



BREVIA

Breeding birds of juniper thickets in southeast Saaremaa in 1975

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I have made observations in Laimjala and Pöide districts since 1960 (mainly in the surroundings of Kingli, Audla and Saareküla). During that time I have seen a considerable change in the composition of local breeders. Even though there are no consistent counts of adequate volume, there is sufficient data for illustrating the local bird fauna of 1975 by using data of counts of breeding birds carried out in juniper thickets. This is because juniper thickets are the typical landscape of southeast Saaremaa.

From one side the observation plot comprises Laimjala, Ridala, Oti, Tornimäe, Ardlä, Vältä, Neemi, Unguma and the villages of Laheküla, extending up to the sea in south (from Saaremõisa up to Kahtla islet). Yet the main counts were carried out in the surroundings of Kingli, Audla and Saareküla, but also along Sauna bay and in coastal juniper thickets of Luhina, Sääremäe and Saastna.

The relief is greatly changing with curvy ridges. Highest above the sea level (islets of the former Pöide archipelago) grow broad-leaved mixed forests, while pine forests, juniper thickets and cultural landscape remain lower and swamps in the very lowest part (the largest being Kingli reed swamp). Alvars are covered with junipers and often bordered by stone fences. Occasional stone heaps surrounded by a few trees and bushes are adding character to juniper thickets. In general, the observation plot is diverse and mosaic in places. Therefore, various biotopes can surround a rather small juniper thicket and thereby enrich avian diversity.

The past 50 years have brought about considerable changes in the local juniper thickets. Land level rising at the coast has enhanced the

dispersal of junipers and controlling of this dispersal was up to the eighties well managed by numerous sheep. Also bovine – especially Hereford cattle breed – were helpful in preventing the juniper thickets from expanding and also the pastures from growing overly dense with junipers. Lately, as keeping of animals has become nearly nonexistent, juniper thickets have become unable to pass in places and are extending to pastures and fields. On the other hand, in large juniper thickets pines are starting to dominate.

Fieldwork was carried out during May 9–30 in 1975. Counts were conducted in line transect method and breeding species within a 25 × 25 m quadrat were counted. In special cases, when breeding of an uncommon species (e.g. Great Spotted Woodpecker *Dendrocopos major* in a very large juniper thicket and Common Wood Pigeon *Columba palumbus* in a paddock) was registered, but remained outside of the transect line, it was counted and a corresponding coefficient (0,1 pairs) was applied, yet no physical pair was registered. The summary of all juniper thickets did not include any of such species. Also in discussing different types of juniper thickets the coefficients were cancelled out. Transects were chosen providing that different landscape types were covered. During the counts a maximum of 80 km were passed through in juniper thickets. However, among species with later onset of breeding it inevitably remained somewhat shorter, yet never less than 43.8 km.

Arrangement of juniper thickets within the observation area as well as the characteristics of a few habitats called for a separate data presentation. The highest relevant importance of the total length of transects appeared to be within the very large juniper thickets, covering 56.6% of the total. Followed by small and mosaic inland juniper thickets (17.9%), coastal and mostly low as well as dense juniper thickets (10.4%) and dense, high juniper thicket with basins, used as a pasture by Tammiku farm in Kingli village (4.5%), where numerous Rowan trees, Swedish Whitebeams, Alpine Currants and other trees and bushes grow at stone fences and stone heaps. The reason for discussing the last-mentioned habitat separately was an exceptionally high bird density of that place. Latter was partly due to highly diverse landscape surrounding the pasture. 10.6% of the passed transects were covering

juniper thickets that were unspecified and difficult to determine. The summary of all the juniper thickets includes data from such areas where it has been added to the rest of the census results.

A total of 1175 breeding pairs out of 44 different species (Table 1) were registered in the juniper thickets. Species diversity did not vary among different types of juniper thickets: in all the juniper thickets the value of the Shannon index (H') was 2.92, whereas variability of different types of juniper thickets was rather low. The diversity was registered highest in very large juniper thickets ($H'=2.98$), average in high and overly dense pasture ($H'=2.91$) as well as in coastal juniper thickets ($H'=2.83$) and lowest in inland mosaic juniper thickets ($H'=2.55$). Further details about the bird fauna of different types of juniper thickets are presented in table 2.

Dominant species were Common Linnet *Carduelis cannabina*, Common Whitethroat *Sylvia communis* and Yellowhammer *Emberiza citronella*. Relative importance of these species was 36.2% (reaching up to 44.7% in mosaic juniper thickets), whereas the evident dominance appeared in all types of juniper thickets. Also high numbers of Willow Warbler *Phylloscopus trochilus* (particularly in very large juniper thickets), Northern Wheatear *Oenanthe oenanthe* and Whinchat *Saxicola rubetra* were registered. However, their numbers were lower in coastal juniper thickets. The highest number of Lesser Whitethroat *Sylvia curruca* was registered in overly dense pastures, Sky Lark *Alauda arvensis* and European Greenfinch *Carduelis chloris* were most numerous in mosaic and coastal juniper thickets. Small water bodies, which formed in juniper thickets due to the proximity of Mere and Kingli swamp, made it possible for Velvet Scoters *Melanitta fusca*, Goosanders *Mergus merganser*, Eurasian Oystercatchers *Haematopus ostralegus* and Common Redshanks *Tringa tetanus* to breed there. Also Northern Lapwing *Vanellus vanellus* who additionally bred in small pasture patches within low and mosaic juniper thickets. Barred Warbler *Sylvia nisoria* and Ortolan Bunting *Emberiza hortulana* were rare, whereas Red-backed Shrike *Lanius collurio* was numerous (Väli 2005).

