

Table S1. Seasonal hydrochemical and water quality parameters, concentration of phthalates in the Selenga River and its delta for 2021-2023, ($\frac{min-max}{mean}$).

Year	Indicator	Selenga River				Delta of the Selenga River			
		winter	spring	summer	autumn	winter	spring	summer	autumn
2021	T, °C	<u>0.1-0.2</u> 0.2	<u>12.4-12.5</u> 12.5	<u>19.9-21.5</u> 20.6	<u>12.3-14.9</u> 13.3	<u>0.1-0.2</u> 0.1	<u>10.0-12.0</u> 11.6	<u>19.3-23.1</u> 20.3	<u>11.8-13.9</u> 12.7
	Turbidity, NTU	<u>1.68-3.69</u> 2.72	<u>34.7-66.9</u> 46.40	<u>52.7-91.50</u> 69.15	<u>21.00-28.00</u> 23.35	<u>1.70-26.00</u> 6.05	<u>26.50-68.40</u> 54.91	<u>27.60-60.20</u> 43.04	<u>2.76-25.40</u> 16.52
	pH	<u>7.13-7.19</u> 7.16	<u>7.5-7.79</u> 7.63	<u>7.37-7.67</u> 7.57	<u>7.54-7.99</u> 7.69	<u>6.89-7.15</u> 7.06	<u>7.45-7.70</u> 7.57	<u>7.13-7.50</u> 7.31	<u>6.82-7.54</u> 7.14
	DO, mg/L	<u>6.93-7.35</u> 7.10	<u>8.15-11.82</u> 9.44	<u>6.70-8.05</u> 7.07	<u>8.79-9.31</u> 9.02	<u>0.65-8.30</u> 6.29	<u>8.19-8.89</u> 8.70	<u>4.76-7.12</u> 5.96	<u>8.02-12.66</u> 9.14
	Salinity, mg/L	<u>166.3-186.8</u> 176.6	<u>106.5-133.9</u> 123.1	<u>115.3-139.1</u> 124.9	<u>155.9-184.3</u> 171.3	<u>177.8-348.8</u> 206.5	<u>108.1-113.0</u> 111.1	<u>123.-127.3</u> 124.5	<u>168.4-180.9</u> 173.7
	NO ₂ , mg/L	<u>0.012-0.030</u> 0.018	<u>0.009-0.023</u> 0.014	<u>0.012-0.026</u> 0.018	<u>0.010-0.020</u> 0.017	<u>0.010-0.074</u> 0.022	<u>0.011-0.016</u> 0.013	<u>0.008-0.015</u> 0.012	<u>0.004-0.007</u> 0.005
	NO ₃ , mg/L	<u>0.803-1.137</u> 1.024	<u>0.386-0.752</u> 0.491	<u>0.482-0.555</u> 0.520	<u>0.321-0.625</u> 0.515	<u>0.255-1.246</u> 1.073	<u>0.362-0.461</u> 0.420	<u>0.278-0.499</u> 0.421	<u>0.435-0.572</u> 0.487
	NH ₄ , mg/L	<u>0.002-0.069</u> 0.038	<u>0.002-0.055</u> 0.018	<u>0.01-0.012</u> 0.011	<u>0.012-0.024</u> 0.018	<u>0.004-0.026</u> 0.017	<u>0.005-0.036</u> 0.017	<u>0.005-0.012</u> 0.008	<u>nd-0.007</u> 0.004
	PO ₄ , mg/L	<u>0.021-0.118</u> 0.060	<u>0.028-0.122</u> 0.060	<u>0.082-0.119</u> 0.098	<u>0.049-0.064</u> 0.057	<u>0.016-0.056</u> 0.044	<u>0.031-0.148</u> 0.052	<u>0.082-0.141</u> 0.109	<u>0.025-0.06</u> 0.052
	TP, mg/L	<u>0.009-0.030</u> 0.019	<u>0.029-0.050</u> 0.038	<u>0.047-0.054</u> 0.051	<u>0.016-0.027</u> 0.020	<u>0.017-0.036</u> 0.025	<u>0.040-0.108</u> 0.054	<u>0.031-0.053</u> 0.041	<u>0.011-0.024</u> 0.020
