

Keiniänranta ja Keisarinharju – Vehoniemenharju  
Natura-arviointi**Levosen (1997), Rajalan (1995) ja Lahermo ym. (1977) tutkimuksissa esitettyjen keski- ja pohjoissuomalaisen lähteiden veden laatu huomioiden kallioperä ja lähdeyttyppi sekä kasvillisuus.**

	Levonen 1997, Keski- Suomi, luonnontilai set lähteet	Rajala 1995, Keski- Suomi, moreeni lähde, graniitti	Rajala 1995 Keski- Suomi, moreeni- lähde, muut kivilajit	Rajala 1995 Keski- Suomi, harjulähde, hapan syväkivi	Lahermo 1977, Pohjois- Suomi, eutrofinen suolähde kvartsiitti ja vihreäkivi	Lahermo 1977, Pohjois- Suomi, eu- mesotrofinen suolähde kvartsiitti ja vihreäkivi
Sähkönjohtavuus mS/m		4,5	7,4	4,1	10,0	7,0
Alkaliniteetti mmol/l	0,19	0,17	0,32	0,19	1,00	0,54
pH	6,2	6,2	6,1	6,3	7,9	7,2
Nitraattityppi, NO <sub>3</sub> µg/l		940	7120	1360		
Nitriittityppi, NO <sub>2</sub> µg/l		1	0	1		
Ammoniumtyppi, NH <sub>4</sub> µg/l		2	1	3		
Kokonaisfosfori µg/l	6,0	11,0		8,0		
Mangaani µg/l	3,0	6,0	8,0	6,0		
Magnesium mg/l		1,0		0,9	5,9	1,8
Kalsium mg/l		5,1		3,5	12,6	11,4

**Table 1.** Means and standard deviations (in parentheses) of water chemistry for representative groups of samples in Härkösuu (HS) and Joutensuu (JS). Abbreviations: FmoRF = forested moderately rich fen, OmoRF = open moderately rich fen, MoPF = moderately poor fen, ExPF = extremely poor fen, PCA 2 group = samples with extreme scores in the second axis of PCA of water chemistry, Obog = open bog. The letters below the mean values indicate significant differences between sites in Tukey's test ( $p < 0.05$ ).

Lähde: Tahvanainen ym. (2002)

