

## Supplementary Information


**Table SI-1 Nestling Northern goshawk blood concentrations ( $\mu\text{g mL}^{-1}$  ww) for 24 metals detected with a RSD <10%. Regions are abbreviated Tromsø (TOS), Trondheim (TRD) and Murcia (MUR).**

Region	Metal	Median	Range	Metal	Median	Range
TOS	B	0.019	0.0002-0.06	Cu	0.23	0.2-0.3
TRD		0.0090	0.0003-0.03		0.24	0.2-0.3
MUR		0.020	0.01-0.03		0.23	0.2-0.3
TOS	Na	2068.6	1806.9-2503.2	Zn	4.9	3.5-14.0
TRD		2094.0	1794.6-2310.4		4.9	4.2-5.8
MUR		2067.6	1820.3-2346.8		5.5	4.5-6.7
TOS	Mg	52.0	36.4-79.0	As	0.012	0.001-0.1
TRD		65.5	48.8-76.5		0.0055	0.002-0.04
MUR		65.1	49.7-87.9		0.0010	0.0001-0.002
TOS	Al	0.028	0.001-1.3	Se	0.40	0.3-0.5
TRD		0.012	0.001-0.4		0.54	0.4-0.8
MUR		0.043	0.007-0.4		0.35	0.3-0.4
TOS	Si	0.82	0.2-11.1	Rb	4.30	1.7-7.1
TRD		0.41	0.02-5.3		3.48	1.4-5.8
MUR		0.73	0.4-1.3		0.90	0.7-1.1
TOS	P	954.0	710.8-1325.7	Sr	0.043	0.02-0.06
TRD		1145.1	846.4-1249.9		0.032	0.02-0.05
MUR		1111.0	907.8-1397.0		0.028	0.02-0.05
TOS	S	1340.9	1015.5-1841.2	Mo	0.014	0.01-0.02
TRD		1571.0	1302.1-1725.7		0.019	0.01-0.03
MUR		1638.2	1356.3-1935.7		0.016	0.01-0.02
TOS	K	1207.7	783.6-1735.1	Cd	0.00029	0.0003-0.0008
TRD		1423.7	1056.8-1606.8		0.00015	0.0002-0.0006
MUR		1382.8	1165.9-1891.3		0.00017	0.00002-0.0004
TOS	Ca	55.5	44.8-65.7	Cs	0.0068	0.003-0.02
TRD		54.8	47.6-64.1		0.0089	0.001-0.09
MUR		51.4	46.3-60.0		0.00038	0.0003-0.0006
TOS	Mn	0.048	0.02-0.08	Ba	0.017	0.007-0.06
TRD		0.045	0.02-0.1		0.028	0.005-0.1
MUR		0.037	0.02-0.05		0.030	0.009-0.08
TOS	Fe	133.8	86.7-177.5	Hg	0.014	0.007-0.02
TRD		122.4	28.0-274.0		0.028	0.02-0.13
MUR		75.7	22.5-117.3		0.012	0.006-0.02
TOS	Ni	0.0023	0.0001-0.02	Pb	0.0044	0.0008-0.02
TRD		0.00095	0.0002-0.003		0.0050	0.001-0.02
MUR		0.0013	0.0001-0.004		0.0046	0.002-0.03

**Table SI-2 Nestling body feather concentrations ( $\mu\text{g g}^{-1}$  dw) for 24 metals with a RSD <10%. Regions are abbreviated Tromsø (TOS), Trondheim (TRD) and Murcia (MUR).**

