

Supplementary materials

Table S1. Bioaccumulation results (mean \pm dev. std.) of metals (As, Ba, Cd, Cr, Fe) in *R. philippinarum*

Phase	Month	Sample	As			Ba			Cd			Cr			Fe		
			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
AO	Nov '05	L016V	7.61	\pm	1.16	6.23	\pm	0.77	0.67	\pm	0.08	4.97	\pm	0.96	1099.80	\pm	139.93
		L017V	14.58	\pm	0.43	13.27	\pm	0.58	0.95	\pm	0.13	10.80	\pm	1.61	1529.15	\pm	189.73
		L022V	14.04	\pm	1.92	18.68	\pm	1.96	1.21	\pm	0.14	10.75	\pm	1.28	1365.77	\pm	266.24
		L023V	18.36	\pm	2.35	16.84	\pm	1.82	1.40	\pm	0.19	11.12	\pm	1.26	1722.59	\pm	276.30
	Feb '06	L016V	14.50	\pm	0.96	8.01	\pm	1.37	1.15	\pm	0.24	4.35	\pm	0.60	936.13	\pm	127.74
		L017V	10.13	\pm	0.88	8.75	\pm	1.08	0.67	\pm	0.14	4.57	\pm	0.78	1151.70	\pm	47.76
		L022V	38.30	\pm	5.21	7.23	\pm	1.49	0.92	\pm	0.13	3.72	\pm	0.66	954.13	\pm	148.50
		L023V	25.05	\pm	4.67	5.14	\pm	1.00	0.98	\pm	0.17	3.79	\pm	0.72	847.13	\pm	148.51
	Apr '06	L016V	5.63	\pm	1.09	4.31	\pm	0.95	0.37	\pm	0.05	3.90	\pm	0.80	648.46	\pm	130.67
		L017V	7.99	\pm	1.54	<2			0.45	\pm	0.02	2.96	\pm	0.59	480.31	\pm	84.62
		L022V	10.74	\pm	1.66	<2			0.47	\pm	0.06	2.97	\pm	0.39	334.89	\pm	40.62
		L023V	6.36	\pm	1.27	<2			0.36	\pm	0.07	7.44	\pm	1.34	588.49	\pm	120.48
	Jul '06	L016V	8.40	\pm	2.14	2.61	\pm	0.43	0.48	\pm	0.05	4.03	\pm	0.74	927.14	\pm	172.33
		L017V	<2			<2			0.43	\pm	0.07	2.80	\pm	0.65	623.16	\pm	132.93
		L022V	14.34	\pm	0.56	<2			0.58	\pm	0.06	3.28	\pm	0.46	757.62	\pm	184.64
		L023V	10.20	\pm	0.92	<2			0.56	\pm	0.01	2.23	\pm	0.43	467.89	\pm	74.20
IO	Nov '06	L016V	27.04	\pm	2.44	2.29	\pm	0.16	0.56	\pm	0.06	3.58	\pm	0.41	897.44	\pm	51.59
		L017V	23.58	\pm	2.97	5.57	\pm	0.57	0.44	\pm	0.06	6.38	\pm	0.70	1562.49	\pm	172.45
		L022V	19.35	\pm	0.86	4.23	\pm	0.45	0.59	\pm	0.06	5.59	\pm	0.64	1509.42	\pm	157.52
		L023V	28.55	\pm	2.83	2.91	\pm	0.27	0.64	\pm	0.07	3.06	\pm	0.21	963.74	\pm	119.92
	Feb '07	L016V	17.22	\pm	1.59	7.58	\pm	0.59	0.97	\pm	0.09	6.36	\pm	0.71	1748.92	\pm	226.59
		L017V	22.94	\pm	1.63	5.52	\pm	0.64	1.08	\pm	0.08	5.19	\pm	0.54	1357.47	\pm	144.82
		L022V	16.85	\pm	1.16	4.90	\pm	0.22	1.07	\pm	0.13	6.34	\pm	0.60	1515.35	\pm	163.23
		L023V	13.92	\pm	1.31	2.02	\pm	0.18	0.82	\pm	0.07	5.14	\pm	0.29	1506.79	\pm	151.17
	Jun '08	L016V	16.67	\pm	3.23	4.74	\pm	1.55	0.03	\pm	0.01	3.52	\pm	0.54	685.49	\pm	153.30
		L017V	8.38	\pm	8.72	4.92	\pm	0.79	0.03	\pm	0.01	4.55	\pm	0.62	978.10	\pm	154.34
		L022V	21.05	\pm	0.43	3.32	\pm	0.21	0.04	\pm	0.01	5.03	\pm	0.34	1025.91	\pm	76.70
		L023V	15.22	\pm	2.37	4.76	\pm	0.27	0.03	\pm	0.01	4.00	\pm	0.27	966.90	\pm	34.47
	Nov '08	L016V	5.55	\pm	0.30	4.53	\pm	0.44	0.34	\pm	0.04	4.02	\pm	0.62	794.52	\pm	90.60
		L017V	5.04	\pm	0.37	3.97	\pm	0.38	0.32	\pm	0.03	1.50	\pm	0.15	531.91	\pm	55.48
		L022V	5.63	\pm	0.24	6.43	\pm	0.75	0.48	\pm	0.05	3.80	\pm	0.43	892.69	\pm	92.49
		L023V	5.12	\pm	0.35	5.49	\pm	0.49	0.34	\pm	0.04	2.84	\pm	0.29	716.00	\pm	69.16
PO	Nov '10	L016V	30.70	\pm	1.55	<2			0.85	\pm	0.10	<1			784.82	\pm	82.03
		L017V	21.02	\pm	0.80	<2			0.67	\pm	0.07	5.96	\pm	0.65	1058.65	\pm	120.87
		L022V	30.02	\pm	3.15	7.22	\pm	0.97	0.69	\pm	0.06	<1			1108.11	\pm	127.68
		L023V	29.19	\pm	1.42	5.14	\pm	0.12	0.57	\pm	0.06	<1			703.80	\pm	81.49
	Jun '11	L016V	25.12	\pm	3.17	<2			0.65	\pm	0.00	4.23	\pm	0.80	1157.52	\pm	218.05
		L017V	21.52	\pm	2.09	<2			0.57	\pm	0.12	<1			764.94	\pm	98.04
		L022V	20.77	\pm	2.14	<2			0.50	\pm	0.05	<1			686.10	\pm	32.08

