

## README for data associated with:

### LED lighting threatens adult aquatic insects: impact magnitude and distance thresholds

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#### Data files:

Data provided for this study were collected from June 2017 to September 2017. These data include information on the abundance of Ephemeroptera, Trichoptera and Diptera, sample dates and time, and environmental variables such as air temperature, relative humidity, wind speed, moon illuminance, grass height at the trap, width of the riparian vegetation strip, riparian tree cover, water flow and river water temperature. The study was conducted along the Gürbe river (Bern, CH).

For further details on the explanatory variables, please refer to the Supplementary Information 4.

#### Data collection:

Both studies sampled mayflies (Ephemeroptera), caddisflies (Trichoptera) and true flies (Diptera) repeatedly during mid-to-late summer using modified flight intercept traps positioned adjacent to portable LED lamps. In study A, lit traps were paired with unlit controls. In study B, lit traps were positioned at six distances up to a maximum of 80 m from the stream edge.

1. “*Study A*”: this file contains the data collected for study A that aimed to investigate if operating white LED lamps in riparian areas increases the local abundance of flying adult aquatic insects, and estimate the magnitude of the capture effect of white LED lamps.
  - *Abundance&variables*: in this detailed dataset, the abundance of Ephemeroptera, Trichoptera and Diptera are divided by capture method (pan trap, sticky trap and hand collection). It also include all the explanatory variables (measured in the field or from local monitoring stations)

#### Variables:

“HydroQ” refers to Hydrothermal quotient according to Nowinszky et al.2014 (daily maximum Temperature/ daily minimum Temperature)

- *Ephemeroptera*: this dataset is specific for Ephemeroptera. Abundance refers to the sum of individuals captured with all the 3 methods listed above. The explanatory variables of this dataset were included in the model selection process. For highly correlated variables (Spearman's rank,  $|r| > 0.5$ ), we selected the variable which correlated most strongly with the response variable.
  
  - *Trichoptera*: this dataset is specific for Trichoptera. Abundance refers to the sum of individuals (both small and large) captured with all the 3 methods listed above. The explanatory variables of this dataset were included in the model selection process. For highly correlated variables (Spearman's rank,  $|r| > 0.5$ ), we selected the variable which correlated most strongly with the response variable.
  
  - *Diptera*: this dataset is specific for Diptera. Abundance refers to the sum of individuals captured with all the 3 methods listed above. The explanatory variables of this dataset were included in the model selection process. For highly correlated variables (Spearman's rank,  $|r| > 0.5$ ), we selected the variable which correlated most strongly with the response variable.
2. "Study B": this file contains the data collected for study B that aimed to explore how captures at lamps vary with their distance from the river, and define any distance thresholds. In this detailed dataset, the abundance of Ephemeroptera, Trichoptera and Diptera are divided by capture method (pan trap, sticky trap and hand collection). It also include all the explanatory variables (measured in the field or from local monitoring stations).