	DMP, µg/L	<u>0.155-1.401</u> 0.478	<u>3.330-8.780</u> 5.990	<u>0.210-0.770</u> 0.383	<u>0.034-0.684</u> 0.391	<u>0.085-2.412</u> 0.557	<u>0.477-2.407</u> 1.363	<u>0.204-0.646</u> 0.399	<u>0.903-3.451</u> 2.481
	DEP, µg/L	<u>0.964-8.913</u> 3.358	<u>1.5-13.830</u> 4.880	<u>0.060-0.100</u> 0.088	<u>0.048-0.602</u> 0.380	<u>2.453-6.993</u> 5.107	<u>1.069-4.020</u> 1.902	<u>0.019-0.090</u> 0.059	<u>nd-0.094</u> 0.061
	DBP, µg/L	<u>0.940-2.000</u> 1.435	<u>7.310-9.690</u> 8.250	<u>0.930-1.280</u> 1.128	<u>3.741-21.121</u> 13.976	<u>1.435-4.949</u> 2.542	<u>2.929-7.248</u> 5.419	<u>0.256-1.349</u> 0.803	<u>2.124-6.722</u> 4.602
	BBP, µg/L	<u>0.002-0.418</u> 0.110	<u>1.850-5.890</u> 3.748	nd	<u>0.087-1.570</u> 0.819	<u>0.021-0.095</u> 0.071	<u>nd -1.112</u> 0.347	nd	<u>0.124-0.787</u> 0.421
	DEHP, µg/L	<u>0.134-0.752</u> 0.364	<u>7.220-42.890</u> 17.103	<u>1.430-9.670</u> 3.780	<u>4.265-10.312</u> 6.155	<u>0.047-1.567</u> 0.514	<u>3.185-8.804</u> 4.861	<u>4.972-10.808</u> 6.400	<u>0.847-3.891</u> 1.896
	DnOP, µg/L	nd	<u>0.020-2.930</u> 1.398	nd	<u>nd-0.524</u> 0.245	nd	<u>0.004-1.701</u> 0.984	nd	nd
	Σ6PAE	<u>2.33-12.97</u> 5.75	<u>26.21-61.64</u> 41.37	<u>3.08-11.61</u> 5.38	<u>10.11-33.62</u> 21.96	<u>4.17-15.05</u> 8.79	<u>9.91-22.0</u> 14.88	<u>5.45-12.08</u> 7.66	<u>7.02-14.58</u> 9.75
2022	T, °C	<u>0.1-0.1</u> 0.1	<u>13.9-15.9</u> 15.1	<u>19.0-19.8</u> 19.5	<u>9.5-11.7</u> 10.9	<u>0.1-0.1</u> 0.1	<u>15.8-16.9</u> 16.2	<u>18.8-20.1</u> 19.5	<u>11.1-12.4</u> 11.6
	Turbidity, NTU	<u>1.59-2.73</u> 2.10	<u>17.60-27.10</u> 21.60	<u>58.60-77.00</u> 69.75	<u>10.30-15.00</u> 12.93	<u>1.91-21.00</u> 6.49	<u>8.70-23.30</u> 16.27	<u>3.82-76.70</u> 48.75	<u>2.62-13.60</u> 8.60
	pH	<u>6.72-7.04</u>	<u>7.56-7.96</u>	<u>7.67-7.83</u>	<u>7.4-8.00</u>	<u>6.48-7.03</u>	<u>7.58-8.44</u>	<u>7.51-7.80</u>	<u>7.00-8.00</u>

		6.87	7.84	7.73	7.63	6.66	8.07	7.70	7.43
	DO, mg/L	<u>7.13-7.61</u> 7.31	<u>9.23-10.78</u> 9.89	<u>7.5-14.56</u> 9.35	<u>7.69-8.62</u> 8.10	<u>5.18-7.95</u> 6.86	<u>8.82-11.37</u> 10.41	<u>7.95-9.43</u> 8.50	<u>6.49-9.01</u> 8.31
	Salinity, mg/L	<u>198.5-222.3</u> 209.5	<u>127.9-168.6</u> 149.5	<u>129.8-144.4</u> 137.0	<u>146.1-161.6</u> 153.6	<u>200.0-229.5</u> 209.7	<u>147.1-153.2</u> 150.0	<u>129.0-147.2</u> 134.0	<u>163.3-186.9</u> 170.0