Nov '11	L023V	22.74	±	2.28		<2		0.50	±	0.10		<1		366.97	±	58.10
	L016V	54.40	±	9.55	8.03	±	0.85	0.36	±	0.05	13.87	±	1.78	1154.41	±	236.64
	L017V	23.93	±	1.39	5.99	±	0.51	0.60	±	0.04	10.04	±	0.30	1169.87	±	225.30
Jun '12	L022V	39.38	±	2.06	10.72	±	1.32	0.57	±	0.08	11.71	±	0.92	1299.89	±	253.31
	L023V	22.50	±	2.36	13.02	±	2.86	0.13	±	0.02	11.89	±	1.57	1382.17	±	46.32
	L016V	6.49	±	1.87	4.62	±	0.33	0.66	±	0.08	4.12	±	0.59	1092.98	±	28.60
Nov '12	L017V	10.48	±	0.77	3.93	±	0.61	0.48	±	0.05	7.66	±	2.95	1001.59	±	107.19
	L022V	13.96	±	2.27		<2		0.36	±	0.04		<1		143.46	±	40.35
	L023V	15.40	±	2.14		<2		0.49	±	0.14		<1		212.42	±	56.08
May '13	L016V	36.48	±	15.20	3.03	±	0.56	0.92	±	0.14		<1		422.28	±	104.89
	L017V	44.08	±	2.27	2.75	±	0.14	1.02	±	0.19		<1		648.32	±	36.99
	L022V	48.42	±	10.64		<2		0.98	±	0.26		<1		383.83	±	90.21
Nov '13	L023V	31.18	±	1.95		<2		0.81	±	0.33		<1		250.44	±	48.63
	L016V	15.71	±	0.91	2.41	±	0.23	0.51	±	0.05	2.66	±	0.34	464.33	±	42.12
	L017V	15.21	±	2.08	2.40	±	0.26	0.66	±	0.11	2.06	±	0.12	519.32	±	60.47
Jun '14	L022V	13.01	±	1.68		<2		0.44	±	0.04		<1		259.21	±	282.73
	L023V	10.25	±	0.90		<2		0.38	±	0.05		<1		90.50	±	11.39
	L016V	17.23	±	3.23	9.14	±	1.73	0.58	±	0.02	5.89	±	1.13	1209.40	±	116.79
Oct '14	L017V	22.07	±	0.62	7.66	±	0.68	0.74	±	0.06	15.73	±	5.06	1984.98	±	148.69
	L022V	15.43	±	0.85	8.07	±	2.62	0.44	±	0.10	8.10	±	0.79	1276.61	±	243.71
	L023V	17.97	±	1.65	6.74	±	1.01	0.39	±	0.03	7.63	±	1.09	1501.68	±	198.78
Jun '15	L016V	17.34	±	1.13	0.96	±	0.26	0.57	±	0.03	0.59	±	0.08	101.40	±	11.45
	L017V	21.04	±	2.43	0.70	±	0.22	0.49	±	0.03	0.37	±	0.02	83.58	±	4.30
	L022V	15.46	±	1.68	0.92	±	0.05	0.67	±	0.11	0.59	±	0.13	114.91	±	3.40
Oct '14	L023V	1.51	±	0.12	0.85	±	0.09	0.49	±	0.02	0.58	±	0.15	102.95	±	7.73
	L016V	27.59	±	0.40	2.69	±	0.30	0.61	±	0.04	4.56	±	0.64	782.85	±	24.25
	L017V	22.23	±	1.32	2.74	±	0.05	0.49	±	0.01	3.06	±	0.28	625.72	±	19.42
Jun '15	L022V	26.03	±	2.80	3.59	±	0.62	0.62	±	0.00	3.16	±	0.45	508.71	±	13.06
	L023V	24.41	±	2.56	3.49	±	0.24	0.59	±	0.03	3.72	±	0.21	614.26	±	69.74
	L016V	9.51	±	0.56	3.77	±	0.35	0.50	±	0.01	1.37	±	0.03	280.86	±	31.00
Jun '15	L017V	16.45	±	1.60	3.10	±	0.34	0.49	±	0.06	2.13	±	0.61	308.11	±	12.35
	L022V	15.04	±	0.87	3.86	±	0.62	0.72	±	0.11	1.79	±	0.28	322.16	±	44.48
	L023V	13.22	±	1.87	3.78	±	0.38	0.73	±	0.11	1.66	±	0.22	292.39	±	25.22

Table S2. Bioaccumulation results (mean \pm dev. std.) of metals (Mn, Hg, Ni, Pb, Cu, Zn) in *R. philippinarum*

