

Appendix 2. The 6-letter codes for the municipalities in Finland

The names have been abbreviated by taking the six letters from the beginning of the name. Exceptions are shown by an asterisk (*). The national grid coordinates of the central point of each municipality are presented with an accuracy of 1 km. The whole area of the municipality is included within the given radius (r) from its central point. LOS = local ornithological society (see the map on the back cover for code numbers 1-23).

LOS		Coordinates			LOS		Coordinates				
		North	East	r			North	East	r		
14	ALAHÄR	Alahärmä	7023	290	20	16	HEINÄV	Heinävesi	6924	590	30
14	ALAJÄR	Alajärvi	6992	348	30	3	HELSIN	Helsinki	6673	388	20
2	ALASTA	Alastaro	6768	274	20	19	HIMANK	Himanka	7112	341	20
19	ALAVIE	Alavieska	7120	370	20	16	HIRVEN	Hirvensalmi	6839	486	30
14	ALAVUS	Alavus	6946	320	30	7	HOLLOL	Hollola	6766	418	20
5	AKOSKI*	Anjalankoski	6737	504	30	11	HONKAJ	Honkajoki	6886	251	20
16	ANTTOL	Anttola	6830	539	20	2	HOUTSK	Houtskari	6695	186	20
4	ARTJÄR	Artjärvi	6738	449	20	11	HUITTI	Huittinen	6790	271	21
7	ASIKKA	Asikkala	6790	423	25	9	HUMPPI	Humppila	6761	300	20
2	ASKAIN	Askainen	6726	213	20	21	HYRYNS	Hyrynsalmi	7174	583	40
4	ASKOLA	Askola	6714	426	20	3	HYVINK	Hyvinkää	6726	381	15
2	ABURA	Aura	6730	258	10	10	HKYRÖ *	Hämeenkyrö	6836	300	23
1	RÄNDÖ	Brändö	6714	169	35	8	HLINNA*	Hämeenlinna	6768	362	15
2	DRAGSF	Dragsfjärd	6658	243	30	20	II	Ii	7258	423	30
1	ECKERÖ	Eckerö	6706	80	25	17	IISALM	Iisalmi	7049	509	30
5	ELIMÄK	Elimäki	6737	472	20	5	IITTI	Iitti	6755	463	32
18	ENO	Eno	6965	670	35	10	IKAALI	Ikaalinen	6864	297	32
16	ENONKO	Enonkoski	6887	599	22	14	ILMAJO	Ilmajoki	6968	274	26
23	ENONTE	Enontekiö	7618	329	120	18	ILOMAN	Ilomantsi	6975	703	50
3	ESPOO	Espoo	6681	370	24	6	IMATRA	Imatra	6784	598	13
11	EURA	Eura	6781	234	20	23	INARI	Inari	7657	500	120
11	EURAJO	Eurajoki	6810	218	20	2	INIÖ	Iniö	6710	187	20
14	EVIJÄR	Evijärvi	7039	320	20	3	INKOO	Inkoo	6658	332	20
1	FINSTR	Finström	6703	107	20	12	ISOJOK	Isojoki	6905	234	20
9	FORSSA	Forssa	6755	315	18	14	ISOKYR	Isokyrö	6997	263	25
1	FÖGLÖ	Föglö	6654	126	45	5	JAALA	Jaala	6783	473	20
1	GETA	Geta	6721	105	20	14	JALASJ	Jalasjärvi	6934	284	24
19	HAAPAJ	Haapajärvi	7073	417	20	8	JANAKK	Janakkala	6748	372	30
20	HAAPAV	Haapavesi	7118	422	30	18	JOENSU	Joensuu	6944	641	12
20	HAILUO	Hailuoto	7222	394	25	9	JOKIOI	Jokioinen	6751	309	20
2	HALIKK	Halikko	6706	279	20	1	JOMALA	Jomala	6693	106	20
19	HALSUA	Halsua	7037	362	20	16	JOROIN	Joroinen	6895	543	20
5	HAMINA	Hamina	6715	508	10	15	JOUTSA	Joutsa	6849	460	20
1	HAMMAR	Hammarland	6704	99	24	6	JOUTSE	Joutseno	6784	589	24
15	HANKAS	Hankasalmi	6922	474	30	17	JUANKO	Juankoski	6994	568	20
3	HANKO	Hanko	6641	277	20	12	JURVA	Jurva	6970	240	20
11	HARJAV	Harjavalta	6812	240	10	18	JUUKA	Juuka	7018	608	40
7	HARTOL	Hartola	6830	446	28	10	JUUPAJ	Juupajoki	6860	368	20
8	HATTUL	Hattula	6768	351	30	16	JUVA	Juva	6867	543	40
8	HAUHO	Hauho	6785	369	20	15	JKYLÄK*	Jyväskylä	6905	435	10
20	HAUKIP	Haukipudas	7230	424	34	15	JKYLÄM*	Jyväskylän mlk	6905	430	30
16	HAUKIV	Haukivuori	6886	504	20	11	JÄMIJÄ	Jämijärvi	6865	271	20
8	HAUSJÄ	Hausjärvi	6739	390	20	15	JÄMSÄ	Jämsä	6859	407	30
7	HEINOK*	Heinola	6788	447	10	15	JÄMSÄN	Jämsänkoski	6872	403	20
7	HEINOM*	Heinolan mlk	6793	459	30	16	JÄPPIL	Jäppilä	6922	521	20

