

Corrigendum

In our original paper, Demars, B. O. L., J. Thompson, and J. R. Manson. 2015. Stream metabolism and the open diel oxygen method: Principles, practice, and perspectives. *Limnol. Oceanogr.: Methods* 13:356–374.

The caption of Fig. 1 reads ... increasing time lag with decreasing t , as previously reported ...

The correct sentence is ... increasing time lag with decreasing k , as previously reported ...

The fraction α in the last row of Table 1 reads: 0.62 (0.02–5.95)

The correct fraction α is 0.85 (0.51–1.15)

In the supplementary information (FWB_2011_Hengill_site2_15-05-2013.xls) the oxygen exchange coefficient k_2 (min^{-1}) was calculated from mean travel time (τ in min), propane gas concentration (G) and discharge (Q) at the top and bottom stations of a stream reach following Demars et al. (2011):

$$k_2 = 1.39 \frac{1}{\tau} \ln \left[\frac{G_{TOP} Q_{BOT}}{G_{BOT} Q_{TOP}} \right]$$

with R script provided in supplementary information (Metabolism_Demars_Method_hengill.r), also with an error:

```
data$Koxygen <-  
1.39 * (1/data$Travtime) * log((data$Gtop * data$Qtop) / (data$Gbot * data$Qtop))
```

The correct equation is:

$$k_2 = 1.39 \frac{1}{\tau} \ln \left[\frac{G_{TOP} Q_{TOP}}{G_{BOT} Q_{BOT}} \right]$$

with corrected R script:

```
data$Koxygen <-  
1.39 * (1/data$Travtime) * log((data$Gtop * data$Qtop) / (data$Gbot * data$Qbot))
```

Note the use of discharge is simply to correct for lateral inflows. This correction should not be applied when lateral loss of water occurs, i.e., $Q_{BOT} < Q_{TOP}$, because the loss of water over the reach does not affect gas concentration. So when $Q_{BOT} \leq Q_{TOP}$, we simply have:

$$k_2 = 1.39 \frac{1}{\tau} \ln \left[\frac{G_{TOP}}{G_{BOT}} \right]$$

with corresponding R script:

```
data$Koxygen <-  
1.39 * (1/data$Travtime) * log((data$Gtop) / (data$Gbot))
```

The results published by Demars et al. (2011) remain virtually unchanged. The observed activation energies (temperature dependence) of ecosystem respiration (E_r) and gross primary production (E_p) were $E_r = 0.67 \pm 0.23$ eV and $E_p = 0.54 \pm 0.24$ eV, respectively. The corrected values are $E_r = 0.69 \pm 0.19$ eV and $E_p = 0.56 \pm 0.19$ eV, respectively. The normalised (at 15°C) absolute metabolic flux of gross primary production and ecosystem respiration were overestimated by 16% and 18%, respectively.

References

Demars, B. O. L., and others. 2011. Temperature and the metabolic balance of streams. *Freshwater Biol.* **56**: 1106–1121. doi: [10.1111/j.1365-2427.2010.02554.x](https://doi.org/10.1111/j.1365-2427.2010.02554.x)

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