Phase	Month	Sample	Mn			Hg			Ni			Pb			Cu			Zn		
			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg			mg/kg		
AO	Nov '05	L016V	29.83	±	2.45	0.15	±	0.012	8.85	±	0.91	1.69	±	0.21	6.18	±	0.70	56.53	±	6.29
		L017V	35.03	±	4.26	0.17	±	0.002	9.10	±	0.21	2.03	±	0.18	10.13	±	0.37	80.13	±	9.85
		L022V	35.46	±	7.05	0.17	±	0.025	11.52	±	2.17	1.14	±	0.11	12.94	±	2.01	83.00	±	6.34
		L023V	52.90	±	7.49	0.21	±	0.025	12.35	±	2.04	1.35	±	0.08	13.23	±	1.95	90.91	±	10.93
	Feb '06	L016V	26.41	±	3.54	0.16	±	0.016	10.92	±	0.93	0.73	±	0.07	10.29	±	0.49	83.66	±	3.22
		L017V	35.92	±	3.15	0.14	±	0.028	9.60	±	0.92	0.90	±	0.17	11.54	±	1.22	81.12	±	8.53
		L022V	31.64	±	7.27	0.24	±	0.046	13.11	±	1.69	<0.05		9.86	±	0.65	78.10	±	1.70	
		L023V	28.04	±	4.31	0.17	±	0.034	10.20	±	1.56	0.68	±	0.12	9.62	±	0.50	76.13	±	3.83
	Apr '06	L016V	24.47	±	4.50	0.11	±	0.017	4.98	±	0.99	0.96	±	0.19	5.63	±	0.73	59.73	±	8.65
		L017V	20.51	±	4.15	0.14	±	0.008	4.54	±	0.46	0.90	±	0.18	5.89	±	0.16	68.48	±	3.19
		L022V	11.48	±	0.96	0.11	±	0.009	5.56	±	0.64	0.70	±	0.02	5.28	±	0.37	63.75	±	6.46
		L023V	19.52	±	3.48	0.10	±	0.001	6.10	±	1.19	0.76	±	0.09	6.12	±	0.08	65.86	±	6.41
	Jul '06	L016V	36.56	±	4.26	0.10	±	0.005	8.09	±	0.61	1.09	±	0.13	7.96	±	0.64	70.62	±	7.98
		L017V	35.63	±	8.12	0.09	±	0.011	6.15	±	0.59	0.92	±	0.21	7.79	±	0.51	73.30	±	4.50
		L022V	26.10	±	4.63	0.16	±	0.037	7.84	±	0.38	0.95	±	0.17	7.91	±	1.19	65.00	±	5.64
		L023V	23.85	±	3.56	0.10	±	0.018	6.48	±	0.79	0.94	±	0.13	8.41	±	0.90	80.61	±	2.75
IO	Nov '06	L016V	23.97	±	0.90	0.12	±	0.016	7.99	±	0.69	16.91	±	1.70	6.82	±	0.67	71.71	±	5.16
		L017V	39.78	±	3.95	0.08	±	0.007	6.46	±	0.53	24.48	±	2.76	7.78	±	0.39	70.90	±	3.92
		L022V	43.97	±	5.00	0.12	±	0.005	10.07	±	0.53	24.07	±	2.07	9.14	±	0.76	79.55	±	3.32
		L023V	29.58	±	2.47	0.16	±	0.013	8.29	±	0.95	23.72	±	1.81	8.81	±	0.74	79.26	±	3.30
	Feb '07	L016V	51.20	±	6.10	0.21	±	0.019	11.43	±	0.60	1.88	±	0.18	11.79	±	1.29	88.74	±	5.64
		L017V	35.25	±	3.78	0.19	±	0.016	8.82	±	0.94	1.90	±	0.20	10.76	±	0.21	87.06	±	4.41
		L022V	37.62	±	4.28	0.22	±	0.027	11.56	±	1.04	2.02	±	0.18	11.89	±	0.81	83.79	±	4.38
		L023V	35.51	±	3.19	0.23	±	0.013	9.09	±	0.92	0.97	±	0.05	8.41	±	0.76	79.10	±	3.72
	Jun '08	L016V	29.16	±	5.00	0.13	±	0.026	11.66	±	1.40	1.73	±	0.31	8.63	±	0.13	97.61	±	14.68
		L017V	33.02	±	3.70	0.13	±	0.009	7.05	±	0.64	2.11	±	0.30	8.05	±	0.21	102.57	±	6.48
		L022V	36.41	±	3.05	0.16	±	0.014	12.64	±	1.07	1.96	±	0.20	9.54	±	0.25	96.65	±	9.02
		L023V	36.17	±	1.10	0.10	±	0.032	8.17	±	0.82	1.23	±	0.53	8.68	±	0.28	90.66	±	16.08
	Nov '08	L016V	21.06	±	1.84	0.13	±	0.012	11.64	±	0.20	1.38	±	0.15	10.52	±	0.44	94.70	±	1.70
		L017V	18.30	±	1.44	0.08	±	0.005	7.34	±	1.01	0.76	±	0.01	9.10	±	0.29	85.57	±	7.58
		L022V	23.87	±	1.32	0.14	±	0.009	11.61	±	0.65	1.07	±	0.08	10.86	±	0.83	98.73	±	7.72
		L023V	21.44	±	2.09	0.08	±	0.003	11.52	±	1.31	0.82	±	0.08	10.19	±	0.37	106.30	±	9.02
PO	Nov '10	L016V	19.91	±	1.48				12.49	±	0.68	7.06	±	0.84	10.08	±	0.60	107.97	±	10.12
		L017V	23.34	±	1.67				8.91	±	0.59	9.49	±	1.11	10.53	±	1.20	92.08	±	8.10
		L022V	31.25	±	5.68				14.91	±	1.08	11.85	±	1.38	14.04	±	1.59	115.03	±	12.87
		L023V	21.87	±	2.57				13.32	±	1.40	10.60	±	0.83	13.34	±	0.72	105.60	±	1.77
	Jun '11	L016V	27.09	±	4.44	0.08	±	0.010	6.88	±	0.58	1.10	±	0.04	10.24	±	0.92	87.28	±	7.82
		L017V	14.60	±	1.91	0.10	±	0.008	6.95	±	0.79	1.29	±	0.29	8.74	±	1.20	92.51	±	8.93
		L022V	15.46	±	3.25	0.11	±	0.015	6.78	±	1.17	0.88	±	0.04	9.63	±	0.56	83.85	±	12.75
		L023V	14.19	±	2.11	0.06	±	0.014	5.97	±	0.70	0.83	±	0.07	10.80	±	0.38	94.70	±	8.52
	Nov '11	L016V	33.58	±	4.38	0.13	±	0.016	3.58	±	0.55	1.24	±	0.20	11.82	±	2.21	115.53	±	5.11