LOS		Coordinates			
		North	East	r	
3	JÄRVEN	Järvenpää	6707	394	10
2	KAARIN	Kaarina	6708	247	20
17	KAAVI	Kaavi	6989	588	28
21	KAJAAN	Kajaani	7109	528	40
19	KALAJO	Kalajoki	7125	354	30
2	KALANT	Kalanti	6749	204	20
8	KALVOL	Kalvola	6778	338	20
10	KANALA*	Kangasala	6824	344	20
16	KLAMPI*	Kangaslampi	6914	573	24
16	KNIEMI*	Kangasniemi	6877	482	30
11	KANKAA	Kankaanpää	6866	254	26
15	KANNON	Kannonkoski	6989	415	25
19	KANNUS	Kannus	7093	348	20
12	KARIJO	Karijoki	6924	228	20
2	KARINA	Karinainen	6735	272	10
3	KARJAA	Karjaa	6667	319	20
3	KLOHJA*	Karjalohja	6686	320	20
3	KARKKI	Karkkila	6716	345	20
11	KARKKU	Karkku	6817	290	20
14	KARSTU	Karstula	6971	385	30
17	KARTTU	Karttula	6969	504	20
11	KARVIA	Karvia	6902	269	20
12	KASKIN	Kaskinen	6932	200	10
12	KAUHAJ	Kauhajoki	6922	253	30
14	KAUHAV	Kauhava	7008	306	20
3	KAUNIA	Kauniainen	6679	372	10
19	KAUSTI	Kaustinen	7057	338	20
17	KEITEL	Keitele	7006	466	30
22	KEMIK *	Kemi	7287	384	18
23	KEMIJÄ	Kemijärvi	7396	518	50
22	KEMIM *	Keminmaa	7305	397	20
2	KEMIÖ	Kemiö	6679	264	25
20	KEMPEL	Kempele	7202	432	20
3	KERAVA	Kerava	6698	395	10
16	KERIMÄ	Kerimäki	6879	622	25
20	KESTIL	Kestilä	7136	471	20
18	KESÄLA	Kesälahti	6870	648	30
14	KEURUU	Keuruu	6906	383	35
11	KIHNIÖ	Kihniö	6910	300	20
18	KIIHTE	Kiihtelysvaara	6937	667	25
2	KIIKAL	Kiikala	6710	311	20
11	KIIKOI	Kiikoinen	6824	264	20
20	KIIMIN	Kiiminki	7229	445	20
14	KINNUL	Kinnula	7026	399	20
3	KIRKKO	Kirkkonummi	6665	355	32
2	KISKO	Kisko	6687	306	20
18	KITEE	Kitee	6889	660	32
23	KITTIL	Kittilä	7519	415	70
11	KIUKAI	Kiukainen	6803	231	20
17	KIURUV	Kiuruvesi	7066	479	35

LOS		Coordinates			
		North	East	r	
14	KIVIJÄ	Kivijärvi	7007	399	20
2	KODISJ	Kodisjoki	6780	213	10
11	KOKEMÄ	Kokemäki	6811	254	22
19	KOKKOL	Kokkola	7083	307	25
23	KOLARI	Kolari	7474	377	50
15	KONGIN	Konginkangas	6966	440	20
15	KONNEV	Konnevesi	6950	465	20
18	KONTIO	Kontiolahti	6964	648	30
15	KORPIL	Korpilahti	6877	425	30
2	KORPPO	Korppoo	6675	194	41
13	KORSNÄ	Korsnäs	6974	201	25
14	KORTES	Kortesjärvi	7027	312	20
8	KOSKIH*	Koski Hl	6767	400	15
2	KOSKIT*	Koski Tl	6734	285	15
5	KOTKA	Kotka	6704	500	30
5	KOUVOL	Kouvola	6750	483	10
12	KRISTI	Kristiinankaup.	6911	213	30
19	KRUUNU	Kruunupyö	7058	317	30
10	KUHMAL	Kuhmalahti	6823	380	20
21	KUHMO	Kuhmo	7130	633	60
10	KUHMOI	Kuhmoinen	6840	407	27
20	KUIVAN	Kuivaniemi	7285	442	40
11	KULLAA	Kullaa	6830	247	20
1	KUMLIN	Kumlinge	6707	155	28
17	KUOPIO	Kuopio	6975	533	30
10	KUOREV	Kuorevesi	6869	381	20
14	KUORTA	Kuortane	6965	325	20
12	KURIKK	Kurikka	6950	264	20
10	KURU	Kuru	6871	320	30
2	KUSTAV	Kustavi	6732	185	24
20	KUUSAM	Kuusamo	7324	602	60
5	KUUSAN	Kuusankoski	6755	477	15
2	KUUSJO	Kuusjoki	6719	291	10
10	KYLMÄK	Kylmäkoski	6784	324	20
14	KYYJÄR	Kyyjärvi	6999	377	20
19	KÄLVIA	Kälviä	7075	347	42
7	KÄRKÖL	Kärkölä	6752	404	16
20	KÄRSÄM	Kärsämäki	7100	442	28
1	KÖKAR	Kökar	6659	164	20
11	KÖYLIÖ	Köyliö	6792	252	20
7	LAHTI	Lahti	6766	427	15
13	LAIHIA	Laihia	6988	246	20
2	LAITIL	Laitila	6767	215	20
8	LAMMI	Lammi	6776	392	32
4	LAPINJ	Lapinjärvi	6728	458	20
17	LAPINL	Lapinlahti	7025	520	20
14	LAPPAJ	Lappajärvi	7010	327	20
6	LRANTA*	Lappeenranta	6762	564	22
11	LAPPI	Lappi	6785	221	20
14	LAPUA	Lapua	6984	304	28

