



Figure S1. Depth distribution of ^{137}Cs concentration and specific surface area at site B, F, and G in 2015 and 2018. Specific surface area values represent all data measured.

Table S1. Water quality of pond water in 2015 and 2018. Single asterisk (*) following the p-value mean $p < 0.05$. p-values were calculated using t-test.

Water quality		2015			2018			p-value
		n	Mean	SD *	n	Mean	SD *	
Water temperature	(°C)	7	18.8	6.2	6	22.4	8.5	0.440
EC	(mS/m)	7	17.4	3.1	6	16.7	2.4	0.668
ORP	(mV)	7	236	43	6	255	37	0.453
pH		7	7.63	0.96	6	8.50	0.89	0.149
RpH		7	8.03	0.78	6	8.60	0.68	0.231
Turbidity	(NTU)	7	19	13	6	61	58	0.119
in vivo chlorophyll	(RFU)	7	1255	564	6	931	924	0.492
Chl. <i>a</i> con.	(µg/L)	7	141	47	6	160	79	0.625
SS con.	(mg/L)	7	23.7	4.9	6	41.5	17.9	0.040*
VSS con.	(mg/L)	7	13.7	2.3	6	24.4	19.4	0.210
NH ₄ -N con.	(mg-N/L)	7	0.018	0.020	6	0.028	0.054	0.675
NO ₂ -N con.	(mg-N/L)	7	0.012	0.011	6	0.006	0.005	0.235
NO ₃ -N con.	(mg-N/L)	7	0.140	0.137	6	0.173	0.183	0.741
PO ₄ -P con.	(mg-P/L)	7	0.002	0.003	6	0.013	0.015	0.104
DSi con.	(mM)	7	0.134	0.090	6	0.114	0.069	0.703
Na ⁺ con.	(mg/L)	7	9.091	2.364	6	9.628	1.828	0.685
K ⁺ con.	(mg/L)	7	2.071	0.208	6	2.244	0.202	0.191
Mg ²⁺ con.	(mg/L)	7	3.085	0.593	6	3.029	0.825	0.898
Ca ²⁺ con.	(mg/L)	7	19.933	3.073	6	19.185	3.352	0.707
Cl ⁻ con.	(mg/L)	7	7.628	1.960	6	9.070	2.094	0.264
NO ₃ ⁻ con.	(mg/L)	7	0.394	0.666	6	0.306	0.685	0.834
SO ₄ ²⁻ con.	(mg/L)	7	16.568	3.194	6	18.425	1.561	0.258
DIC con.	(mg-C/L)	7	12.312	1.692	6	11.416	4.398	0.656
DOC con.	(mg-C/L)	7	2.284	0.484	6	3.295	0.711	0.018*

* Standard deviation

Table S2. Correlations between ^{137}Cs concentration in SS ($C_{\text{Cs-ss}}$), dissolved ^{137}Cs concentration ($C_{\text{Cs-dis}}$), K_d and water quality in pond water in 2015 and 2018. Double asterisks (**) and single asterisk (*) following the correlation coefficient mean $p < 0.01$ and $p < 0.05$, respectively. p-value were calculated using t-test.

Parameter	$C_{\text{Cs-ss}}$		$C_{\text{Cs-dis}}$		K_d	
	2015	2018	2015	2018	2015	2018
Water temperature	0.679	0.928**	0.514	0.651	0.549	-0.609
EC	-0.574	-0.501	-0.266	-0.541	-0.656	0.884*
ORP	-0.465	-0.439	-0.611	0.173	0.044	-0.219
pH	-0.196	-0.142	0.061	0.002	-0.479	0.315
RpH	-0.132	-0.182	0.053	0.013	-0.331	0.311
Turbidity	-0.003	0.275	0.148	0.509	-0.400	-0.439
in vivo chlorophyll	-0.505	-0.819*	-0.212	-0.649	-0.695	0.829*
Chl. <i>a</i> con.	0.097	0.058	0.255	0.289	-0.241	-0.111
SS con.	0.210	0.440	0.324	0.362	-0.372	-0.356
VSS con.	-0.459	0.182	-0.164	0.287	-0.503	-0.248
NH ₄ -N con.	-0.253	0.144	-0.449	0.924**	0.535	-0.551
NO ₂ -N con.	-0.429	-0.090	-0.537	0.021	0.100	-0.342
NO ₃ -N con.	0.312	-0.138	-0.171	-0.350	0.846*	-0.037
PO ₄ -P con.	-0.145	0.378	-0.540	0.091	0.786*	-0.230
DSi con.	0.125	0.253	-0.048	0.692	0.446	-0.500
Na ⁺ con.	-0.642	-0.252	-0.293	-0.203	-0.727	0.774
K ⁺ con.	-0.669	0.476	-0.554	0.492	-0.232	0.146
Mg ²⁺ con.	-0.679	-0.542	-0.268	-0.642	-0.814*	0.877*
Ca ²⁺ con.	-0.455	-0.598	0.028	-0.65	-0.877**	0.767
Cl ⁻ con.	-0.774*	0.058	-0.427	0.028	-0.699	0.604
NO ₃ ⁻ con.	-0.025	0.035	-0.236	0.021	0.198	-0.275
SO ₄ ²⁻ con.	-0.484	-0.013	-0.044	0.360	-0.800*	0.346
DIC con.	-0.509	-0.311	-0.049	0.436	-0.934**	0.039
DOC con.	-0.656	0.125	-0.734	0.371	0.159	0.242