Jun '12	L017V	26.57	± 4.77	0.15	± 0.003	3.09	± 0.55	1.39	± 0.14	12.44	± 1.23	104.36	± 1.24
	L022V	45.74	± 9.55	0.13	± 0.002	5.11	± 0.71	1.49	± 0.26	15.36	± 1.48	97.08	± 11.40
	L023V	50.18	± 2.75	0.11	± 0.008	5.27	± 0.25	1.52	± 0.18	13.93	± 0.14	108.08	± 13.59
	L016V	28.65	± 2.90	0.11	± 0.018	8.23	± 0.43	0.33	± 0.02	10.20	± 0.85	88.72	± 6.13
Nov '12	L017V	21.97	± 6.07	0.16	± 0.047	9.01	± 4.49	0.37	± 0.09	8.84	± 0.78	111.20	± 23.58
	L022V	7.49	± 1.97	0.18	± 0.022	4.94	± 0.44	0.11	± 0.02	9.15	± 0.36	87.48	± 8.68
	L023V	8.82	± 2.94	0.12	± 0.007	5.67	± 0.05	0.03	± 0	8.48	± 0.32	85.30	± 3.36
	L016V	6.92	± 0.28	0.31	± 0.026	9.16	± 2.29	0.37	± 0.03	10.59	± 5.24	82.74	± 1.33
May '13	L017V	3.66	± 0.14	0.25	± 0.017	8.66	± 1.25	0.43	± 0.09	8.11	± 0.89	98.09	± 6.73
	L022V	9.49	± 3.32	0.26	± 0.038	10.81	± 0.42	0.46	± 0.06	11.85	± 1.55	85.13	± 6.75
	L023V	4.92	± 0.62	0.27	± 0.042	10.86	± 1.13	0.36	± 0.11	9.18	± 1.10	87.64	± 9.18
	L016V	12.80	± 1.54	0.15	± 0.013	7.72	± 1.01	0.12	± 0.02	7.06	± 0.75	73.50	± 2.87
Nov '13	L017V	10.74	± 1.00	0.13	± 0.007	6.50	± 0.28	0.29	± 0.02	7.43	± 0.70	85.38	± 3.59
	L022V	4.53	± 0.64	0.13	± 0.014	5.63	± 0.66	0.15	± 0.02	7.83	± 0.34	77.98	± 6.96
	L023V	3.93	± 0.42	0.15	± 0.015	6.01	± 0.52	0.12	± 0.02	7.77	± 0.94	74.89	± 3.27
	L016V	44.25	± 8.13	0.14	± 0.016	12.56	± 4.03	1.09	± 0.21	11.73	± 0.95	96.23	± 5.18
Jun '14	L017V	50.43	± 2.33	0.14	± 0.003	12.45	± 0.78	1.60	± 0.14	12.16	± 0.80	89.31	± 5.15
	L022V	41.42	± 7.34	0.11	± 0.007	9.95	± 0.26	1.15	± 0.10	10.48	± 0.87	89.59	± 2.78
	L023V	44.22	± 4.11	0.11	± 0.004	8.32	± 0.40	1.18	± 0.07	11.48	± 1.08	86.03	± 1.73
	L016V	5.50	± 0.90	0.11	± 0.005	3.01	± 1.16	0.71	± 0.18	1.51	± 0.17	40.96	± 6.60
Oct '14	L017V	5.76	± 0.43	0.13	± 0.011	2.41	± 0.49	0.64	± 0.14	1.56	± 0.02	31.96	± 4.67
	L022V	7.26	± 0.26	0.12	± 0.011	2.36	± 0.27	0.65	± 0.06	1.65	± 0.12	38.96	± 2.58
	L023V	8.19	± 1.52	0.13	± 0.010	2.24	± 0.27	0.65	± 0.07	1.51	± 0.07	33.77	± 2.33
	L016V	20.77	± 1.00			8.37	± 0.15	0.83	± 0.03	10.58	± 0.08	85.86	± 1.55
Jun '15	L017V	16.93	± 0.39			7.62	± 0.22	0.67	± 0.02	10.57	± 0.04	97.83	± 1.11
	L022V	15.48	± 0.07			8.21	± 0.20	0.60	± 0.01	9.89	± 0.01	103.92	± 1.02
	L023V	18.65	± 1.23			8.03	± 0.28	0.77	± 0.02	11.54	± 0.12	104.02	± 1.47
	L016V	16.51	± 2.20			10.08	± 0.49	0.52	± 0.06	10.65	± 0.34	112.49	± 6.98
	L017V	12.07	± 2.84			11.57	± 0.65	0.55	± 0.07	8.94	± 0.73	130.87	± 7.15
	L022V	14.76	± 2.37			10.76	± 1.14	0.62	± 0.07	9.66	± 0.46	136.53	± 16.99
	L023V	13.90	± 1.65			14.59	± 2.02	0.74	± 0.11	10.46	± 0.17	126.82	± 12.31

Table S3. Bioaccumulation results (mean ± dev. std.) of BTs in *R. philippinarum* expressed as ng cation per gram of dry weight and as tin (Sn) per gram of dry weight

Phase	Month	Sample	MBT	DBT	TBT	MBT	DBT	TBT
			ng cat/g	ng cat/g	ng cat/g	ng Sn/g	ng Sn/g	ng Sn/g
AO	Nov '05	L016V	<6	15 ± 0.71	91 ± 2.12	<4	7 ± 0.36	37 ± 0.87
		L017V	<6	24 ± 0.71	154 ± 62.93	<4	12 ± 0.36	63 ± 25.75
		L022V	<6	20 ± 2.83	132 ± 36.06	<4	10 ± 1.44	54 ± 14.76
		L023V	<6	19 ± 3.54	90 ± 15.56	<4	9 ± 1.80	37 ± 6.37
	Feb '06	L016V	91 ± 15.50	35 ± 4.36	284 ± 34.59	61 ± 10.47	18 ± 2.22	116 ± 14.15
		L017V	19 ± 1.53	40 ± 4	343 ± 13.75	13 ± 1.03	20 ± 2.04	140 ± 5.63
		L022V	98 ± 13.61	45 ± 10.26	316 ± 7.77	66 ± 9.19	23 ± 5.23	129 ± 3.18
		L023V	97 ± 9.50	46 ± 2.31	315 ± 6.93	65 ± 6.42	24 ± 1.18	129 ± 2.84
	Apr '06	L016V	<6	14 ± 2.65	93 ± 8.54	<4	7 ± 1.35	38 ± 3.50