LOS			Coordinates North East r			LOS			Coordinates North East r		
15	LAUKAA	Laukaa	6923	448	30	2	MUURLA	Muurla	6696	292	10
11	LAVIA	Lavia	6838	261	20	2	MYNÄMÄ	Mynämäki	6747	231	20
14	LEHTIM	Lehtimäki	6973	342	20	4	MYRSKY	Myrskylä	6728	436	15
15	LEIVON	Leivonmäki	6867	451	20	7	MÄNTSÄ	Mäntsälä	6729	404	20
6	LEMI	Lemi	6774	544	12	14	MÄNTTÄ	Mänttä	6884	376	10
1	LEMLAN	Lemland	6674	109	25	7	MÄNTYH	Mäntyharju	6802	490	35
10	LEMPÄÄ	Lempäälä	6806	326	20	2	NAANTA	Naantali	6714	226	10
2	LEMU	Lemu	6729	223	20	11	NAKKIL	Nakkila	6818	228	20
17	LEPPÄV	Leppävirta	6933	541	38	7	NASTOL	Nastola	6766	441	15
19	LESTIJ	Lestijärvi	7046	383	20	2	NAUVO	Nauvo	6665	216	36
18	LIEKSA	Liekka	7029	662	50	17	NILSIÄ	Nilsia	7011	554	28
2	LIETO	Lieto	6723	253	15	19	NIVALA	Nivala	7091	401	20
4	LILJEN	Liljendal	6719	449	10	10	NOKIA	Nokia	6821	304	16
20	LIMINK	Liminka	7169	438	35	11	NOORMA	Noormarkku	6840	234	23
18	LIPERI	Liperi	6935	624	28	2	NOUSIA	Nousiainen	6737	235	20
3	LOHJAK*	Lohja	6685	337	10	6	NUJAM	Nuijamaa	6766	585	20
3	LOHJAM*	Lohjan kunta	6685	333	20	3	NUMMIP	Nummi-Pusula	6703	329	20
19	LOHTAJ	Lohtaja	7104	332	26	18	NURMES	Nurmes	7051	604	45
2	LOIMAK*	Loimaa	6756	285	20	3	NURMIJ	Nurmijärvi	6702	376	20
2	LOIMAM*	Loimaan kunta	6753	282	22	14	NURMO	Nurmo	6966	299	25
8	LOPPI	Loppi	6737	354	24	12	NÄRPIÖ	Närpiö	6950	217	35
4	LOVIIS	Loviisa	6704	457	20	13	ORAVAI	Oravainen	7024	274	22
15	LUHANK	Luhanka	6855	434	20	7	ORIMAT	Orimattila	6747	432	20
20	LUMIJO	Lumijoki	7193	413	43	2	ORIPÄÄ	Oripää	6762	264	14
1	LUMPAR	Lumparland	6685	125	20	10	ORIVES	Orivesi	6842	358	25
10	LUOPIO	Luopioinen	6804	374	20	20	OULAIN	Oulainen	7129	398	20
19	LUOTO	Luoto	7079	290	24	20	OULU	Oulu	7212	429	20
6	LUUMÄK	Luumäki	6755	531	30	20	OULUNS	Oulunsalo	7203	429	30
11	LUVIA	Luvia	6819	214	30	18	OUTOKU	Outokumpu	6962	602	20
10	LÄNGEL	Längelmäki	6851	381	25	7	PADASJ	Padasjoki	6809	402	25
13	MAALAH	Maalathi	7001	211	35	2	PAIMIO	Paimio	6717	266	20
17	MAANIN	Maaninka	7006	512	20	21	PALTAM	Paltamo	7146	540	40
1	MHAMN *	Maarianhamina	6686	107	10	2	PARAIN	Parainen	6696	240	25
13	MAKSAM	Maksamaa	7035	249	24	6	PARIKK	Parikkala	6832	632	22
2	MARTTI	Marttila	6725	275	20	11	PARKAN	Parkano	6892	291	30
2	MASKU	Masku	6723	230	20	20	PATTIJ	Pattijoki	7166	387	25
2	MELLIL	Mellilä	6744	281	10	23	PELKOS	Pelkosenniemi	7452	521	50
20	MERIJÄ	Merijärvi	7135	379	20	23	PELLO	Pello	7409	385	40
11	MERIKA	Merikarvia	6878	215	20	14	PERHO	Perho	7018	374	20
2	MERIMA	Merimasku	6716	215	20	4	PERNAJ	Pernaja	6693	449	30
5	MIEHIK	Miehikkälä	6738	540	22	2	PERNIÖ	Perniö	6688	282	20
2	MIETOI	Mietoinen	6734	230	25	2	PERTTE	Pertteli	6705	297	13
16	MIKKEK*	Mikkeli	6839	513	10	7	PERTUN	Pertunmaa	6821	473	20
16	MIKKEM*	Mikkelin mlk	6849	513	30	14	PERÄSE	Peräseinäjoki	6938	302	24
10	MOUHIJ	Mouhijärvi	6827	287	20	15	PETÄJÄ	Petäjavesi	6906	409	20
20	MUHOS	Muhos	7183	460	30	16	PIEKSK*	Pieksämäki	6911	506	10
14	MULTIA	Multia	6934	388	30	16	PIEKSM*	Pieksämäen mlk	6913	500	30
23	MUONIO	Muonio	7530	366	50	17	PIELAV	Pielavesi	7016	482	35
13	MUSTAS	Mustasaari	7018	223	40	19	PIETAK*	Pietarsaari	7069	287	14
15	MUURAM	Muurame	6892	430	20	19	PIETAM*	Pietarsaaren mlk	7055	292	32

