10.1071/MF22120

Marine and Freshwater Research

Supplementary Material

Sources and trophic transfer of trace metals in wild fish from coastal areas in the South China Sea

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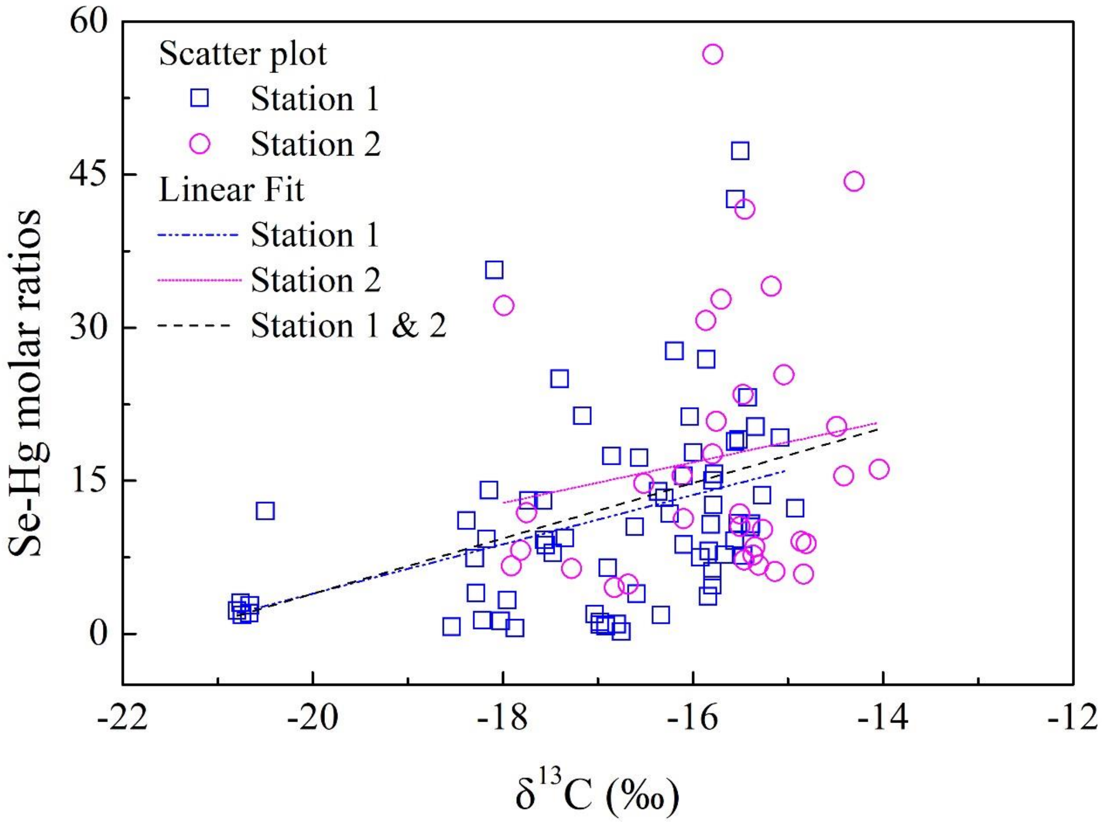

Figure S1. Scatter diagram of $\delta^{13}C$ *v*. Se-Hg molar ratios, and the linear fit of the variables from Station 1, Station 2 and Station 1 & 2.

Table S1. Results (χ^2) of k-independent samples Kruskal–Wallis tests for significant differences between the two sampling sites according to log-transformed values of heavy metal concentrations.

