Supplementary material for the paper - Fish intraspecies body size distributions.

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Abstract goes here

S1

If body length, L, is log-normally distributed as:

$$L \sim \mathcal{LN}(\nu, \tau)$$

Then the variance of body length is:

$$Var(L) = e^{\tau^2 - 1} \cdot e^{2\nu + \tau^2}$$

and the mean size is:

$$Mean(L) = e^{\nu + \frac{\tau^2}{2}}$$

then coefficient of variation is:

$$\frac{\sqrt{Var(L)}}{Mean(L)} = \frac{\sqrt{(e^{\tau^2 - 1} \cdot e^{2\nu + \tau^2})}}{e^{\nu + \frac{\tau^2}{2}}} = \sqrt{(e^{\tau^2} - 1)}$$

S2

Estimating the variation in the observed abundance within a size bin as a function of the estimated probability based on either the normal or lognormal distribution.