Region	Metal	Median	Range	Metal	Median	Range
TOS	B	0.24	0.08-0.3	Ni	0.026	0.01-0.08
TRD		0.081	0.006-0.3		0.033	0.02-0.1
MUR		0.032	0.007-0.04		0.049	0.01-0.1
TOS	Na	1024.79	482.2-2653.8	Cu	6.0	4.4-7.5
TRD		1355.4	340.5-3565.4		4.8	3.5-7.1
MUR		2216.1	1838.9-3041.3		5.4	4.5-6.9
TOS	Mg	85.8	50.3-167.8	Zn	68.2	44-91
TRD		105.2	52.4-252.7		81.1	68-113
MUR		170.3	139.7-219.6		88.6	80-111
TOS	Al	1.0	0.4-2.6	As	0.014	0.008-0.08
TRD		1.3	0.7-4.7		0.014	0.004-0.04
MUR		4.1	3.1-23.7		0.012	0.002-0.01
TOS	P	997.2	521.7-1614.2	Se	1.1	0.8-1.3
TRD		796.2	208.3-2284.0		1.3	0.9-1.7
MUR		1684.0	1337.4-1934.0		0.10	0.7-1.1
TOS	S	21239.0	20005.6-22508.1	Rb	4.35	0.9-7.3
TRD		21205.8	18685.7-24376.6		2.31	0.3-9.4
MUR		18892.5	17779.9-20508.1		1.54	0.8-2.1
TOS	K	871.2	388.8-2485.6	Sr	0.20	0.08-0.3
TRD		1100.0	206.8-3798.4		0.18	0.1-0.3
MUR		1973.8	1509.1-2824.2		0.18	0.1-0.5
TOS	Ca	190.0	127.4-238.7	Zr	0.018	0.01-0.03
TRD		226.9	172.8-396.8		0.017	0.009-0.08
MUR		304.6	247.9-344.5		0.017	0.01-0.03
TOS	Ti	0.14	0.07-0.2	Cd	0.0017	0.0002-0.006
TRD		0.25	0.1-1.4		0.0012	0.0003-0.015
MUR		0.60	0.38-3.0		0.0009	0.0001-0.006
TOS	Cr	0.043	0.03-0.2	Cs	0.0096	0.003-0.02
TRD		0.043	0.02-0.1		0.0080	0.0005-0.06
MUR		0.056	0.04-0.1		0.0010	0.0006-0.003
TOS	Mn	0.20	0.1-0.4	Hg	0.16	0.1-0.7
TRD		0.35	0.09-1.0		0.31	0.2-0.9
MUR		0.20	0.2-0.3		0.18	0.09-0.3
TOS	Fe	7.06	0.9-38.2	Pb	0.0093	0.002-0.01
TRD		16.8	3.3-153.9		0.0090	0.005-0.02
MUR		23.5	8.3-127.9		0.014	0.004-0.5

Figure SI-1 - Ultraclave Temperature Profile



### MLS Microwave Report

**Application:** ultraCLAVE

**Report** 17.07.2015 13:53:15 **Operator:**

**Filename:** M:\A\2015\PROJECT NOT FINISHED\Kevin - Biologi Fjær og blod\929-130715-Kevin-pnr-1-38.dpr

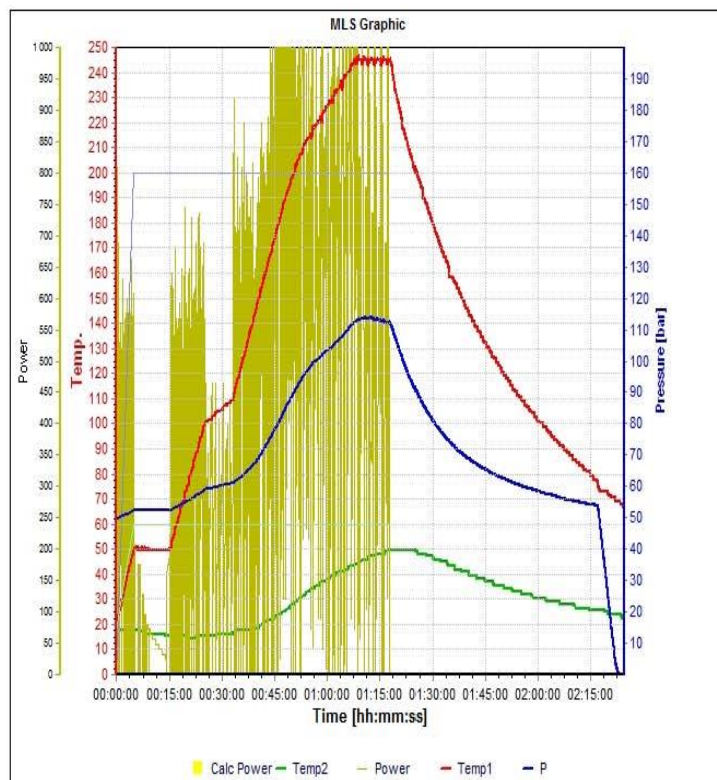


Figure SI-1 shows the power used (yellow), the temperature of the samples (red), the temperature of the machine (green), and the pressure of N gas (blue).

Step	Time [hh:mm:ss]	Temp 1 [°C]	Temp 2 [°C]	Press [bar]	Energy [Watt]
1	00:05:00	50	60	160	1 000
2	00:10:00	50	60	160	1 000
3	00:10:00	100	60	160	1 000
4	00:08:00	110	60	160	1 000
5	00:15:00	190	60	160	1 000

**Remarks:** Ultraclave running number 929-931, dates 13-07-15 to 15-07-15. Procedure: approx. 0.2 ml whole blood were added to 0.5 ml milliQ water + 0.5ml concentrated HNO and digested according to the above temperature profile. Afterwards samples were diluted to 12 ml in PP-vals, pre-rinsed with 0.6M HNO. Feathers were treated

similarly, except digested in 3 ml 50/50 HNO and a final dilution volume of 30 mL.