Table 1. Breeding birds of SE Saaremaa.**Tabel 1.** Kagu-Saaremaa haudelinnustik.

Liik/ Species		Transekti pikkus (km) Transect length (km)	Paare Pairs	Paare/km ² Pairs/km ²	Osatähtsus % Proportion %
Kanepilind	<i>Car can</i>	80,0	160	40,0	12,4
Pruunselg-põõsalind	<i>Syl com</i>	71,2	139	39,0	12,1
Talvike	<i>Emb cit</i>	80,0	151	37,8	11,7
Kivitäks	<i>Oen oen</i>	80,0	95	23,8	7,4
Kadakatäks	<i>Sax rub</i>	43,8	49	22,4	6,9
Salu-lehelind	<i>Phy lus</i>	74,3	79	21,3	6,6
Põldlooke	<i>Ala arv</i>	80,0	67	16,8	5,2
Väike-põõsalind	<i>Syl cur</i>	71,2	57	16,0	5,0
Rohevint	<i>Car chl</i>	80,0	64	16,0	5,0
Metsvint	<i>Fri coe</i>	80,0	59	14,8	4,6
Linavästrik	<i>Mot alb</i>	80,0	43	10,8	3,3
Karmiinleevike	<i>Car ery</i>	43,8	22	10,0	3,1
Punaselg-õgija	<i>Lan col</i>	43,8	19	8,7	2,7
Hall-kärbsenäpp	<i>Mus str</i>	71,2	30	8,4	2,6
Metskiur	<i>Ant tri</i>	74,3	19	5,1	1,6
Hallrastas	<i>Tur pil</i>	80,0	16	4,0	1,2
Vainurastas	<i>Tur ili</i>	80,0	13	3,3	1,0
Hallvares	<i>Cor cor</i>	80,0	13	3,3	1,0
Laulurastas	<i>Tur phi</i>	80,0	10	2,5	0,8
Leevike	<i>Pyr ula</i>	80,0	9	2,3	0,7
Kiivitaja	<i>Van van</i>	80,0	7	1,8	0,5
Kaelustuvi	<i>Col pal</i>	80,0	7	1,8	0,5
Vööt-põõsalind	<i>Syl nis</i>	43,8	3	1,4	0,4
Vösaraat	<i>Pru mod</i>	80,0	5	1,3	0,4
Rasvatihane	<i>Par maj</i>	80,0	5	1,3	0,4
Sookiur	<i>Ant pra</i>	80,0	4	1,0	0,3
Aed-põõsalind	<i>Syl bor</i>	43,8	2	0,9	0,3
Jääkoskel	<i>Mer mer</i>	80,0	3	0,8	0,2
Nurmkana	<i>Per per</i>	80,0	3	0,8	0,2
Merisk	<i>Hae ost</i>	80,0	3	0,8	0,2
Punajalg-tilder	<i>Tri tot</i>	30,0	1	0,7	0,2
Kägu	<i>Cuc can</i>	71,6	2	0,6	0,2
Raudkull	<i>Acc nis</i>	80,0	2	0,5	0,2
Mustrastas	<i>Tur mer</i>	80,0	2	0,5	0,2
Väike-lehelind	<i>Phy col</i>	80,0	2	0,5	0,2
Kuldnokk	<i>Stu vul</i>	80,0	2	0,5	0,2
Mustpea-põõsalind	<i>Syl atr</i>	43,8	1	0,5	0,1
Põldtsiitaja	<i>Emb hor</i>	71,2	1	0,3	0,1
Tõmmuvaeras	<i>Mel fus</i>	80,0	1	0,3	0,1
Teder	<i>Tet rix</i>	80,0	1	0,3	0,1
Suur-kirjurähn	<i>Den maj</i>	80,0	1	0,3	0,1
Punarind	<i>Eri rub</i>	80,0	1	0,3	0,1
Põialpoiss	<i>Reg reg</i>	80,0	1	0,3	0,1
Sinitihane	<i>Par cae</i>	80,0	1	0,3	0,1
Kokku / Total		80,0	1175	323,0	

Table 2. Abundance of breeding birds in different types of juniper thickets (pairs/km²).Tabel 2. Erinevate kadastiketüüpide haudelinnustiku asustustihedus (paari/km²).