Variable	HS FmoRF (a)	HS OmoRF (b)	HS MoPF (c)	HS ExPF (d)	HS PCA2 group (e)	JS ExPF (f)	JS Obog (g)
pH	6.07 (0.43) b,c,d,e,f,g	5.43 (0.16) a,c,d,e,f,g	4.75 (0.44) a,b,d,e,g	4.26 (0.08) a,b,c	4.20 (0.18) a,b,c	4.37 (0.11) a,b,g	3.97 (0.11) a,b,c,f
Alkalinity (µeq l <sup>-1</sup> )	295 (133) c,d,e,f,g	198 (73) c,d,e,f,g	19 (29) a,b	0 a,b	0 a,b	0 a,b	0 a,b
DOC (mg l <sup>-1</sup> )	12.4 (6.4) c,d,e,f,g	24.9 (5.1) d,e,g	36.8 (12.7) a,e	45.3 (8.9) a,b,f	56.6 (6.5) a,b,c,f,g	27.6 (3.3) a,d,e,g	41.3 (11.2) a,b,e,f
N (mg l <sup>-1</sup> )	2.0 (0.8) —	2.2 (1.0) —	2.6 (1.0) —	2.0 (0.6) —	2.6 (0.5) —	2.3 (0.6) —	3.1 (0.7) —
NH <sub>4</sub> <sup>+</sup> (mg l <sup>-1</sup> )	1.26 (0.68) —	1.35 (0.64) —	1.33 (0.30) —	1.42 (0.69) —	1.26 (0.34) —	1.16 (0.40) —	1.25 (0.39) —
NO <sub>2</sub> <sup>-</sup> + NO <sub>3</sub> <sup>-</sup> (µg l <sup>-1</sup> )	5 (4) b	2 (1) a	5 (2) —	3 (1) —	4 (2) —	5 (2) —	4 (2) —
Cl <sup>-</sup> (mg l <sup>-1</sup> )	0.77 (0.20) —	0.52 (0.20) —	0.65 (0.26) —	0.65 (0.18) —	0.91 (0.28) g	0.57 (0.24) —	0.41 (0.23) e
SO <sub>4</sub> <sup>2-</sup> (mg l <sup>-1</sup> )	0.80 (0.75) c,d	0.27 (0.18) —	0.24 (0.18) a	0.27 (0.07) a	0.49 (0.25) —	0.35 (0.08) —	0.30 (0.07) —
Al (mg l <sup>-1</sup> )	0.05 (0.06) e	0.08 (0.13) e	0.10 (0.07) e	0.23 (0.12) e	0.60 (0.24) a,b,c,d,f,g	0.08 (0.04) e	0.09 (0.12) e
Ca (mg l <sup>-1</sup> )	2.88 (1.28) c,d,e,f,g	2.41 (0.72) d,f,g	1.47 (0.50) a	1.05 (0.42) a,b	1.60 (0.17) a	1.06 (0.28) a,b	0.64 (0.25) a,b
Cu (µg l <sup>-1</sup> )	8 (4) d,e,g	10 (4) d,e,g	17 (7) g	23 (6) a,b	28 (4) a,b	19 (4) —	29 (9) a,b,c
Fe (mg l <sup>-1</sup> )	0.08 (0.06) e	0.45 (0.87) e	0.59 (0.58) e	0.89 (0.68) e	2.65 (1.96) a,b,c,d,f,g	0.41 (0.20) e	0.30 (0.39) e
K (mg l <sup>-1</sup> )	0.45 (0.11) d,g	0.32 (0.10) —	0.26 (0.25) —	0.17 (0.12) a,e	0.42 (0.17) d,g	0.25 (0.15) —	0.16 (0.10) a,e
Mg (mg l <sup>-1</sup> )	1.39 (0.63) c,d,e,f,g	1.29 (0.31) c,d,e,f,g	0.52 (0.17) a,b	0.35 (0.10) a,b	0.55 (0.12) a,b	0.25 (0.06) a,b	0.15 (0.08) a,b
Mn (µg l <sup>-1</sup> )	8 (7) e	6 (7) e	11 (8) e	16 (10) —	26 (7) a,b,c,f,g	10 (6) e	8 (8) e
Na (mg l <sup>-1</sup> )	2.62 (0.79) c,d,e,f,g	2.37 (0.44) c,d,f,g	1.53 (0.23) a,b	1.24 (0.22) a,b	1.67 (0.40) a	1.15 (0.52) a,b	0.99 (0.36) a,b
Pb (µg l <sup>-1</sup> )	19 (3) —	33 (14) —	50 (21) —	29 (13) —	48 (16) —	30 (13) —	30 (13) —
S (mg l <sup>-1</sup> )	0.32 (0.20) e	0.31 (0.14) e	0.29 (0.08) e	0.32 (0.06) e	0.54 (0.08) a,b,c,d	0.35 (0.14) —	0.37 (0.08) —
Si (mg l <sup>-1</sup> )	4.41 (1.15) g	4.66 (1.26) g	3.21 (1.45) —	3.46 (1.68) g	3.98 (1.74) g	2.39 (1.55) —	1.11 (0.71) a,b,d,e
Zn (µg l <sup>-1</sup> )	12 (7) e,f,g	22 (10) g	25 (10) g	28 (5) g	38 (9) a	29 (6) a,g	48 (17) a,b,c,d,f
Conductivity (µS cm <sup>-1</sup> )	35.0 (12.7) c,d,e,f,g	29.1 (5.8) c,d,e,f,g	16.4 (3.7) a,b,g	13.3 (2.6) a,b,g	16.1 (4.3) a,b,g	8.5 (2.2) a,b	2.1 (2.5) a,b,c,d,e
AD <sup>-</sup> (µeq l <sup>-1</sup> )	165 (65)* —	242 (69) —	265 (77) —	277 (67) —	339 (32) —	234 (44) —	277 (49) —
OA <sup>-</sup> (µeq l <sup>-1</sup> )	130 (38)* n	244 (89) 6	252 (74) 6	271 (49) 8	329 (35) 6	172 (17) 8	216 (49) 8

\* = one outlier eliminated