Supplementary information

Table S1. Summary statistics of the frond length datasets

Table S2. Parameters and correlation coefficients of the linear regression models describing Fv/Fm and Y(II) as the function of frond length

Table S3. Similarity of linear regression model slopes describing Fv/Fm and Y(II) as a function of frond size under different treatments

Table S1. Summary statistics of the frond length distributions based on the analyzed chlorophyll fluorescence images of the three duckweed species grown in either pure Steinberg's medium (control), 4 mg l^{-1} Cr(VI), or 2.5 mg l^{-1} Ni, respectively. The data summarize results of 3 independent experiments with Cr(VI) and Ni for *S. polyrhiza* and *La. punctata*, and 2 independent experiments per heavy metal for *Le. minor*, respectively.

		S. polyrhiza			*La. punctata*			*Le. minor*		
		control	Cr(VI)	Ni	control	Cr(VI)	Ni	control	Cr(VI)	Ni
number of fronds (n) (young/mature)		131 (59/72)	45 (30/15)	60 (31/29)	132 (55/77)	38 (27/11)	45 (24/21)	107 (46/61)	32 (16/16)	32 (14/18)
length	**Min**	3.5	3.5	3.3	2.6	2.6	2.6	2.6	2.8	2.6
	Max	7.8	7.4	7.6	5.6	5.4	5.6	5.9	5.4	5.2
	Mean	6	5.7	5.8	4.4	4.1	4.2	4.2	4.1	4.3
	Std. error	0.1	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1
	Variance	0.9	1.1	1.6	0.5	0.5	0.6	0.4	0.5	0.7
	Stand. dev	1	1.1	1.2	0.7	0.7	0.7	0.7	0.7	0.8
	Median	6.3	5.6	6.1	4.6	4.2	4.3	4.3	4.3	4.6
	25th prcntil	5.4	5	4.8	3.9	3.7	3.9	3.7	3.6	4
	75th prcntil	6.7	6.6	6.9	4.8	4.8	4.8	4.8	4.8	5
	Mode	6.3	5	7.2	4.8	4.3	4.8	4.8	4.3	5
	Skewness	-0.779	-0.25	-0.45	-0.788	-0.308	-0.605	-0.26	-0.046	-0.934

Table S2. Parameters and correlation coefficients of the ordinary least squares linear regression models describing potential (Fv/Fm) and actual photochemical efficiency (Y(II)) as the function of frond length, in fronds of untreated (control) duckweed cultures, and of cultures treated with either 4 mg l^{-1} Cr(VI), or 2.5 mg l^{-1} Ni, respectively.

			a (slope)	b (intercept)	Pearson's r	p (uncorrelated)
length vs Fv/Fm	*S. polyrhiza*	**control**	0.0091	0.7080	0.312	<0.001
		Cr(VI)	0.0482	0.3574	0.464	0.001
		Ni	-0.0090	0.6012	-0.172	0.189
	La. punctata	**control**	0.0026	0.7795	0.217	0.012
		Cr(VI)	-0.0172	0.7178	-0.351	0.031
		Ni	0.0162	0.6755	0.421	0.004
	Le. minor	**control**	0.0087	0.7296	0.261	0.007
		Cr(VI)	0.0337	0.4396	0.363	0.041
		Ni	0.0368	0.5669	0.591	<0.001
length vs Y(II)	*S. polyrhiza*	**control**	0.0144	0.4238	0.230	0.005
		Cr(VI)	0.0155	0.2501	0.316	0.011
		Ni	-0.0047	0.1907	-0.142	0.325
	La. punctata	**control**	0.0158	0.5606	0.595	<0.001
		Cr(VI)	-0.0132	0.3957	-0.196	0.267
		Ni	0.0391	0.3703	0.552	<0.001
	Le. minor	**control**	0.0167	0.5138	0.324	<0.001
		Cr(VI)	0.0086	0.3036	0.138	0.390
		Ni	0.0575	0.2153	0.700	<0.001

Table S3. F-values (lower triangles) of pairwise comparisons and probabilities (upper triangles) of similar slopes of ordinary least square linear regression models, comparing potential (Fv/Fm, left), and actual photochemical efficiency (Y(II), right) in fronds of untreated (control) duckweed cultures, and of cultures of the same species treated with 4 mg l^{-1} Cr(VI), or 2.5 mg l^{-1} Ni, respectively.

length vs Fv/Fm					length vs Y(II)			
S. polyrhiza	control	Cr(VI)	Ni		*S. polyrhiza*	control	Cr(VI)	Ni
control		<0.0001	0.0024		control		0.6681	0.0068
Cr	18.11		0.0001		Cr	0.1844		0.0122
Ni	9.494	16.05			Ni	7.472	6.494	
La. punctata	control	Cr(VI)	Ni		*La. punctata*	control	Cr(VI)	Ni
control		<0.0001	<0.0001		control		<0.0001	<0.0001
Cr	19.65		0.0004		Cr	16.52		0.0006
Ni	14.81	13.53			Ni	13.53	12.72	
Le. minor	control	Cr(VI)	Ni		*Le. minor*	control	Cr(VI)	Ni
control		0.0160	<0.0001		control		0.3837	<0.0001
Cr	5.948		0.8609		Cr	0.7629		0.0018
Ni	15.15	0.0310			Ni	14.85	10.49	