LOS		Coordinates			LOS		Coordinates				
		North	East	r			North	East	r		
15	PIHTIP	Pihtipudas	7034	433	30	2	RYMÄTT	Rymättylä	6701	218	20
2	PIIKKI	Piikkiö	6708	254	20	18	RÄÄKKY	Rääkkylä	6907	638	30
20	PIIPPO	Piippola	7118	451	20	6	SAARI	Saari	6852	645	20
10	PIRKKA	Pirkkala	6820	319	10	15	SAARIJ	Saarijärvi	6951	410	30
3	POHJA	Pohja	6668	305	20	10	SAHALA	Sahalahti	6819	361	13
18	POLVIJ	Polvijärvi	6980	618	30	23	SALLA	Salla	7435	574	100
11	POMARK	Pomarkku	6853	235	20	2	SALO	Salo	6702	286	20
11	PORI	Pori	6836	218	28	1	SALTVI	Saltvik	6716	120	20
3	PORNAI	Pornainen	6711	408	13	3	SAMMAT	Sammatti	6695	324	10
4	PORVOK*	Porvoo	6699	426	10	2	SAUVO	Sauvo	6698	265	20
4	PORVOM*	Porvoon mlk	6691	421	40	6	SAVITA	Savitaipale	6783	531	30
23	POSIO	Posio	7341	545	50	16	SAVONL	Savonlinna	6862	600	50
20	PUDASJ	Pudasjärvi	7267	500	60	16	SAVONR	Savonranta	6906	612	20
4	PUKKIL	Pukkila	6728	422	10	23	SAVUKO	Savukoski	7508	563	80
20	PULKKI	Pulkila	7133	443	20	14	SEINÄK*	Seinäjoki	6970	286	23
16	PUNKAH	Punkaharju	6850	609	35	19	SIEVI	Sievi	7083	384	30
9	PUNKAL	Punkalaidun	6780	292	20	11	SIIKAI	Siikainen	6874	232	20
21	PUOLAN	Puolanka	7192	539	50	20	SIIKAJ	Siikajoki	7185	392	20
16	PUUMAL	Puumala	6830	566	40	17	SIILIN	Siilinjärvi	6997	533	20
5	PYHTÄÄ	Pyhtää	6698	481	25	22	SIMO	Simo	7296	419	40
20	PYHÄJ *	Pyhäjoki	7148	375	20	3	SIPOO	Sipoo	6692	403	26
19	PYJÄRO*	Pyhäjärvi	7062	450	36	3	SIUNTI	Siuntio	6675	342	20
20	PYHÄNT	Pyhäntä	7109	475	30	23	SODANK	Sodankylä	7518	500	100
2	PYHÄRA	Pyhäranta	6778	197	20	14	SOINI	Soini	6972	359	25
18	PYHÄSE	Pyhäselkä	6936	654	20	9	SOMERO	Somero	6728	308	26
14	PYLKÖN	Pylkönmäki	6952	384	20	17	SONKAJ	Sonkajärvi	7072	537	40
10	PÄLKÄN	Pälkäne	6805	352	24	21	SOTKAM	Sotkamo	7100	573	40
2	PÖYTYÄ	Pöytyä	6745	263	20	1	SOTTUN	Sottunga	6682	152	20
20	RAAHE	Raahe	7167	380	18	16	SULKAV	Sulkava	6850	579	30
2	RAISIO	Raisio	6719	234	10	15	SUMIAI	Sumiainen	6951	448	20
16	RANTAS	Rantasalmi	6886	569	30	1	SUND	Sund	6701	121	20
20	RANTSI	Rantsila	7146	439	28	11	SUODEN	Suodenniemi	6837	274	20
23	RANUA	Ranua	7323	477	50	15	SUOLAH	Suolahti	6940	439	20
11	RAUMAK*	Rauma	6793	199	25	6	SUOMEN	Suomenniemi	6802	521	25
11	RAUMAM*	Rauman mlk	6792	203	18	2	SJÄRVI*	Suomusjärvi	6701	315	12
17	RAUTAL	Rautalampi	6950	487	30	21	SSALMI*	Suomussalmi	7213	594	70
17	RAUTAV	Rautavaara	7044	566	40	17	SUONEN	Suonenjoki	6941	508	30
6	RAUTJÄ	Rautjärvi	6804	615	28	7	SYSMÄ	Sysmä	6822	433	30
19	REISJÄ	Reisjärvi	7054	400	20	11	SÄKYLÄ	Säkylä	6774	251	20
8	RENKO	Renko	6749	354	20	2	SÄRKIS	Särkisalo	6670	272	20
8	RIIHIM	Riihimäki	6739	377	20	15	SÄYNÄT	Säynätsalo	6892	436	20
16	RISTII	Ristiina	6821	517	28	6	TAIPAL	Taipalsaari	6793	557	20
21	RISTIJ	Ristijärvi	7156	572	30	20	TAIVAL	Taivalkoski	7267	557	40
23	ROVANK*	Rovaniemi	7379	442	10	2	TAIVAS	Taivassalo	6731	203	20
23	ROVANM*	Rovaniemen mlk	7407	455	80	9	TAMMEL	Tammela	6741	327	25
6	RUOKOL	Ruokolahti	6813	597	32	3	TAMMIK*	Tammisaari	6649	308	22
5	RUOTSI	Ruotsinpyhtää	6710	468	30	10	TAMPER	Tampere	6836	335	30
10	RUOVES	Ruovesi	6880	342	30	2	TARVAS	Tarvasjoki	6726	267	20
2	RUSKO	Rusko	6724	239	10	20	TEMMES	Temmes	7174	432	40
20	RUUKKI	Ruukki	7165	411	23	3	TENHOL	Tenhola	6660	281	25