## Figure SI-2 Urbanization Calculation

Urbanization was calculated in QGIS software program. Building, road and railroad layers for Spain and Norway were accessed from open street map data bases available from GeoFabrik GmbH (<http://download.geofabrik.de/>). Road vector layers were enhanced by a 2m bufferstrip to make 4 meter width polygon vectors. Similarly, railroads were enhanced with a 1m buffer strip. Areas of intersection between the 5 km nest radius and the combined development layer were calculated and summed for each nest. Percentages were calculated from the total area of the 5 km nest radii.

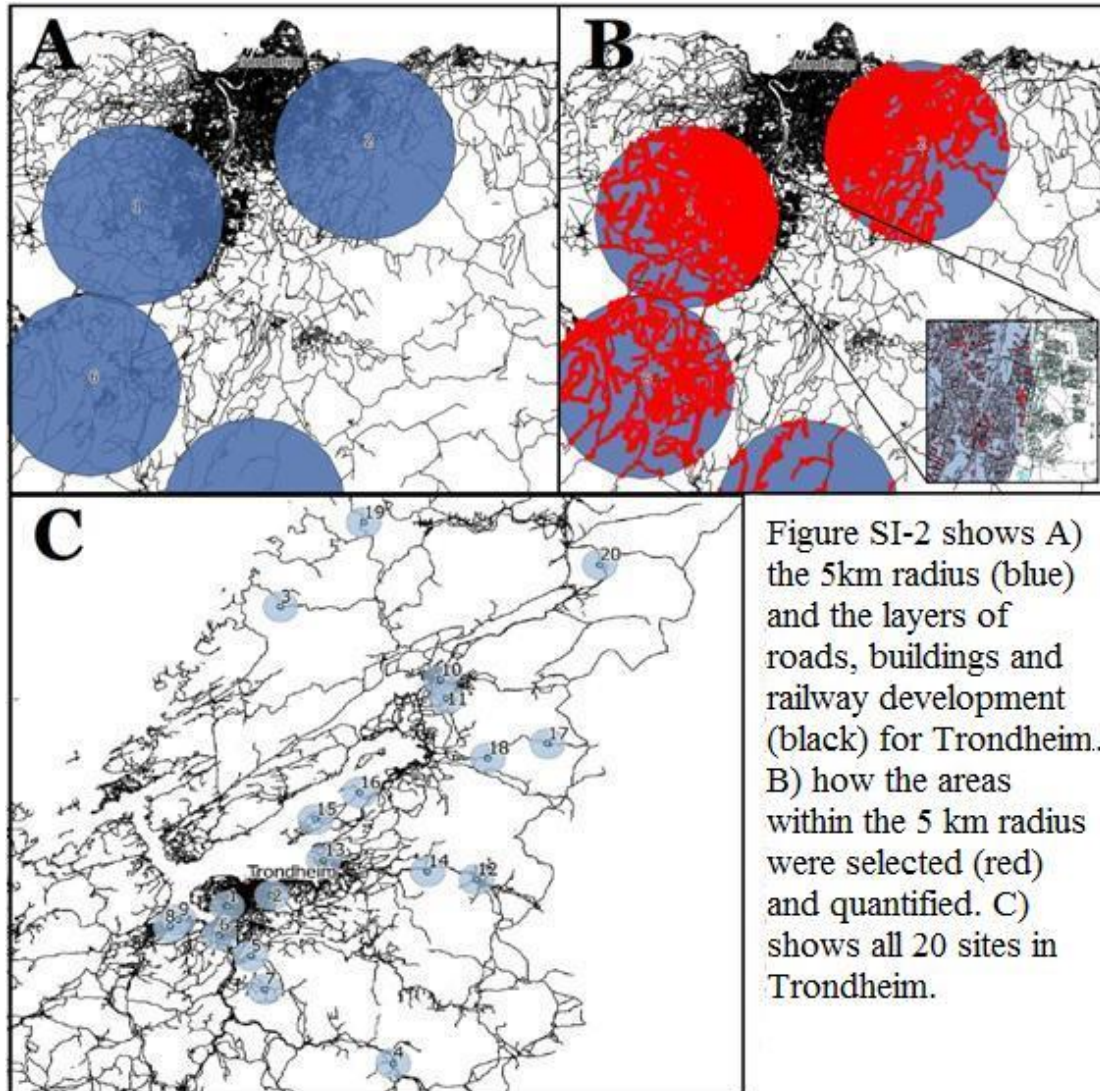


Figure SI-2 shows A) the 5km radius (blue) and the layers of roads, buildings and railway development (black) for Trondheim. B) how the areas within the 5 km radius were selected (red) and quantified. C) shows all 20 sites in Trondheim.