Liik / Species		madalad	ulatuslikud	mereäärsed	kõrge tihe
		mosaiiksed	massiivid	tihedad	koppel
		low mosaics	wide blocks	coastal, thick	high, thick run
Kanepilind	<i>Car can</i>	62,9	26,5	57,8	55,6
Pruunsalg-pöösaliind	<i>Syl com</i>	61,5	23,2	57,1	75,0
Talvike	<i>Emb cit</i>	60,1	25,2	43,4	50,0
Kivitäks	<i>Oen oen</i>	39,2	19,0	7,2	22,2
Kadakatäks	<i>Sax rub</i>	35,6	11,9	19,0	35,3
Salu-lehelind	<i>Phy lus</i>	13,6	25,2	10,4	38,9
Pödlööke	<i>Ala arv</i>	32,2	11,0	19,3	16,7
Väike-pöösaliind	<i>Syl cur</i>	12,0	14,0	26,0	50,0
Rohevint	<i>Car chl</i>	25,2	9,3	24,1	27,8
Metsvint	<i>Fri coe</i>	15,4	13,2	14,5	33,3
Linavästriik	<i>Mot alb</i>	15,4	5,7	33,7	11,1
Karmiinleevike	<i>Car ery</i>	8,2	8,5	14,3	23,5
Punaselg-õgija	<i>Lan col</i>	5,5	3,4	13,3	23,5
Hall-kärbsenäpp	<i>Mus str</i>	6,8	7,3	10,4	25,0
Metskiur	<i>Ant tri</i>	3,0	6,3	0,0	22,2
Hallrästas	<i>Tur pil</i>	5,6	4,4	2,4	0,0
Vainurästas	<i>Tur ili</i>	0,0	2,6	7,2	16,7
Hallvares	<i>Cor cor</i>	0,0	4,0	9,6	0,0
Laulurästas	<i>Tur phi</i>	0,0	1,8	7,2	16,7
Leevike	<i>Pyr ula</i>	0,0	3,1	2,4	5,6
Kiivitaja	<i>Van van</i>	2,8	0,9	7,2	0,0
Kaelustuvi	<i>Col pal</i>	0,0	3,1	0,0	0,1
Vööt-pöösaliind	<i>Syl nis</i>	0,0	0,0	4,8	23,5
Vösaraat	<i>Pru mod</i>	0,0	0,9	0,0	16,7
Rasvatihane	<i>Par maj</i>	1,4	1,8	0,0	0,0
Sookiur	<i>Ant pra</i>	0,0	0,9	4,8	0,0
Aed-pöösaliind	<i>Syl bor</i>	0,0	0,8	0,0	11,8
Jääkoskel	<i>Mer mer</i>	0,0	1,3	0,0	0,0
Nurmkana	<i>Per per</i>	1,4	0,9	0,0	0,0
Merisk	<i>Hae ost</i>	0,0	0,0	7,2	0,0
Punajalg-tilder	<i>Tri tot</i>	0,0	0,0	2,4	0,0
Kägu	<i>Cuc can</i>	1,7	0,5	0,0	0,0
Raudkull	<i>Acc nis</i>	0,0	0,9	0,0	0,0
Musträstas	<i>Tur mer</i>	1,4	0,4	0,0	0,0
Väike-lehelind	<i>Phy col</i>	0,0	0,9	0,0	0,0
Kuldnokk	<i>Stu vul</i>	0,0	0,9	0,0	0,0
Mustpea-pöösaliind	<i>Syl atr</i>	0,0	0,0	0,0	0,0
Pöldsüitsitaja	<i>Emb hor</i>	1,7	0,0	0,0	0,0
Tõmmuvaeras	<i>Mel fus</i>	0,0	0,0	2,4	0,0
Teder	<i>Tet rix</i>	0,0	0,4	0,0	0,0
Suur-kirjurähn	<i>Den maj</i>	0,0	0,1	0,0	5,6
Punarind	<i>Eri rub</i>	0,0	0,4	0,0	0,0
Pöialpoiss	<i>Reg reg</i>	0,0	0,4	0,0	0,0
Sinitihane	<i>Par cae</i>	0,0	0,4	0,0	0,0
Kokku / Total		412,7	241,6	408,3	606,6

Dominant species of southeast Saaremaa in 1975 were compared to the 7 most numerous species breeding in juniper thickets in Osmussaare in 1975 (Valker & Ojaste 2003). The contrast was substantial: the most numerous species breeding in Osmussaare was Common Rosefinch *Carpodacus erythrinus* (also rather numerous in Saaremaa in 1975), followed by Barred Warbler, which came as a surprise. The rest was almost coincident, with the exception that the number of Yellowhammers was considerably lower in Osmussaare. In southeast Saaremaa as well as in Osmussaare counts were carried out in line transect method, whereas bird density differed among these two locations, being 3.2 pairs per hectare and 2.5–3.0 pairs per hectare, corresponding (Valker & Ojaste 2003).

Literature cited. — Valker, T. & Ojaste, I. 2003. Osmussaare haudelinnustik. Linnurada: 3-17. — Väli, Ü. 2005 Hirundo Supplementum 8. 11 kaitsealust lindu. Elupaigad ja nende kaitse.

