Oecologia (2001) 128:304
DOI 10.1007/s004420100723

Donald L. Phillips · Jillian W. Gregg

Uncertainty in source partitioning using stable isotopes

Published online: 17 May 2001

Oecologia (2001) 127(2):171–179

During the production process, errors were inadvertently introduced into some of the equations. The correct forms of the equations are shown below.

$$\sigma^2_{f_A} = \left(\frac{\partial f_A}{\partial \bar{\delta}_M}\right)^2 \sigma^2_{\bar{\delta}_M} + \left(\frac{\partial f_A}{\partial \bar{\delta}_A}\right)^2 \alpha^2_{\bar{\delta}_A} + \left(\frac{\partial f_A}{\partial \bar{\delta}_B}\right)^2 \sigma^2_{\bar{\delta}_B} \tag{3}$$

$$f_A = \frac{\left(\bar{\lambda}_C - \bar{\lambda}_B\right)\left(\bar{\delta}_M - \bar{\delta}_B\right) - \left(\bar{\delta}_C - \bar{\delta}_B\right)\left(\bar{\lambda}_M - \bar{\lambda}_B\right)}{\left(\bar{\lambda}_C - \bar{\lambda}_B\right)\left(\bar{\delta}_A - \bar{\delta}_B\right) - \left(\bar{\delta}_C - \bar{\delta}_B\right)\left(\bar{\lambda}_A - \bar{\lambda}_B\right)} \tag{7}$$

$$\sigma^2_{f_A} = \left(\frac{\partial f_A}{\partial \bar{\delta}_M}\right)^2 \sigma^2_{\bar{\delta}_M} + \left(\frac{\partial f_A}{\partial \bar{\delta}_A}\right)^2 \sigma^2_{\bar{\delta}_A} + \left(\frac{\partial f_A}{\partial \bar{\delta}_B}\right)^2 \sigma^2_{\bar{\delta}B} + \left(\frac{\partial f_A}{\partial \bar{\delta}_C}\right)^2 \sigma^2_{\bar{\delta}_C} + \left(\frac{\partial f_A}{\partial \bar{\lambda}_M}\right)^2 \sigma^2_{\bar{\lambda}_M} + \left(\frac{\partial f_A}{\partial \bar{\lambda}_A}\right)^2 \sigma^2_{\bar{\lambda}_M} + \left(\frac{\partial f_A}{\partial \bar{\lambda}_B}\right)^2 \sigma^2_{\bar{\lambda}_B} + \left(\frac{\partial f_A}{\partial \bar{\lambda}_C}\right)^2 \sigma^2_{\bar{\lambda}_C} \tag{8}$$

$$\sigma^2_{f_A} = \frac{1}{D^4}\begin{Bmatrix} \left[D\left(\bar{\lambda}_M - \bar{\lambda}_C\right) - N\left(\bar{\lambda}_A - \bar{\lambda}_C\right)\right]^2 \sigma^2_{\bar{\delta}_B} + \left[N\left(\bar{\lambda}_B - \bar{\lambda}_C\right)\right]^2 \sigma^2_{\bar{\delta}_A} + \\ \left[D\left(\bar{\lambda}_B - \bar{\lambda}_M\right) - N\left(\bar{\lambda}_B - \bar{\lambda}_A\right)\right]^2 \sigma^2_{\bar{\delta}_C} + \left[D\left(\bar{\lambda}_C - \bar{\lambda}_B\right)\right]^2 \sigma^2_{\bar{\delta}_M} + \\ \left[D\left(\bar{\delta}_C - \bar{\delta}_M\right) - N\left(\bar{\delta}_C - \bar{\delta}_A\right)\right]^2 \sigma^2_{\bar{\lambda}_B} + \left[N\left(\bar{\delta}_C - \bar{\delta}_B\right)\right]^2 \sigma^2_{\bar{\lambda}_A} + \\ \left[D\left(\bar{\delta}_M - \bar{\delta}_B\right) - N\left(\bar{\delta}_A - \bar{\delta}_B\right)\right]^2 \sigma^2_{\bar{\lambda}_C} + \left[D\left(\bar{\delta}_B - \bar{\delta}_C\right)\right]^2 \sigma^2_{\bar{\lambda}_M} \end{Bmatrix} \tag{9}$$

$$\sigma^2_{f_A} = \left(\frac{1}{\bar{\delta}_A - \bar{\delta}_B}\right)^2 \sigma^2_{\bar{\delta}_M} + \left(\frac{-f_A}{\bar{\delta}_A - \bar{\delta}_B}\right)^2 \sigma^2_{\bar{\delta}_A} + \left(\frac{f_A - 1}{\bar{\delta}_A - \bar{\delta}_B}\right)^2 \sigma^2_{\bar{\delta}_B} \tag{A4}$$

The online version of the original article can be found at http://dx.doi.org/10.1007/s004420000578

D.L. Phillips (✉) · J.W. Gregg
U.S. Environmental Protection Agency,
National Health and Environmental Effects Research Laboratory,
200 SW 35th Street, Corvallis, OR 97333, USA
e-mail: don@mail.cor.epa.gov