		L017V	<6		17 ±	3	113 ±	13.23	<4		9 ±	1.53	46 ±	5.41
		L022V	<6		20 ±	1.15	132 ±	22.81	<4		10 ±	0.59	54 ±	9.33
		L023V	<6		24 ±	5.80	190 ±	37.42	<4		12 ±	2.96	74 ±	15.31
	Jul '06	L016V	30 ±	4.04	26 ±	2.08	75 ±	6.66	20 ±	2.73	13 ±	1.06	31 ±	2.72
		L017V	15 ±	1	38 ±	3.21	100 ±	7.09	10 ±	0.68	20 ±	1.64	41 ±	2.90
		L022V	18 ±	0	37 ±	5.29	94 ±	4.73	12 ±	0.00	19 ±	2.70	39 ±	1.93
		L023V	20 ±	3.06	35 ±	3.79	107 ±	5.51	14 ±	2.06	18 ±	1.93	44 ±	2.25
IO	Nov '06	L016V	<6		19 ±	1.15	123 ±	5.03	<4		10 ±	0.59	50 ±	2.06
		L017V	<6		25 ±	2	210 ±	9.87	<4		13 ±	1.02	86 ±	4.04
		L022V	<6		25 ±	3.51	193 ±	14.01	<4		13 ±	1.79	79 ±	5.73
		L023V	<6		34 ±	3.79	213 ±	17.67	<4		17 ±	1.93	87 ±	7.23
	Feb '07	L016V	<6		33 ±	0.58	276 ±	5.29	<4		17 ±	0.29	113 ±	2.17
		L017V	<6		32 ±	2.52	367 ±	22.01	<4		16 ±	1.28	150 ±	9.01
		L022V	<6		35 ±	2.52	344 ±	16.92	<4		18 ±	1.28	141 ±	6.92
		L023V	<6		34 ±	4.51	358 ±	25.32	<4		17 ±	2.30	147 ±	10.36
	Jun '08	L016V	<6		24 ±	3.06	104 ±	9.54	<4		12 ±	1.56	43 ±	3.90
		L017V	15 ±	1.53	32 ±	1.53	113 ±	8.96	10 ±	1.03	16 ±	0.78	46 ±	3.67
		L022V	15 ±	2.65	32 ±	1.15	101 ±	1.53	10 ±	1.79	16 ±	0.59	41 ±	0.63
		L023V	21 ±	4.73	36 ±	6.43	126 ±	21.57	14 ±	3.19	18 ±	3.28	52 ±	8.83
	Nov '08	L016V	15 ±	2	32 ±	1.15	138 ±	1.15	10 ±	1.35	16 ±	0.59	57 ±	0.47
		L017V	<6		25 ±	1	83 ±	6.93	<4		13 ±	0.51	34 ±	2.84
		L022V	16 ±	2.52	35 ±	3.06	134 ±	13.65	11 ±	1.70	18 ±	1.56	55 ±	5.59
		L023V	<6		20 ±	1.15	74 ±	1.15	<4		10 ±	0.59	30 ±	0.47
PO	Nov '10	L016V	7	0.58	8 ±	3.21	32 ±	4.04	5 ±	0.39	5 ±	1.64	13 ±	1.65
		L017V	<6		8 ±	3.61	37 ±	1	<4		<4		15 ±	0.41
		L022V	14 ±	16.29	9 ±	1.53	38 ±	2.52	14 ±	11.00	5 ±	0.78	16 ±	1.03
		L023V	17 ±	19.86	10 ±	1	38 ±	3.61	17 ±	13.41	5 ±	0.51	16 ±	1.48
	Jun '11	L016V	<6		<8		20 ±	1.15	<4		<4		8 ±	0.47
		L017V	<6		7 ±	4.62	41 ±	4.36	<4		<4		17 ±	1.78
		L022V	9 ±	6.66	<8		37 ±	3.06	8 ±	4.50	<4		15 ±	1.25
		L023V	8 ±	9.24	9 ±	0.58	48 ±	1	13 ±	6.24	5 ±	0.29	20 ±	0.41
	Nov '11	L016V	<6		12 ±	1	33 ±	3.79	5 ±	1.95	6 ±	0.51	14 ±	1.55
		L017V	9 ±	0.58	15 ±	0	54 ±	3.06	6 ±	0.39	8 ±		22 ±	1.25
		L022V	<6		15 ±	1.15	55 ±	5.20	<4		8 ±	0.59	23 ±	2.13
		L023V	<6		13 ±	3.21	51 ±	0.58	4 ±	1.17	7 ±	1.64	21 ±	0.24
	Jun '12	L016V	<6		<8		19 ±	2.52	<4		<4		8 ±	1.03
		L017V	<6		11 ±	1.73	24 ±	3	<4		6 ±	0.88	10 ±	1.23
		L022V	<6		11 ±	2	36 ±	2.08	<4		6 ±	1.02	15 ±	0.85
		L023V	<6		9 ±	0.58	35 ±	6	<4		5 ±	0.29	14 ±	2.46
	Nov '12	L016V	6 ±	2.31	10 ±	0.58	25 ±	2.65	5 ±	1.56	5 ±	0.29	10 ±	1.08
		L017V	8 ±	1.53	15 ±	2.52	40 ±	4.58	5 ±	1.03	8 ±	1.28	16 ±	1.88
		L022V	<6		14 ±	1	36 ±	3.21	<4		7 ±	0.51	15 ±	1.32
		L023V	<6		15 ±	0.58	41 ±	3.21	<4		8 ±	0.29	17 ±	1.32
	May '13	L016V	<6		<8		25 ±	1	<4		<4		10 ±	0.41
		L017V	<6		<8		33 ±	1.73	<4		<4		14 ±	0.71

