1320 | 0 |
| 2009 | 1467 | 0 |
| 2010 | 1318 | 0 |
| 2011 | 1127 | 0 |
| 2012 | 172 | 0 |
| 2013 | 637 | 0 |
| 2014 | 869 | 0 |

The **flextable** package will do a bit nicer tables than **kable**.

| Table 2. Coweeman River. Yearly counts of Spawners and Fracwild for 2000 to 2014 | | |
| --- | --- | --- |
| Year | Spawners | Fracwild |
| 2000 | 290 | 1.00 |
| 2001 | 802 | 0.73 |
| 2002 | 877 | 0.97 |
| 2003 | 1,106 | 0.89 |
| 2004 | 1,503 | 0.91 |
| 2005 | 853 | 0.60 |
| 2006 | 566 | 1.00 |
| 2007 | 251 | 1.00 |
| 2008 | 424 | 0.52 |
| 2009 | 783 | 0.63 |
| 2010 | 639 | 0.70 |
| 2011 | 566 | 0.88 |
| 2012 | 413 | 0.86 |
| 2013 | 2,035 | 0.69 |
| 2014 | 890 | 0.96 |
| \* These spawner counts are from river redd surveys. | | |

| Table 3. Elochoman River. Yearly counts of Spawners and Fracwild for 2000 to 2014 | | |
| --- | --- | --- |
| Year | Spawners | Fracwild |
| 2000 | 146 | 0.62 |
| 2001 | 2,806 | 0.82 |
| 2002 | 7,893 | 0.00 |
| 2003 | 7,348 | 0.65 |
| 2004 | 6,880 | 0.01 |
| 2005 | 2,699 | 0.05 |
| 2006 | 324 | 1.00 |
| 2007 | 168 | 1.00 |
| 2008 | 1,320 | 0.10 |
| 2009 | 1,467 | 0.18 |
| 2010 | 1,318 | 0.12 |
| 2011 | 1,127 | 0.05 |
| 2012 | 172 | 0.26 |
| 2013 | 637 | 0.29 |
| 2014 | 869 | 0.22 |
| \* These spawner counts are from river redd surveys. | | |

# References

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Smith, J. G., and H. K. Weston. 1954. “Nothing Particular in This Year’s History.” *J. Geophys. Res.* 2: 14–15.