Variable	Grouping by fish species d.f. = 20	Grouping by sampling sites d.f. = 1
$\log_{10}$[As]	**91.84*** **	2.31
$\log_{10}$[Cr]	**66.56*** **	**10.51** **
$\log_{10}$[Cu]	**84.86*** **	**8.93** **
$\log_{10}$[Hg]	**72.60*** **	1.29
$\log_{10}$[Mn]	**85.21*** **	**17.61*** **
$\log_{10}$[Pb]	**80.72*** **	**12.74*** **
$\log_{10}$[Se]	**68.54*** **	**7.12** **
$\log_{10}$[Sn]	**60.54*** **	**20.64*** **
$\log_{10}$[Zn]	**76.91*** **	**12.41*** **
Se-Hg molar ratios	**55.07*** **	**4.94* **

Significance data are in bold, with two-sided *P*-values significant at: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.

Table S2. Values of Pearson's correlation coefficients (r_p) summarised the correlations between every two variables based on the full data set by the study regions.

Sampling sites	Station 1 (*n*=70)			Station 2 (*n*=36)		
	$\delta^{13}C$	$\delta^{15}N$	TL	$\delta^{13}C$	$\delta^{15}N$	TL
log_{10}[As]	-0.1476	-0.0801	-0.0800	**0.4750****	0.3063	0.3067
log_{10}[Cr]	0.1743	0.1214	-0.1217	-0.2999	**-0.6384*****	**-0.6383*****
log_{10}[Cu]	-0.1828	**-0.3744****	**-0.3737****	-0.1958	-0.1920	-0.1905
log_{10}[Hg]	**-0.3427****	0.0084	0.0084	-0.1783	**0.4876****	**0.4875****
log_{10}[Mn]	**0.4127*****	**0.4057*****	**0.4063*****	**0.3952***	0.0249	0.0233
log_{10}[Pb]	**0.3723****	**0.3072****	**0.3077****	**0.5575*****	-0.0542	-0.0559
log_{10}[Se]	**0.2607***	0.2044	0.2043	0.0542	-0.0556	-0.0565
log_{10}[Sn]	0.1172	**0.5016*****	**0.5015*****	0.3008	**0.7075*****	**0.7088*****
log_{10}[Zn]	-0.0479	0.0010	0.0026	-0.0092	-0.0920	-0.0923

Significance data are in bold, with two-sided *P*-values significant at: *, $P < 0.05$; **, $P < 0.01$; ***, $P < 0.001$.

Table S3. Linear regression models and the relative parameters between the values of log-transformed metal concentrations, $\delta^{13}C$, $\delta^{15}N$ and TL

Regression model	R^2_{adj}	Slope	TMS	TDF(<1) & TMF(>1)
Station 1 (n =70)				
log_{10}[Cu] *v.* $\delta^{15}N$	0.1275	-0.0576	**-0.0576**	/
log_{10}[Cu] *v.* TL	0.1275	-0.1961	/	**0.6366**
log_{10}[Pb] *v.* $\delta^{15}N$	0.0811	0.0578	**0.0578**	/
log_{10}[Pb] *v.* TL	0.0811	0.1965	/	**1.5722**
log_{10}[Mn] *v.* $\delta^{15}N$	0.1523	0.1018	**0.1018**	/
log_{10}[Mn] *v.* TL	0.1523	0.3462	/	**2.2192**
log_{10}[Sn] *v.* $\delta^{15}N$	0.2406	0.0892	**0.0892**	/
log_{10}[Sn] *v.* TL	0.2406	0.3033		**2.0105**
Station 2 (n = 36)				
log_{10}[Cr] *v.* $\delta^{15}N$	1.0029	-0.1280	**-0.1280**	/
log_{10}[Cr] *v.* TL	0.3890	-0.4352	/	**0.3671**
log_{10}[Hg] *v.* $\delta^{15}N$	0.2139	0.1072	**0.1072**	/
log_{10}[Hg] *v.* TL	0.2139	0.3645	/	**2.3147**
log_{10}[Sn] *v.* $\delta^{15}N$	0.4849	0.1687	**0.1687**	/
log_{10}[Sn] *v.* TL	0.4849	0.5736	**/**	**3.7463**