	L022V	<6	<8	37 ± 2	<4	<4	15 ± 0.82
	L023V	<6	<8	35 ± 3.79	<4	<4	14 ± 1.55
Nov '13	L016V	<6	13 ± 1	17 ± 2.52	<4	7 ± 0.51	7 ± 1.03
	L017V	<6	15 ± 2	24 ± 1.53	<4	8 ± 1.02	10 ± 0.63
	L022V	<6	13 ± 1	21 ± 0.58	<4	7 ± 0.51	9 ± 0.24
	L023V	<6	13 ± 0.58	23 ± 1.73	<4	7 ± 0.29	9 ± 0.71
Jun '14	L016V	<6	<8	14 ± 0.58	<4	<4	6 ± 0.24
	L017V	<6	<8	23 ± 2.08	<4	<4	9 ± 0.85
	L022V	<6	<8	24 ± 1.73	<4	<4	10 ± 0.71
	L023V	<6	<8	32 ± 4.36	<4	<4	13 ± 1.78
Oct '14	L016V	<6	<8	23 ± 1.53	<4	<4	10 ± 0.63
	L017V	<6	<8	29 ± 1.15	<4	<4	12 ± 0.47
	L022V	<6	<8	22 ± 1.73	<4	<4	9 ± 0.71
	L023V	<6	8 ± 4.04	27 ± 2.89	<4	4 ± 2.06	11 ± 1.18
Jun '15	L016V	<6	<8	25 ± 3.79	<4	<4	10 ± 1.55
	L017V	<6	<8	41 ± 4.58	<4	<4	17 ± 1.88
	L022V	<6	<8	35 ± 5.29	<4	<4	14 ± 2.17
	L023V	<6	<8	41 ± 4.04	<4	<4	17 ± 1.65

AO = ante operam, IO = in opera, PO = post operam

Table S4. Results of biomarkers (mean ± dev. std.) analysed in Manila clams (*R. philippinarum*) in Vallona Lagoon.

Phase	Month	Sample	MN		AChE		AOX		CAT		TOSC_ROO		TOSC_HO		MDA	
			frequency		nmol/min/mg		mUnit/ml		µmol/min/mg		UTOSC/ mg prot		UTOSC/ mg prot		nmol/g tissue	
			(‰)		prot.				prot.							
AO	Nov '05	L016V	0.20	± 0.13	20.81	± 13.70	0.83	± 0.21	31.41	± 9.24	420.27	± 69.67	299.62	± 73.42	19.33	± 4.19
		L017V	0.20	± 0.13	12.80	± 5.40	0.81	± 0.27	32.69	± 11.76	324.84	± 28.59	214.66	± 55.38	38.75	± 6.29
		L022V	0.80	± 0.25	21.58	± 8.69	0.97	± 0.25	34.66	± 8.89	372.01	± 80.55	258.60	± 75.11	30.25	± 8.13
		L023V	0.40	± 0.16	11.98	± 4.16	0.66	± 0.26	27.53	± 4.51	354.91	± 50.86	159.78	± 20.56	39.06	± 17.84
	Feb '06	L016V	0.20	± 0.13	15.39	± 3.59	0.69	± 0.38	39.24	± 17.70	368.36	± 53.24	276.25	± 12.64	39.17	± 7.65
		L017V	0		15.58	± 3.80	1.06	± 0.15	45.17	± 6.91	645.33	± 107.69	348.42	± 45.09	32.5	± 24.58
		L022V	0		12.11	± 4.43	0.99	± 0.20	42.04	± 7.82	391.93	± 45.06	382.74	± 41.93	23.17	± 1.44
		L023V	0		11.83	± 6.02	1.40	± 0.28	36.90	± 5.46	696.49	± 117.44	456.74	± 33.76	24.33	± 8.37
	Apr '06	L016V	0.20	± 0.13	11.27	± 1.85	0.98	± 0.06	44.01	± 9.98	534.89	± 74.62	463.87	± 63.00	17	± 5.77
		L017V	0.30	± 0.15	10.05	± 1.12	0.99	± 0.30	36.00	± 9.38	409.16	± 49.16	495.94	± 53.39	18	± 6.56
		L022V	0.10	± 0.10	10.05	± 3.06	1.12	± 0.45	32.82	± 1.55	638.40	± 143.46	323.28	± 58.33	18.67	± 2.36
		L023V	0		10.05	± 1.53	1.24	± 0.25	42.41	± 2.24	656.96	± 79.77	442.79	± 148.72	27.17	± 4.75
	Jul '06	L016V	0.60	± 0.31	10.07	± 0.29	0.88	± 0.07	17.44	± 6.87	640.81	± 47.27	378.31	± 108.74	31.5	± 4.58
		L017V	0		12.71	± 1.61	0.78	± 0.22	31.76	± 5.03	626.97	± 90.43	355.43	± 114.15	29.67	± 3.40
		L022V	0.60	± 0.16	13.44	± 4.91	1.01	± 0.07	24.79	± 3.46	395.55	± 83.77	388.97	± 50.20	35.17	± 10.75
		L023V	0.20	± 0.13	18.11	± 8.35	0.90	± 0.22	23.92	± 2.77	448.62	± 168.67	430.47	± 14.74	28.5	± 9.34
IO	Nov '06	L016V	0.88	± 0.23	9.92	± 0.95	1.17	± 0.06	34.45	± 4.97	397.11	± 60.59	462.64	± 49.28	18.27	± 3.36
		L017V	0.75	± 0.16	19.19	± 2.93	1.22	± 0.05	39.71	± 3.16	329.68	± 48.91	448.94	± 82.14	16.07	± 3.84
		L022V	1.00	± 0.27	17.09	± 1.75	1.10	± 0.05	36.19	± 4.80	554.26	± 76.85	538.92	± 52.25	19.39	± 4.02
		L023V	0.75	± 0.14	11.57	± 3.93	1.06	± 0.34	42.23	± 6.61	391.06	± 61.91	381.06	± 57.55	18.38	± 4.89
	Feb '07	L016V	0.25	± 0.16	13.82	± 2.60	1.25	± 0.04	33.59	± 10.16	465.95	± 57.70	441.19	± 51.59	23.42	± 4.61

