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Erratum: Nitrogen and phosphorus relationships to benthic algal biomass in temperate streams

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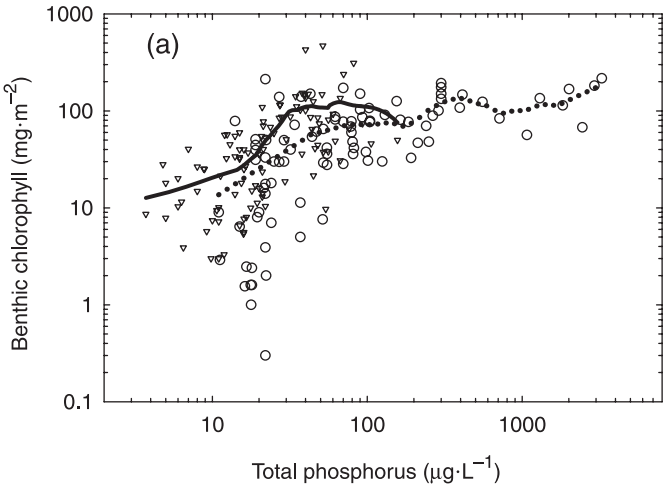
Ref: Can. J. Fish. Aquat. Sci. **59**: 865–874 (2002).

This correction is related to two issues. First, a small number of data points from the literature data set had incorrect values of total phosphorus entered by the first author. Also, upon review of the entire literature data set, several chlorophyll values were found that did not match the criteria required for inclusion in the data set. Correcting these values resulted in modest

Table 1. Significant nonparametric correlations among mean chlorophyll (chl), maximum chlorophyll (max. chl), total nitrogen (TN), total phosphorus (TP), dissolved inorganic nitrogen (DIN), soluble reactive phosphorus (SRP), stream gradient, latitude, water temperature, substrate type (natural or artificial), and maximum discharge for the literature data set (Kandall's τ-b procedure).

Factor 1	Factor 2	*r*	*p*	*N*
Mean chl	Max. chl	0.67	<0.0001	186
	TN	0.42	<0.0001	198
	Gradient	–0.32	0.001	49
	DIN	0.30	<0.0001	225
	TP	0.28	<0.0001	254
	SRP	0.22	<0.0001	192
	Substrate type	0.20	<0.0001	305
	Latitude	–0.19	<0.0001	259
	Temperature	0.18	0.01	91
	TN:TP ratio	–0.12	0.05	141
Max. chl	Mean chl	0.67	<0.0001	186
	TN	0.32	<0.0001	109
	Gradient	–0.29	0.004	46
	DIN	0.21	0.0003	181
	TP	0.20	0.0003	145
	DIN:SRP ratio	0.20	0.005	93
	Latitude	–0.20	0.002	149
	TN:TP ratio	–0.18	0.008	104
	Substrate type	0.16	0.002	170
	Max. discharge	–0.16	0.03	77

Fig. 2. Relationships between total P and mean benthic chlorophyll *a* as a function of the total nitrogen to total phosphorus (TN:TP) mass ratio in stream water for (*a*) the literature data set and (*b*) the United States Geological Survey data set. Note that (*b*) is not reprinted here as it remains unchanged from the original publication. Lowess curve fitting was used to fit points in this plot to illustrate how chlorophyll yield varies with TN:TP. Open circles and dotted lines are for points with TN:TP less than 15 by mass, solid triangles and solid lines represent points with TN:TP greater than 15.



Received 24 February 2006. Accepted 3 March 2006. Published on the NRC Research Press Web site at http://cjfas.nrc.ca on 21 April 2006.
J16498E

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 doi:10.1139/F06-040 © 2006 NRC Canada

changes to Table 1 (literature data set correlations), Table 5 (regression equations, literature values only), and Fig. 2*a* (Fig. 2*b* remains unaffected).

Second, the breakpoints in Table 6 were mistakenly entered, by the first author, as the *y*-axis values (mean chlorophyll and maximum chlorophyll) rather than the *x*-axis values (total N or total P values). The correct breakpoints appear in the revised Table 6.

None of these minor changes alter the basic conclusions of the paper. There is, however, the possibility that the information published in the tables and figures in this paper would be used in the future to help establish nutrient criteria for rivers and streams, and we present here the corrected data. We apologize for any inconvenience these errors have caused for the readers.

Table 5. Regression models for mean and maximum benthic chlorophyll in streams, using the literature and the United States Geological Survey (USGS) data sets as a function of total nitrogen (TN), total phosphorus (TP), dissolved organic nitrogen (DIN), and soluble reactive phosphorus (SRP).

Dependent variable	Intercept	Independent variable 1	Independent variable 2	*N*	Adjusted r^2 or R^2
Literature data set					
log(mean chl)	–0.399	log(TN) 0.718***		198	0.29
log(mean chl)	0.891***	log(TP) 0.369***		254	0.13
log(mean chl)	–0.408	log(TN) 0.593***	log(TP) 0.204**	193	0.38
log(mean chl)	0.676***	log(DIN) 0.367***		225	0.19
log(mean chl)	0.974***	log(SRP) 0.367***		192	0.13
log(mean chl)	0.302	log(DIN) 0.390***	log(SRP) 0.150	134	0.25
log(max. chl)	0.653*	log(TN) 0.546***		109	0.24
log(max. chl)	1.367***	log(TP) 0.354***		145	0.11
log(max. chl)	0.722*	log(TN) 0.349*	log(TP) 0.256*	104	0.32
log(max. chl)	1.385***	log(DIN) 0.263***		181	0.09
log(max. chl)	1.721***	log(SRP) 0.115		97	0.01
USGS data set					
log(mean chl)	–0.804***	log(TN) 0.544***		314	0.12
log(mean chl)	0.374***	log(TP) 0.241***		314	0.05
log(mean chl)	–0.923***	log(TN) 0.632***	log(TP) –0.074	313	0.12
log(mean chl)	–0.130	log(DIN) 0.388***		230	0.16
log(mean chl)	0.729***	log(SRP) 0.103		49	0.01
log(mean chl)	–0.409	log(DIN) 0.576***	log(SRP) –0.091	41	0.18

Note: Mean and maximum stream chlorophyll (mean chl and max. chl, respectively) in $mg \cdot m^{-2}$; TP, TN, DIN, and SRP in $mg \cdot m^{-3}$. Significance levels for regression coefficients: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.

Table 6. Analysis of breakpoints from regression and two-dimensional Kolmogorov–Smirnov (2DKS) in total nitrogen (TN), total phosphorus (TP) and mean and maximum chlorophyll (mean and max. chl, respectively) relationships using the literature data set.

Dependent variable	Independent variable	Breakpoint from regression ($\mu g \cdot L^{-1}$)	Breakpoint from 2DKS
log (mean chl)	log (TP)	43	27
log (mean chl)	log (TN)	537	515
log (max. chl)	log (TP)	62	27
log (max. chl)	log (TN)	602	367

Note: $P < 0.0002$ for all 2DKS determinations.

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