LOS		Coordinates North East r		LOS		Coordinates North East r	
17	TERVO	Tervo	6988 491 25	14	VIMPEL	Vimpeli	7010 344 20
22	TERVOL	Tervola	7342 409 50	5	VIROLA	Virolahti	6719 536 25
12	TEUVA	Teuva	6943 233 20	14	VIRRAT	Virrat	6909 326 30
18	TOHMAJ	Tohmajärvi	6909 673 26	16	VIRTAS	Virtasalmi	6894 521 20
19	TOHOLA	Toholampi	7075 364 20	21	VUOLIJ	Vuolijoki	7117 507 26
10	TOIJAL	Toijala	6787 332 10	1	VÄRDÖ	Värdö	6700 135 25
15	TOIVAK	Toivakka	6886 451 20	13	VÄHÄKY	Vähäkyrö	7006 251 20
23	TORNIO	Tornio	7322 381 42	18	VÄRTSI	Värtsilä	6910 690 12
2	TURKU	Turku	6719 240 28	13	VÖYRI	Vöyri	7014 264 20
8	TUULOS	Tuulos	6785 383 20	14	YLIHÄR	Ylihärmä	7010 285 12
18	TUUPOV	Tuupovaara	6927 689 28	20	YLI-II	Yli-li	7257 449 30
17	TUUSNI	Tuusniemi	6967 580 25	20	YLIKII	Ylikiiminki	7220 464 30
3	TUUSUL	Tuusula	6701 389 20	14	YLISTA	Ylistaro	6985 279 20
20	TYRNÄV	Tyrnävä	7184 444 30	23	YLITOR	Ylitornio	7381 388 50
14	TÖYSÄ	Töysä	6951 339 20	19	YLIVIE	Ylivieska	7111 385 20
19	ULLAVA	Ullava	7062 351 20	6	YLÄMAA	Ylämaa	6747 554 20
11	ULVILA	Ulvila	6821 228 20	2	YLÄNE	Yläne	6755 250 20
9	URJALA	Urkala	6779 311 26	10	YLÖJÄR	Ylöjärvi	6835 318 20
20	UTAJÄR	Utajärvi	7192 491 40	9	YPÄJÄ	Ypäjä	6752 296 20
23	UTSJOK	Utsjoki	7731 500 80	11	ÄETSÄ	Äetsä	6806 276 22
6	UUKUNI	Uukuniemi	6852 658 20	14	ÄHTÄRI	Ähtäri	6944 358 30
15	UURAIN	Uurainen	6929 422 20	15	ÄÄNEKO	Äänekoski	6948 431 20
19	UUSPY*Y	Uusikaarlepyy	7046 282 25				
2	UUSKAU*	Uusikaupunki	6760 191 26				
21	VAALA	Vaala	7155 500 40				
13	VAASA	Vaasa	7009 222 18				
2	VAHTO	Vahto	6733 244 20				
10	VKOSKI*	Valkeakoski	6797 341 20				
5	VKEALA*	Valkeala	6765 490 35				
18	VALTIM	Valtimo	7073 590 25				
10	VAMMAL	Vammala	6811 279 25				
2	VAMPUL	Vampula	6778 267 12				
3	VANTAA	Vantaa	6689 389 20				
17	VARKAU	Varkaus	6914 544 10				
17	VARPAI	Varpaisjärvi	7034 545 20				
5	VEHKAL	Vehkalahti	6715 513 40				
2	VEHMAA	Vehmaa	6739 208 20				
17	VEHMER	Vehmersalmi	6961 559 20				
2	VELKUA	Velkua	6708 205 14				
17	VESANT	Vesanto	6978 474 25				
10	VESILA	Vesilahti	6798 312 20				
2	VÄSTAN	Västansfjärd	6665 263 20				
19	VETELI	Veteli	7037 345 20				
17	VIEREM	Vieremä	7081 503 30				
20	VIHANT	Vihanti	7147 407 20				
3	VIHTI	Vihti	6702 352 24				
10	VIIALA	Viiala	6792 325 10				
15	VIITAS	Viitasaari	6998 436 40				
10	VILJAK	Viljakkala	6854 310 20				
14	VILPPU	Vilppula	6890 364 30				