	NO ₂ ⁻ , mg/L	<u>0.020-0.045</u> 0.028	<u>0.011-0.019</u> 0.014	<u>0.008-0.016</u> 0.013	<u>0.009-0.030</u> 0.016	<u>0.015-0.029</u> 0.023	<u>0.003-0.011</u> 0.006	<u>0.013-0.023</u> 0.017	<u>0.004-0.011</u> 0.008
	NO ₃ ⁻ , mg/L	<u>1.047-1.408</u> 1.208	<u>0.284-0.316</u> 0.303	<u>0.419-0.672</u> 0.514	<u>0.120-0.253</u> 0.159	<u>0.870-1.356</u> 1.229	<u>0.112-0.206</u> 0.148	<u>0.171-0.452</u> 0.334	<u>0.070-0.137</u> 0.110
	NH ₄ ⁺ , mg/L	<u>0.001-0.070</u> 0.038	<u>0.004-0.019</u> 0.010	<u>0.006-0.019</u> 0.010	<u>0.001-0.003</u> 0.002	<u>0.017-0.033</u> 0.022	<u>nd-0.015</u> 0.008	<u>0.001-0.007</u> 0.004	<u>0.001-0.009</u> 0.003
	PO ₄ ³⁻ , mg/L	<u>0.036-0.167</u> 0.081	<u>0.007-0.029</u> 0.014	<u>0.055-0.116</u> 0.092	<u>0.007-0.013</u> 0.009	<u>0.013-0.069</u> 0.045	<u>0.008-0.029</u> 0.014	<u>0.056-0.074</u> 0.066	<u>0.005-0.025</u> 0.011
	TP, mg/L	<u>0.014-0.051</u> 0.027	<u>0.041-0.049</u> 0.047	<u>0.068-0.099</u> 0.080	<u>0.024-0.031</u> 0.027	<u>0.010-0.026</u> 0.019	<u>0.036-0.076</u> 0.053	<u>0.046-0.094</u> 0.063	<u>0.022-0.044</u> 0.032
	DMP, µg/L	<u>0.007-0.730</u> 0.285	<u>0.020-0.156</u> 0.182	<u>0.026-0.183</u> 0.072	<u>0.002-0.070</u> 0.027	<u>0.001-0.078</u> 0.021	<u>0.021-0.180</u> 0.070	<u>0.019-0.140</u> 0.068	<u>0.011-0.100</u> 0.056
	DEP, µg/L	<u>nd-0.065</u> 0.030	<u>0.017-1.342</u> 0.417	<u>0.019-0.176</u> 0.064	<u>nd-0.067</u> 0.022	<u>0.001-1.344</u> 0.393	<u>0.026-0.089</u> 0.053	<u>0.017-0.094</u> 0.043	<u>0.008-0.082</u> 0.041
	DBP, µg/L	<u>0.054-0.533</u> 0.282	<u>0.355-11.520</u> 4.988	<u>nd-0.479</u> 0.162	<u>0-0.207</u> 0.061	<u>0.082-0.699</u> 0.384	<u>0.213-1.629</u> 0.675	<u>0.010-0.461</u> 0.191	<u>0.023-0.207</u> 0.119
	BBP, µg/L	<u>nd-0.128</u> 0.061	<u>nd-0.054</u> 0.036	<u>nd-0.050</u> 0.012	nd	<u>0.098-0.176</u> 0.114	<u>nd -0.251</u> 0.166	<u>nd -0.051</u> 0.009	nd
	DEHP, µg/L	<u>0.200-0.802</u> 0.456	<u>0.406-1.121</u> 0.817	<u>0.008-0.308</u> 0.153	<u>0.001-0.026</u> 0.014	<u>0.001-0.305</u> 0.144	<u>0.308-1.566</u> 0.840	<u>0.001-0.724</u> 0.316	<u>0.014-0.045</u> 0.027
	DnOP, µg/L	<u>nd-0.949</u> 0.255	<u>0.073-0.494</u> 0.211	<u>nd-0.040</u> 0.010	nd	<u>nd -0.138</u> 0.041	<u>nd -0.034</u> 0.017	<u>nd-0.007</u> 0.001	nd
	Σ6PAE	<u>0.36-2.12</u> 1.37	<u>0.99-13.57</u> 6.65	<u>0.24-0.85</u> 0.47	<u>0.005-0.37</u> 0.13	<u>0.27-2.52</u> 1.10	<u>0.91-3.59</u> 1.82	<u>0.06-1.06</u> 0.63	<u>0.06-0.42</u> 0.24
