

ENV 316: R Markdown Tutorial

Howdy!

We understand that virtual classes may not have been what you had in mind when you signed up for a course titled *Laboratory and Field Methods in Environmental Science*, but it does provide us with a great opportunity to really dive into what separates science from a walk in the woods: writing stuff down! As you've probably already heard, the ENV 316 course will make prodigious use of R and RStudio as we explore concepts of environmental chemistry and ecology. Since you're already using R and RStudio for your data analysis and manipulations, we're encouraging you to submit your work in R Markdown.

The aim of this document is to briefly explain what R Markdown is, why you should use it (hint: it'll make everyone's lives easier), and how to create simple documents for this course.

First off, what is R Markdown?

In a nutshell, R Markdown allows you to analyse your data with R and write your report in the same place (this document written with R Markdown). This has loads of benefits including increased reproducibility, and streamlined thinking. No more flipping back and forth between code and writing to figure out what's going on. For example,

```
# Look at me go mom
x <- 2+2
x
```

```
## [1] 4
```

What we've done here is write a snippet of R code, ran it, and printed the results.

```
library(tidyverse)
```

```
## -- Attaching packages ----- tidyverse
```

```
## v ggplot2 3.3.2      v purrr   0.3.4
## v tibble  3.0.3      v dplyr  1.0.0
## v tidyr   1.1.0      v stringr 1.4.0
## v readr   1.3.1      v forcats 0.5.0
```

```
## -- Conflicts ----- tidyverse
```

```
## x dplyr::filter() masks stats::filter()
## x dplyr::lag()     masks stats::lag()
```

```
airPol <- read_csv("./data/Toronto_60433_2018_Jan2to8.csv",
  na = "-999")
```

```
## Parsed with column specification:
## cols(
##   temperature = col_double(),
##   pollutant = col_character(),
##   concentration = col_double(),
##   date = col_datetime(format = "")
## )
```

```
ggplot(airPol, aes(date, concentration, colour = pollutant)) +  
  geom_line() +  
  theme_classic()
```

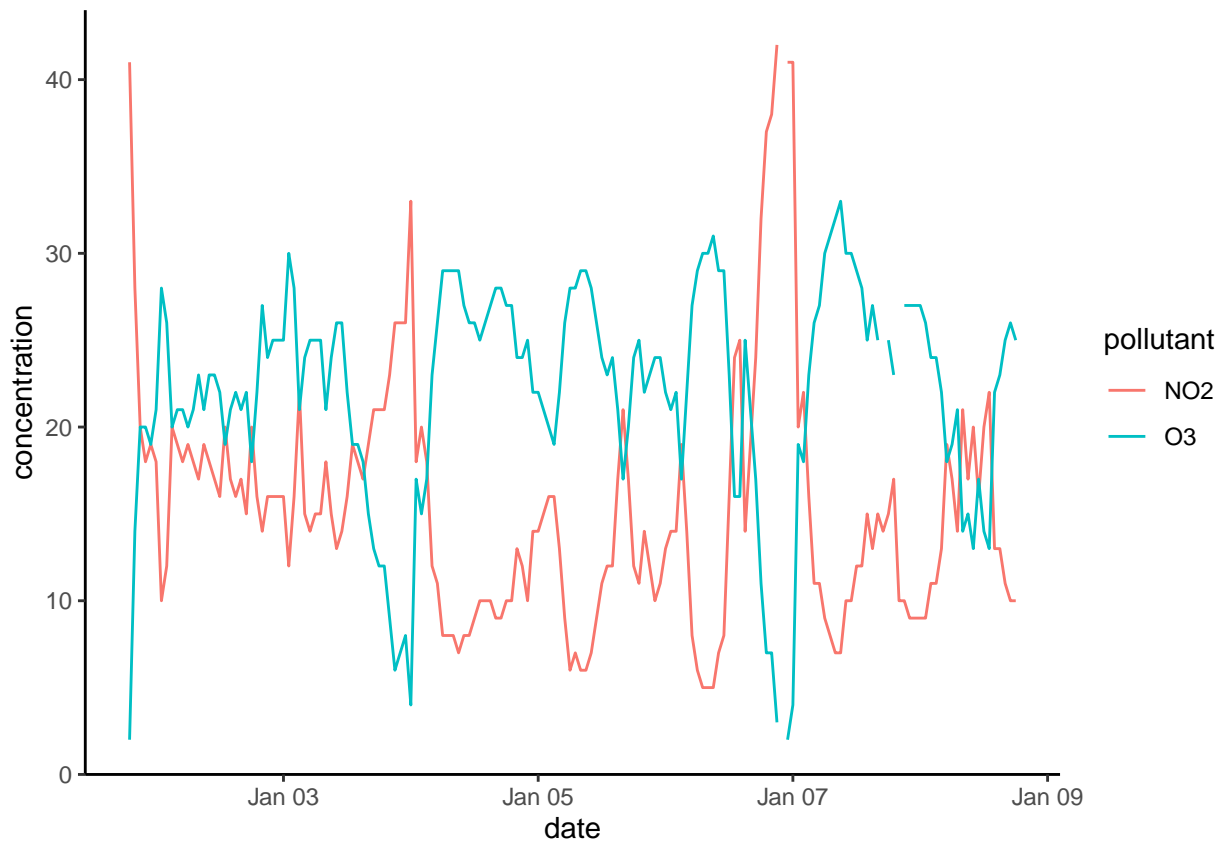


Figure 1: Time series of O3 and NO₂