Appendix 3. Identification of forest site types

The basic ideas of the Finnish School of Forestry, founded by A.K. Cajander in the beginning of this century, are (1) to use stable (climax) communities as the basis for the classification of vegetation and (2) to identify forest site types through ground vegetation. The term 'forest site type' is used to distinguish the concept from 'forest type', which is usually characterized by different tree species, i.e. pine, spruce and birch forests.

Pine, spruce and birch are the dominant trees in the species-scarce boreal forests in Finland. The concept of the forest site type gives an opportunity to evaluate in a simple way the fertility of forest areas on the basis of ground vegetation, despite the diversifying effects of canopy tree species, tree stand maturation and variation in the intensity of silviculture (see e.g. Mikola 1982, Lahti & Väisänen 1987; references in the Introduction in this Manual). Productivity of a forest habitat also has implications for the ecology of birds.

The following short review of the identification of forest site types is restricted to the main vegetation subzones of the taiga (see map): 2 = south boreal zone, 3 = middle boreal zone and 4 = southern section of the north boreal zone (the other zones are: 1 = archipelago zone, 5 = northern section of the north boreal zone and 6 = hemiarctic zone).

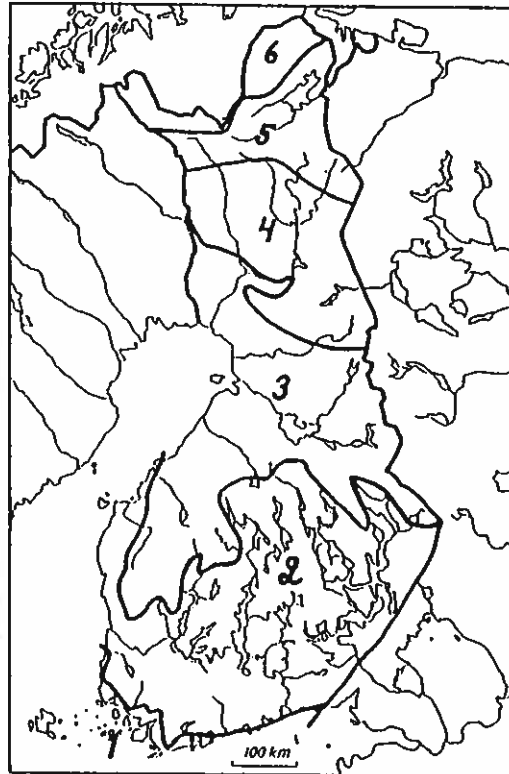
Dry heath forests

Forest site types:

- Zone 2: *Calluna* type (CT)
- Zone 3: *Empetrum*–*Calluna* type (ECT)
- Zone 4: *Myrtillus*–*Calluna*–*Cladina* type (MCCIT).

A forest site type with an almost pure reindeer lichen cover (the *Cladina* type, CIT) has been identified from the driest and most barren sites in all zones. It has possibly developed after an intensive forest fire and as such represents a transitory stage.

Dwarf shrub cover dominated by the heather *Calluna vulgaris* is otherwise typical of dry heath pine forests, although the proportions of crowberry *Empetrum* spp., cowberry *Vaccinium vitis-idaea* and blueberry *V. myrtillus* increase towards the north. Lichens have an important



role in the bottom layer and they are as frequent as mosses especially in North Finland. Grasses and herbs are very scarce. The humus layer is poorly decomposed, breaks easily into flat pieces and is often very thin.

Moderately fresh heath forests

Forest site types:

- Zone 2: *Vaccinium* type (VT)
- Zone 3: *Empetrum*–*Vaccinium* type (EVT)
- Zone 4: *Empetrum*–*Myrtillus* type (EMT).