2023	T, °C	<u>0.1-0.1</u> 0.1	<u>7.7-12.6</u> 9.1	<u>19.9-20.8</u> 20.4	<u>12.6-13.3</u> 13.0	<u>0.1-0.1</u> 0.1	<u>7.9-9.0</u> 8.5	<u>20.8-21.3</u> 21.0	<u>13.0-15.0</u> 13.8
	Turbidity, NTU	<u>1.33-3.61</u> 2.14	<u>32.00-39.40</u> 35.90	<u>35.30-59.10</u> 44.93	<u>18.30-30.70</u> 26.08	<u>1.98-19.40</u> 5.67	<u>11.70-50.70</u> 34.90	<u>5.67-57</u> 29.81	<u>2.53-41.80</u> 19.62
	pH	<u>7.1-7.5</u> 7.3	<u>7.3-8.3</u> 7.7	<u>7.2-7.7</u> 7.5	<u>7.8-7.9</u> 7.8	<u>7.2-7.7</u> 7.4	<u>7.4-7.6</u> 7.5	<u>7.2-7.6</u> 7.4	<u>7.5-7.8</u> 7.7
	DO, mg/L	<u>6.46-12.76</u> 8.27	<u>8.20-10.75</u> 9.43	<u>6.36-7.13</u> 6.70	<u>9.33-10.41</u> 9.79	<u>3.42-10.21</u> 8.76	<u>10.39-10.98</u> 10.64	<u>4.17-13.99</u> 6.62	<u>5.64-10.59</u> 8.79
	Salinity, mg/L	<u>162.6-203.9</u> 188.7	<u>117.6-143.9</u> 131.4	<u>120.0-150.2</u> 132.9	<u>135.6-170.2</u> 154.9	<u>188.3-1119.1</u> 325.6	<u>125.0-132.6</u> 128.0	<u>126.3-139.7</u> 131.4	<u>145.9-158.7</u> 151.3
	NO ₂ ⁻ , mg/L	<u>0.008-0.023</u> 0.014	<u>0.012-0.021</u> 0.015	<u>0.012-0.023</u> 0.017	<u>0.005-0.012</u> 0.009	<u>0.013-0.022</u> 0.017	<u>0.010-0.012</u> 0.011	<u>0.007-0.015</u> 0.010	<u>0.005-0.008</u> 0.006

	NO₃⁻, mg/L	<u>0.831-1.29</u> 1.034	<u>0.440-0.625</u> 0.552	<u>0.408-0.577</u> 0.497	<u>0.189-0.444</u> 0.272	<u>0.678-1.173</u> 1.001	<u>0.526-0.667</u> 0.592	<u>0.325-0.687</u> 0.428	<u>0.153-0.216</u> 0.175
	NH₄⁺, mg/L	<u>0.004-0.193</u> 0.101	<u>0.003-0.031</u> 0.019	<u>0.020-0.033</u> 0.027	<u>nd-0.015</u> 0.004	<u>0.012-0.039</u> 0.028	<u>0.010-0.044</u> 0.018	<u>0.014-0.059</u> 0.029	<u>0.003-0.027</u> 0.013
	PO₄³⁻, mg/L	<u>0.030-0.198</u> 0.078	<u>0.036-0.045</u> 0.042	<u>0.083-0.094</u> 0.089	<u>0.020-0.067</u> 0.036	<u>0.025-0.06</u> 0.051	<u>0.032-0.047</u> 0.038	<u>0.108-0.144</u> 0.119	<u>0.028-0.067</u> 0.043
	TP, mg/L	<u>0.016-0.079</u> 0.034	<u>0.062-0.08</u> 0.070	<u>0.069-0.086</u> 0.077	<u>0.047-0.060</u> 0.052	<u>0.023-0.032</u> 0.027	<u>0.066-0.089</u> 0.074	<u>0.064-0.097</u> 0.077	<u>0.031-0.042</u> 0.035
	DMP, µg/L	<u>nd-0.380</u> 0.153	<u>nd-0.06</u> 0.015	<u>0.01-0.083</u> 0.034	<u>0.024-0.275</u> 0.110	<u>0.189-0.411</u> 0.308	<u>nd -0.078</u> 0.027	<u>0.011-0.614</u> 0.310	<u>0.071-1.726</u> 1.068
	DEP, µg/L	<u>0.024-0.560</u> 0.214	<u>nd-0.166</u> 0.056	<u>0.076-0.123</u> 0.099	<u>0.010-0.358</u> 0.137	<u>0.153-0.502</u> 0.377	<u>0.003-0.122</u> 0.049	<u>0.077-0.300</u> 0.186	<u>0.002-0.044</u> 0.023
