

# Climate change influence on laying time in flycatchers

## Hypothesis

We want to investigate if the time at which flycatchers lay eggs is correlated with the increasing average temperature. We recorded the difference in lay deposition (difference in month percentage, 0 at 1st of April) and the average temperature for the period of interest for two consecutive years. We want to know if the time of deposition is significantly different between the two years.

## Workflow

1. Load the .csv file:

```
setwd('/home/GIT/BehavioralBiology/climate-change/') #relative to you
df <- read.csv('climate-change-data.csv') #feel free to use your favorite import function
```

2. Understand the data

LayDay	Temperature
-0.12	A
-0.18	A
-0.21	A
...	...
0.15	B
-0.12	B
-0.02	B

*LayDay* is the month percentage at which the clutch is laid (0.00 = 1st of April; *e.g.* 0.10 = 30\*0.10 = 3 days), while *Temperature* is the average day temperature for that day. How *Temperature* is stored in this dataset?

3. Chose a suitable statistical test to investigate if the day of clutch lay is significantly different between temperatures. *Hint: the dataset consists of observation at two different temperature.*

```
t.test(LayDay ~ Temperature, data = df)
```

```
##
##  Welch Two Sample t-test
##
## data:  LayDay by Temperature
## t = -4.6373, df = 66.161, p-value = 1.714e-05
## alternative hypothesis: true difference in means is not equal to 0
## 95 percent confidence interval:
##  -0.3433657 -0.1366899
## sample estimates:
## mean in group A mean in group B
##      -0.1837778      0.0562500
```

4. Interpret the results:

- what can we say about the influence of *Temperature* on *LayDay*?
- what limitations may this study have?
- give some suggestions on how to improve the study.