		L017V	0.25	± 0.16	17.78	± 3.40	1.39	± 0.10	41.34	± 3.38	385.30	± 30.81	526.36	± 14.94	21.49	± 1.39
		L022V	0.14	± 0.14	20.16	± 5.91	1.28	± 0.09	43.70	± 7.70	470.72	± 65.39	503.65	± 62.61	33.67	± 4.93
		L023V	0.75	± 0.37	17.20	± 4.06	1.39	± 0.17	34.03	± 5.02	356.46	± 45.11	478.56	± 60.05	28.55	± 6.25
	Jun '08	L016V	0.33	± 0.33	12.95	± 0.83	0.93	± 0.16	45.22	± 4.26	442.24	± 54.06	562.10	± 45.31	48.14	± 6.63
		L017V	0.25	± 0.25	17.70	± 3.42	0.93	± 0.05	41.92	± 10.17	434.99	± 105.70	538.84	± 22.62	36.83	± 6.81
		L022V	0.50	± 0.5	12.56	± 1.40	0.84	± 0.08	53.67	± 10.53	405.79	± 94.52	504.43	± 50.83	30.62	± 5.46
		L023V	0		20.72	± 0.98	0.94	± 0.10	65.92	± 6.14	396.64	± 73.78	489.63	± 101.43	36.47	± 3.58
	Nov '08	L016V	0.60	± 0.24	8.91	± 0.68	0.55	± 0.18	27.07	± 4.35	494.20	± 108.83	464.46	± 11.97	36.14	± 2.96
		L017V	1.20	± 0.37	12.87	± 1.20	0.64	± 0.14	25.59	± 5.20	449.04	± 32.66	450.84	± 94.17	49.50	± 7.23
		L022V	0.20	± 0.20	12.22	± 0.59	0.53	± 0.04	30.35	± 10.39	369.89	± 141.77	428.88	± 66.17	34.96	± 2.69
		L023V	0.75	± 0.48	8.80	± 1.40	0.64	± 0.09	33.31	± 10.22	392.92	± 37.02	550.04	± 68.72	51.44	± 15.80
PO	Nov '10	L016V	0.60	± 0.22	5.63	± 1.28	0.30	± 0.15	11.41	± 2.15	325.09	± 44.05	326.75	± 73.07	37	± 5.70
		L017V	0.60	± 0.16	3.53	± 0.62	0.34	± 0.11	11.41	± 2.48	341.23	± 41.09	366.87	± 38.22	35	± 7.91
		L022V	0.80	± 0.33	4.90	± 1.84	0.36	± 0.15	11.66	± 0.88	328.54	± 24.10	388.49	± 32.89	37	± 8.37
		L023V	1.10	± 0.28	5.60	± 2.25	0.36	± 0.11	9.86	± 1.06	340.38	± 11.55	333.42	± 45.83	37	± 8.37
	Jun '11	L016V	0.25	± 0.16	1.45	± 0.29	0.34	± 0.09	17.88	± 5.52	515.82	± 63.33	483.75	± 207.49	37.4	± 8.14
		L017V	0.38	± 0.18	1.67	± 0.42	0.33	± 0.05	15.88	± 5.67	436.52	± 61.74	504.60	± 135.47	35	± 0
		L022V	0.38	± 0.18	1.84	± 0.52	0.36	± 0.06	22.56	± 7.26	508.14	± 49.99	470.23	± 94.74	40	± 3.54
		L023V	0.25	± 0.16	1.61	± 0.48	0.33	± 0.06	21.54	± 3.56	466.30	± 64.34	366.76	± 72.65	34.17	± 2.04
	Nov '11	L016V	0.25	± 0.16	2.78	± 0.87	0.77	± 0.22	18.64	± 3.54	362.99	± 93.35	462.36	± 95.92	41.33	± 24.43
		L017V	0.13	± 0.13	2.18	± 0.37	1.00	± 0.28	17.35	± 3.98	347.57	± 65.29	349.78	± 80.16	33.33	± 16.63
		L022V	0.38	± 0.18	2.72	± 1.08	1.29	± 0.28	14.14	± 2.84	355.42	± 46.05	360.72	± 70.53	70	± 10.49
		L023V	0.50	± 0.19	4.04	± 0.68	1.24	± 0.22	15.39	± 2.78	344.16	± 41.72	371.66	± 63.91	59.17	± 13.93
	Jun '12	L016V	0.25	± 0.16	11.42	± 3.60	1.22	± 0.35	9.73	± 2.10	364.86	± 22.63	309.80	± 21.89	36.5	± 19.59
		L017V	0.25	± 0.16	4.81	± 2.35	1.24	± 0.45	9.24	± 2.18	341.76	± 48.48	306.13	± 31.89	28.33	± 7.53
		L022V	0.25	± 0.16	6.57	± 2.70	1.41	± 0.61	10.73	± 3.14	324.69	± 72.01	328.07	± 30.53	60.71	± 14.56
		L023V	0.13	± 0.13	4.85	± 1.90	1.05	± 0.34	11.40	± 1.74	277.91	± 83.88	318.78	± 24.19	70.71	± 14.56
	Nov '12	L016V	0.20	± 0.13	13.64	± 3.15	0.55	± 0.18	24.94	± 2.88	701.27	± 174.53	591.22	± 163.20	22.86	± 6.36
		L017V	0.40	± 0.16	10.81	± 3.64	0.56	± 0.25	26.61	± 5.63	751.97	± 66.06	633.86	± 79.76	23.57	± 9.00
		L022V	0.60	± 0.22	10.92	± 3.41	0.53	± 0.16	21.99	± 6.04	668.79	± 82.01	508.35	± 62.78	30	± 10.80
		L023V	0.50	± 0.17	8.98	± 2.25	0.51	± 0.20	24.00	± 6.18	679.72	± 111.95	487.18	± 67.55	34.29	± 11.34
	May '13	L016V	0.25	± 0.16	14.01	± 5.48	1.71	± 0.28	90.08	± 16.94	588.32	± 75.89	889.97	± 121.81	58.72	± 10.73
		L017V	0.88	± 0.23	18.04	± 7.70	1.75	± 0.38	80.46	± 13.91	474.00	± 39.87	731.91	± 79.92	55.37	± 11.25
		L022V	0.50	± 0.19	15.13	± 5.76	1.86	± 0.15	77.16	± 11.59	473.23	± 29.22	742.29	± 44.86	58.98	± 14.48
		L023V	0.38	± 0.18	10.51	± 2.35	1.31	± 0.34	79.08	± 12.83	445.95	± 57.54	730.22	± 61.22	47.76	± 9.07
	Nov '13	L016V	0.25	± 0.16	16.28	± 4.57	1.24	± 0.36	61.38	± 19.35	902.69	± 79.51	739.80	± 172.19	24.96	± 7.25
		L017V	0.38	± 0.18	12.44	± 5.18	1.30	± 0.20	57.65	± 16.39	811.06	± 117.59	587.89	± 140.49	28.28	± 5.76
		L022V	0.13	± 0.13	18.30	± 2.08	1.74	± 0.21	55.58	± 14.66	801.57	± 127.03	609.02	± 73.54	30.10	± 7.28
		L023V	0.25	± 0.25	14.77	± 7.84	1.56	± 0.15	69.15	± 15.35	855.41	± 215.41	644.80	± 171.21	23.84	± 4.25
	Jun '14	L016V	0.25	± 0.25	22.05	± 12.94	1.47	± 0.43	40.24	± 17.74	494.40	± 90.73	481.79	± 94.59	63.03	± 14.63
		L017V	0.38	± 0.18	40.38	± 13.68	1.39	± 0.35	30.91	± 11.95	536.27	± 50.01	459.73	± 115.03	47.62	± 11.14
		L022V	0.13	± 0.13	37.21	± 14.83	1.19	± 0.36	36.10	± 13.16	547.19	± 117.88	465.21	± 78.22	61.47	± 13.81
		L023V	0.25	± 0.16	35.98	± 8.34	1.49	± 0.41	35.22	± 4.46	566.31	± 113.37	466.72	± 95.02	65.75	± 17.44
	Oct '14	L016V	0.38	± 0.18	8.99	± 3.28	2.03	± 0.48	41.75	± 6.55	550.64	± 65.43	656.28	± 58.86	20.58	± 3.80
		L017V	0.50	± 0.19	8.51	± 1.99	1.32	± 0.25	40.18	± 6.27	689.24	± 156.67	704.65	± 20.70	18.68	± 8.95

