

## Supplemental information

### Supplemental Table S1

Locations of sampling sites (decimal degrees).

Site <sup>a</sup>	Longitude	Latitude
N01	175.278014	-40.401778
N02	175.151052	-39.768389
N03	175.156416	-39.458531
N04	174.997049	-38.484856
N05	174.051039	-36.147308
N06	173.619256	-35.424183
N07	172.901202	-34.586622
N08	174.449332	-35.983378
N09	175.521017	-37.202081
N10	175.521409	-37.202964
N11	175.428014	-36.883747
N12	175.793123	-37.06545
N13	176.347823	-38.2767
N14	175.367486	-40.355886
S01	173.955483	-41.475458
S02	173.697609	-41.619039
S03	173.746916	-41.364956
S04	173.767856	-41.331947
S05	173.358552	-41.202097
S06	173.26625	-41.302183
S07	173.007011	-41.293728
S08	172.997172	-41.070689
S09	172.980487	-41.185281
S10	172.890202	-41.008106
S11	172.889973	-40.967261
S12	172.892649	-40.9434
S13	172.822838	-41.007878
S14	172.795901	-40.91595
S15	172.807978	-40.864669
S16	172.781474	-40.841103
S17	172.632151	-40.735186
S18	172.617688	-40.726531
S19	172.621914	-40.555056
S20	173.086487	-41.387508
S21	172.813257	-41.388408
S22	172.590705	-41.793847
S23	172.331099	-41.849569
S24	172.251542°	-41.850211
S25	171.899811	-41.912211
S26	171.480067	-41.761297
S27	172.105229	-41.377078
S28	172.13908	-41.253586
S29	172.121008	-41.212906
S30	171.971147	-41.527919
S31	171.971429	-41.537917
S32	171.247772	-42.454789

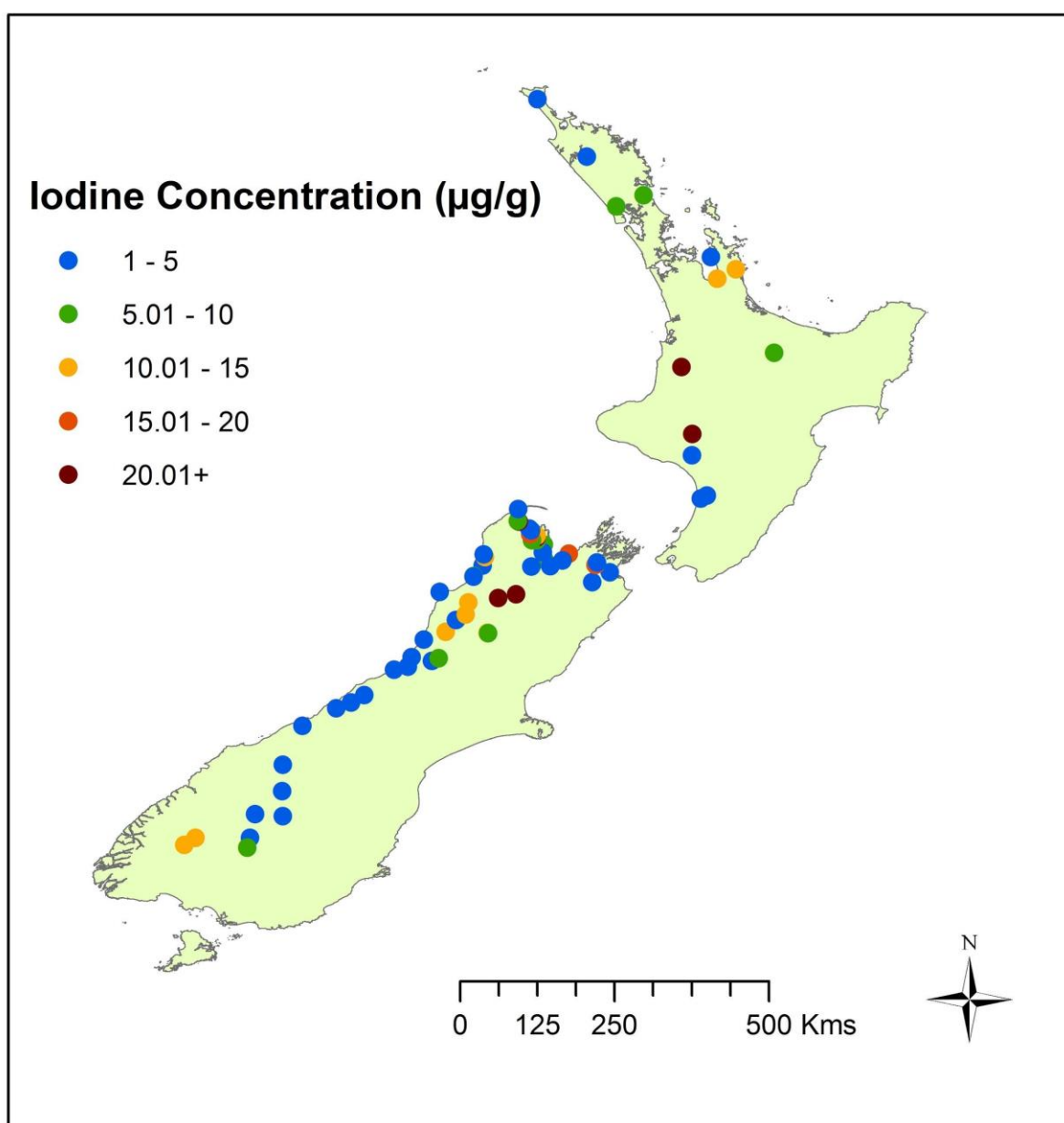
S33	171.565094	-42.338475
S34	171.718451	-42.167772
S35	171.717581	-42.169475
S36	171.857022	-42.089028
S37	172.180214	-42.357139
S38	172.181858	-42.3586
S39	171.366966	-42.761456
S40	171.462468	-42.723272
S41	171.068767	-42.709742
S42	171.015896	-42.845492
S43	170.816213	-42.890886
S44	170.380171	-43.262861
S45	170.186722	-43.367778
S46	169.974106	-43.454708
S47	169.479212	-43.7094
S48	169.196756	-44.274156
S49	169.184305	-44.659719
S50	169.193083	-45.022442
S51	168.79267	-44.993017
S52	168.714865	-45.339167
S53	168.676367	-45.479744
S54	167.759741	-45.441072
S55	167.923252	-45.339744

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<sup>a</sup>N: North Island, S: South Island.

Supplemental Table S2: Comparison of certified reference values and measured iodine concentration.

Reference material	Certified I (mg kg <sup>-1</sup> )	Referenced uncertainty (mg kg <sup>-1</sup> )	Mean measured I (mg kg <sup>-1</sup> )	Standard deviation of measured I (mg kg <sup>-1</sup> )	Mean recovery [%]	Standard deviation of recovery [%]
Hay powder	0.167	0.024	0.17	0.02	104.7	11.7
Skim milk powder	0.81	0.05	0.74	0.08	91.9	11.6
Soil GSS-4	9.4	1.1	10.22	1.19	108.8	12.7
Soil GSS-6	19.4	0.9	22.82	2.32	117.6	12.0
Soil GSS-8	1.7	0.2	1.35	0.11	79.2	6.4
Soil GSS-10	3.2	0.2	3.47	0.38	108.4	12.0
Soil GSS-14	0.9	0.2	0.7	0.06	77.8	6.5



Supplemental Fig. S1. Map of soil iodine concentrations in NZ.