Usually on dryish sandy tills (collective term for sediments laid down by the direct action of glacial ice without the intervention of water) and alluvial sands. The tree layer consists of pine, growing either in pure stands or in mixed stands with birch. Spruce is common as a poorly growing undergrowth species but may sometimes be the dominant tree. The field and bottom layers are dominated by cowberry and a moss *Pleurozium schreberi*, which together often form a continuous coverage. In northern Finland the crowberry competes with the cowberry for the role of dominant dwarf shrub. Li-

chens are scarce in the south but more frequent in the north. Grasses often grow on open sites.

Fresh heath forests

Forest site types:

Zone 2: Myrtillus type (MT)

Zone 3: Vaccinium–Myrtillus type (VMT)

Zone 4: Hylocomium–Myrtillus type (HMT).

Occur on mesic (meaning neither extremely wet nor extremely dry) till soils. The tree species composition (spruce, birch, pine) is rather variable, though mature forests are typically dominated by spruce. Also shrubs, especially the juniper and the rowan, are rather common. The blueberry covers the major part of the herb layer in South Finland and cowberry is the dominant dwarf shrub in the north. Grasses and herbs occur frequently but not under trees. The bottom layer is dominated by feather-mosses *Hylocomium splendens*, *Pleurozium schreberi* and *Dicranum* spp. In high watershed regions, especially on north-east slopes and in extensive areas of North Finland, a thick moss carpet tends to accumulate under spruces. The raw-humus layer is fairly thick and clearly separated from the mineral soil.

Fresh herb-rich heath forests

Forest site types:

Zone 2: Oxalis–Myrtillus type (OMT) and on clay soils *Pyrola* type (PyT)

Zone 3: Geranium–Oxalis–Myrtillus type (GOMT)

Zone 4: Geranium–Myrtillus type (GMT).

Found on mesic to moist nutrient-rich moraine soils, often on low-lying lands. Productive spruce stands, with pine and birch occurring mainly on burned or managed sites. The shrub layer includes several species. The species-rich field layer is characterized by grasses and herbs, e.g. the wood crane's-bill *Geranium syl-*

vaticum. Many of the characteristic species become rare or even disappear northwards, for example wood sorrel *Oxalis acetosella*. Dwarf shrubs (blueberry, cowberry) grow well but especially in the south their coverage decreases. There is a large number of moss species, but their coverage is patchy. Besides the common feather-mosses mentioned above, small numbers of species typical of herb-rich forests are found. The humus layer consists of fairly well decomposed mull (thickness 5–10 cm).

Herb-rich forests

Forest site types:

Zone 2: Oxalis–Maianthemum type (OMaT), Filices type (FT; moist forests characterized by the spruce canopy with an undergrowth of tall ferns) and Hepaticum–Oxalis type (HeOT)

Zone 3: Geranium–Oxalis–Maianthemum type (GOMaT), Geranium–Oxalis–Filipendula type (GOFiT) and Filices type (FT)

Zone 4: Geranium–Dryopteris type (GDT), Geranium–Filipendula type (GFiT) and Filices type (FT).

The richest nemoral forests cover only 1% of the total forest area of southern Finland and even less in northern Finland. They are found particularly in areas where there is lime in the bedrock. The tree layer usually consists of hardwood species but sometimes of a pure spruce stand. Herb-rich forests have a fertile mull soil (thickness 10–30 cm), resembling the brumisols of the temperate zone, whereas the previous dwarf-shrub-dominated forests always have a typical podzol soil profile. The May lily *Maianthemum bifolium*, hepatica *Hepatica nobilis*, meadowsweet *Filipendula ulmaria* and tall ferns like shield fern *Dryopteris* spp. are characteristic species for the rich forb and grass layer. The moss layer, though poorly developed, has several typical broad-leaved species.

Appendix 4. Categories of breeding evidence

Categories of breeding evidence to be used on Bird Site Inventory Form 11C-D and Threatened Species Form 13A.

A. Unlikely breeding (code 1)

1. *Species observed in the breeding season in a site, but breeding there is not likely.* – Not applied, however, for overflying or resting migrants, or for visitors searching for food from neighbouring areas. Note geographical and within-species variation of breeding phenology.

B. Possible breeding (codes 2–3)

2. *Bird observed once* (e.g. singing or displaying male) *in typical nesting habitat and breeding of the species in the site is possible.* The place was visited (only) once or the bird was recorded only during one of several visits. – Note that the proper breeding habitat may vary geographically.

3. *Pair observed once in a suitable nesting habitat and breeding of the species in the site is possible.*

C. Probable breeding (codes 4–6)

4. *Singing or displaying male present after migratory period on more than one day in the same place (persistent territory).*

5. *Female or pair present on more than one day in the same place; or bird visiting probable nest-site more than once* (e.g. repeated settling down in a reedbed or on an island).

