Collins 2017

```
library(LAGOSNE)
library(dplyr)
library(plsdepot)
library(knitr)

dt <- LAGOSNE::lagos_load_collins_2017()
dt <- dplyr::filter(dt, Region == "Midwestern")

# In the Midwestern U.S. region, dominated by agricultural land use, lake depth
# and the percentage of row crop agriculture were strong predictors of
# stoichiometry because:
#  * **only phosphorus was related to lake depth**
#  * **only nitrogen was related to the percentage of row crop agriculture**

coefs <- round(abs(
  lm(ln_TP ~ ln_Urban_iws + ln_Pasture_iws + ln_RowCrop_iws +
     ln_Forest_iws + NO3deposition_hu12 + X30yrPrecip_hu12 +
     Baseflow_hu12 + ln_maxdepth + ln_ResTime_lawa +
     X30yrTemp_hu12, data = dt)$
    coefficients), 2)

knitr::kable(coefs[order(coefs)])
```

	x
ln_RowCrop_iws	0.00
X30yrPrecip_hu12	0.00
ln_Pasture_iws	0.01
NO3deposition_hu12	0.01
Baseflow_hu12	0.01
ln_Forest_iws	0.02
ln_Urban_iws	0.04
X30yrTemp_hu12	0.06
ln_ResTime_lawa	0.17
ln_maxdepth	0.76
(Intercept)	6.65

```
fit <- plsdepot::plsreg2(dt[,c("ln_Urban_iws", "ln_Pasture_iws",
                          "ln_RowCrop_iws", "ln_Forest_iws",
                          "NO3deposition_hu12", "X30yrPrecip_hu12",
                          "Baseflow_hu12", "ln_maxdepth",
                          "ln_ResTime_lawa", "X30yrTemp_hu12")],
                   dt[,c("ln_TP", "ln_TNTP", "ln_TN")])

knitr::kable(round(fit$std.coefs, 2))
```

	ln_TP	ln_TNTP	ln_TN
ln_Urban_iws	-0.09	0.03	-0.07
ln_Pasture_iws	-0.07	0.01	-0.08
ln_RowCrop_iws	0.03	0.04	0.08

	ln_TP	ln_TNTP	ln_TN
ln_Forest_iws	-0.07	-0.01	-0.10
NO3deposition_hu12	-0.10	0.12	0.01
X30yrPrecip_hu12	-0.09	0.03	-0.09
Baseflow_hu12	-0.14	0.14	-0.01
ln_maxdepth	-0.59	0.42	-0.27
ln_ResTime_lawa	-0.19	0.10	-0.12
X30yrTemp_hu12	0.04	-0.08	-0.04