	L022V	0.25	± 0.16	8.31	± 1.92	1.56	± 0.59	38.81	± 11.57	800.17	± 100.21	736.72	± 99.02	19.27	± 4.53
	L023V	0.13	± 0.13	7.34	± 1.81	2.05	± 0.77	44.25	± 6.56	721.37	± 201.92	742.51	± 97.12	22.24	± 4.94
Jun '15	L016V	0.38	± 0.18	11.75	± 2.70	1.66	± 0.42	43.82	± 4.65	775.98	± 122.67	867.61	± 52.71	19.55	± 4.87
	L017V	0.63	± 0.26	11.96	± 4.19	1.25	± 0.24	40.08	± 3.34	626.43	± 83.19	796.67	± 54.95	19.92	± 6.00
	L022V	0.63	± 0.26	9.34	± 2.31	1.52	± 0.20	45.32	± 4.27	730.74	± 171.70	856.51	± 115.20	22.91	± 6.25
	L023V	0.50	± 0.19	7.44	± 2.45	1.13	± 0.33	36.37	± 6.32	530.96	± 186.18	633.40	± 168.44	21.27	± 4.93

AO = ante operam, IO = in opera, PO = post operam

Table S5. Values of R Spearman's correlations resulted significant ($p<0.05$). Positive correlations are in blue, negative ones in red.

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	Ba	As	Cd	Cr	Fe	Mn	Hg	Ni	Pb	Cu	Zn	MBT	DBT	TBT	HMW PAHs	AChE	AOX	CAT	MN	MDA	TOSC_HO	TOSC_ROO	CI
As	n.s.																						
Cd	n.s.	0.40																					
Cr	0.70	n.s.	n.s.																				
Fe	0.72	n.s.	0.24	0.82																			
Mn	0.72	n.s.	n.s.	0.82	n.s.																		
Hg	n.s.	0.35	0.55	n.s.	n.s.	n.s.																	
Ni	0.45	n.s.	0.41	n.s.	n.s.	n.s.	n.s.																
Pb	0.38	0.24	n.s.	0.49	n.s.	n.s.	n.s.	n.s.															
Cu	0.59	0.41	0.34	0.37	0.52	0.44	0.24	0.50	0.31														
Zn	0.33	0.26	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.													
MBT	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.												
DBT	n.s.	n.s.	n.s.	0.41	0.46	0.58	0.28	0.27	0.35	n.s.	n.s.	0.46											
TBT	n.s.	n.s.	n.s.	0.28	0.35	0.40	n.s.	n.s.	n.s.	n.s.	n.s.	0.32	0.82										
HMW_PAH	n.s.	n.s.	n.s.	0.32	0.45	0.45	0.32	0.26	0.49	n.s.	n.s.	n.s.	0.68	0.68									
AChE	n.s.	-0.31	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.28	n.s.	0.24								
AOX	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	-0.48	-0.23	-0.24	-0.44	0.37							
CAT	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	-0.23	n.s.	n.s.	n.s.	0.57	0.58						
MN	n.s.	0.23	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.					
MDA	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	-0.25	n.s.	n.s.	n.s.	n.s.	n.s.	-0.24	n.s.	n.s.	n.s.	-0.27	n.s.				
TOSC_HO	n.s.	n.s.	n.s.	n.s.	-0.27	-0.27	-0.23	n.s.	n.s.	n.s.	n.s.	-0.35	-0.38	-0.38	-0.42	n.s.	n.s.	0.61	n.s.	n.s.			
TOSC_ROO	n.s.	n.s.	n.s.	n.s.	-0.31	n.s.	-0.24	n.s.	-0.34	n.s.	n.s.	n.s.	n.s.	-0.32	-0.28	n.s.	n.s.	0.50	n.s.	-0.36	0.65		
CI	-0.42	-0.52	-0.47	n.s.	-0.44	n.s.	-0.56	-0.42	-0.34	-0.61	-0.34	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	0.26	n.s.	n.s.	n.s.	n.s.	
LT ₅₀	0.25	0.40	n.s.	0.29	0.27	n.s.	0.45	n.s.	n.s.	0.27	n.s.	n.s.	n.s.	n.s.	0.30	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	n.s.	-0.34

n.s. = not significant

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