6. Bird (or pair) observed
– *building nest* (excavating nest-hole, bringing nest-material etc.)

- *uttering anxiety calls*, suggesting probable presence of nest or young nearby
- *showing distraction-display or injury-feigning* to distract observer from probable nest or young
- *attacking* or other agitated behaviour (e.g. owls and terns).

Nest material (e.g. decorated nests of birds of prey) or *food remains from the same year* recorded; no direct proof of eggs or young, however.

A trapped female with brood-patch (probably breeding in the site).

D. Confirmed breeding (codes 7–8)

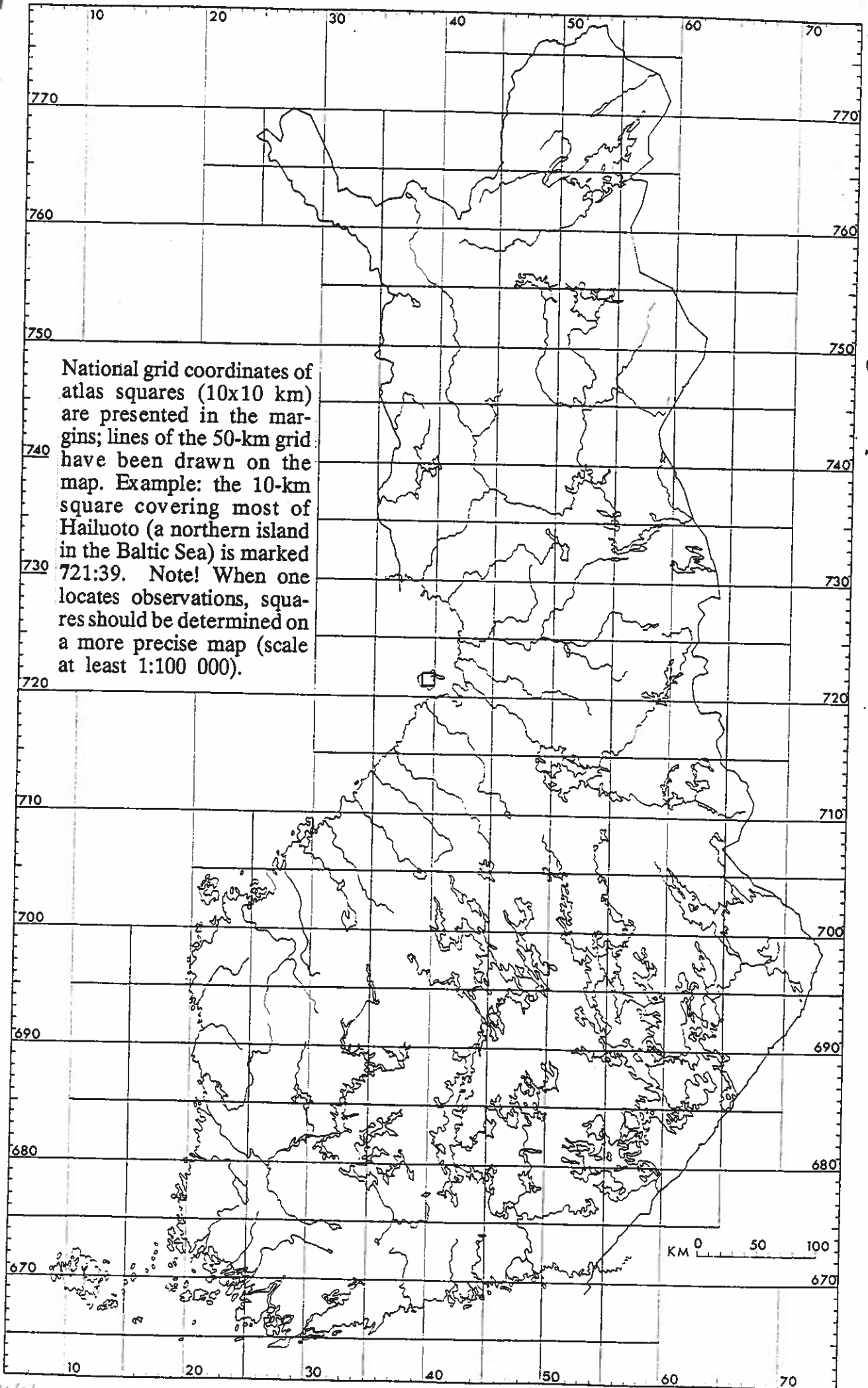
7. *Indirect proof of breeding* recorded:

- a nest being occupied in the same season (eggs, eggshells, droppings of young, 'feather scales' etc.)
- adults entering or leaving a nest-site indicating occupied nest (including high nests and nest-holes, the contents of which cannot be seen)
- recently fledged young (nidicolous species) or downy young (nidifugous species), which probably have been born in the site
- adult carrying food for young or faecal sac; nest is probably in the site surveyed
- adult incubating.

8. *Direct proof of breeding:*

- voices of young heard from the nest (e.g. high nests or nest-holes)
- nest with eggs or young seen.

9. *Nest Record Card* on an active nest and the card sent to the Zoological Museum.





Areas 1-23 of local
ornithological societies
in Finland