	DBP, µg/L	<u>3.240-4.337</u> 3.734	<u>1.601-7.081</u> 5.252	<u>4.686-7.556</u> 5.977	<u>4.965-21.206</u> 10.690	<u>3.028-4.048</u> 3.457	<u>1.534-5.402</u> 3.710	<u>2.902-9.564</u> 5.527	<u>1.248-4.538</u> 2.645
	BBP, µg/L	<u>nd-1.335</u> 0.471	nd	<u>nd-0.204</u> 0.106	<u>0.049-1.933</u> 0.638	<u>nd -0.760</u> 0.210	nd	<u>0.001-0.162</u> 0.083	<u>0.001-0.764</u> 0.256
	DEHP, µg/L	<u>5.851-23.949</u> 17.450	<u>0.087-0.942</u> 0.364	<u>0.21-12.719</u> 4.467	<u>1.458-7.574</u> 4.296	<u>0.596-1.675</u> 1.095	<u>0.099-2.598</u> 1.003	<u>1.315-6.766</u> 4.328	<u>0.251-2.004</u> 0.988
	DnOP, µg/L	<u>nd-1.014</u> 0.648	nd	nd	<u>nd-0.31</u> 0.091	<u>nd -0.071</u> 0.020	nd	nd	nd
	Σ6PAE	<u>9.47-30.19</u> 22.67	<u>1.71-8.25</u> 5.69	<u>7.91-17.69</u> 10.68	<u>8.35-28.20</u> 15.96	<u>4.77-7.40</u> 5.47	<u>1.64-7.73</u> 4.789	<u>5.93-15.70</u> 10.43	<u>3.06-8.07</u> 4.98

Table S2. HQ and HI values for phthalates, calculated for human consumption of water from the lakes.

PAE	year	Selenga River				delta of Selenga River			
		winter	spring	summer	autumn	winter	spring	summer	autumn
DEP	2021	0.00115	0.00167	0.00003	0.00003	0.00164	0.00066	0.00002	0.00001
	2022	0.00001	0.00014	0.00002	0.00001	0.00015	0.00002	0.00001	0.00001
	2023	0.00007	0.00002	0.00003	0.00005	0.00011	0.00002	0.00006	0.00001
DBP	2021	0.00246	0.01414	0.00193	0.00167	0.00404	0.00982	0.00133	0.00069
	2022	0.00048	0.00855	0.00028	0.00010	0.00068	0.00173	0.00030	0.00019
	2023	0.00640	0.00900	0.01025	0.01833	0.00567	0.00672	0.00905	0.00461
BBP	2021	0.00000	0.00016	0.00000	0.00001	0.00000	0.00002	0.00000	0.00001
	2022	0.00000	0.00000	0.00000	0.00000	0.00000	0.00001	0.00000	0.00000
	2023	0.00002	0.00000	0.00000	0.00003	0.00001	0.00000	0.00000	0.00001
DEHP	2021	0.00006	0.00293	0.00065	0.00037	0.00008	0.00084	0.00112	0.00026
	2022	0.00008	0.00014	0.00003	0.00000	0.00019	0.00017	0.00005	0.00000
	2023	0.00299	0.00006	0.00077	0.00074	0.00031	0.00019	0.00071	0.00017
DnOP	2021	0.00000	0.00479	0.00000	0.00016	0.00000	0.00294	0.00000	0.00000
	2022	0.00087	0.00073	0.00003	0.00000	0.00013	0.00006	0.00000	0.00000
	2023	0.00222	0.00000	0.00000	0.00031	0.00008	0.00000	0.00000	0.00000
HI	2021	0.0037	0.0237	0.0026	0.0022	0.0058	0.0143	0.0025	0.0010
	2022	0.0014	0.0096	0.0004	0.0001	0.0012	0.0020	0.0004	0.0002
	2023	0.0117	0.0091	0.0111	0.0194	0.0062	0.0069	0.0098	0.0048