

BIRD FAUNA OF PALJASSAARE PENINSULA IN TALLINN

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Abstract. Current study provides an overview of the bird fauna of Paljassaare peninsula that is located in Tallinn, Harju County. The study is mostly based on observations carried out in 2001–2005 but also some data from earlier periods has been included. Study area covers about 205 ha and the majority is registered as Special Protection Area of *Natura 2000* network. Altogether 206 species were registered - 100 as local breeders, 171 as passage migrants, 58 as winter visitors and 20 as vagrants.

Introduction

Paljassaare peninsula is located within the borders of Tallinn that has a favourable geographical location. It has been a restricted area for a long time because it is a former military zone. However, these days urban management and real estate developing is opposing a threat to the littoral zone. In order to preserve the diverse local bird fauna the Bird Club of Tallinn has been trying to establish a conservation unit on the Paljassaare peninsula. By now, areas in Paljassaare peninsula that are rich in birds are covered by special protection areas of *Natura 2000*. In order to better preserve the peninsula an overview of the natural conditions has to be obtained as soon as possible and the public must be informed about the results and problems that the bird area withholds. This was also the primary objective of the current study and has been set by the authors despite of the fact that the data is yet rather insufficient.

Material and methods

Paljassaare peninsula is formed by two grounds extending far into the sea: Great-Paljassaare that lies west and is about 8 m above the sea level and Small-Paljassaare that lies east and is about 5 m above the sea level. The outcrop of Great-Paljassaare reaches up to 5-6 m.

Between two grounds there lies a firth called Saartevehe lõugas. South and Southwest of this firth, in the middle of a hilly landscape, there lies a 50 ha large reedbed with numerous small puddles with only 0.8 m above the sea level. Within the impassable swamp area there are fields of bulrush (*Typha* sp.).

The coast of Paljassaare is mainly composed by stone and pebble whereas also sandy beaches and mudflats occur. Occasionally large sandy areas overgrown with grass together with other types of grassland and wastelands dominate the landscape. Higher places are usually covered by sparse shrubbery and deciduous stands with high species diversity. There are also single pines in Paljassaare whereas spruce is completely absent.

In addition to the peninsula, observations also covered the coastline together with a pond and a reedbed facing Kopli and separated by a seawall in the gulf of Paljassaare (fig 1). The observation plot covers 205 ha and is divided according to different biotopes to sandy-, pebble- and gravel shore, coastal meadows and other grasslands (35 ha), reedbeds together with water bodies (65 ha), deciduous woodlands (46 ha), wastelands (14 ha) and areas occupied by construction works.

The summary report covers observations carried out during 2001-2005 by Ranno Puumets, Eet and Aarne Tuule but some data from earlier periods has also been included. In the first couple of years observations were carried out irregularly and nearly no observations were carried out in winter periods. Therefore, observations from 2003-2005 were carried out all year round and in a sufficient rate. Data from the breeding period was obtained by transect counts, mapping and also occasional observations. Because of the highly mosaic nature of the observation plot it was often complicated or even impossible to specify the exact habitat type of the breeders since birds often bred in border

area and were using several biotopes simultaneously. Therefore estimates of the breeding period are presented for the entire observation plot. The majority of the species could be registered without any major effort because of the small size of the study area. Yet estimations of species inhabiting reedbeds remained mere estimates due to the impassability of these habitats. Also, in some years, the numbers of several common species inhabiting woodland and bushes rely on mere estimates.

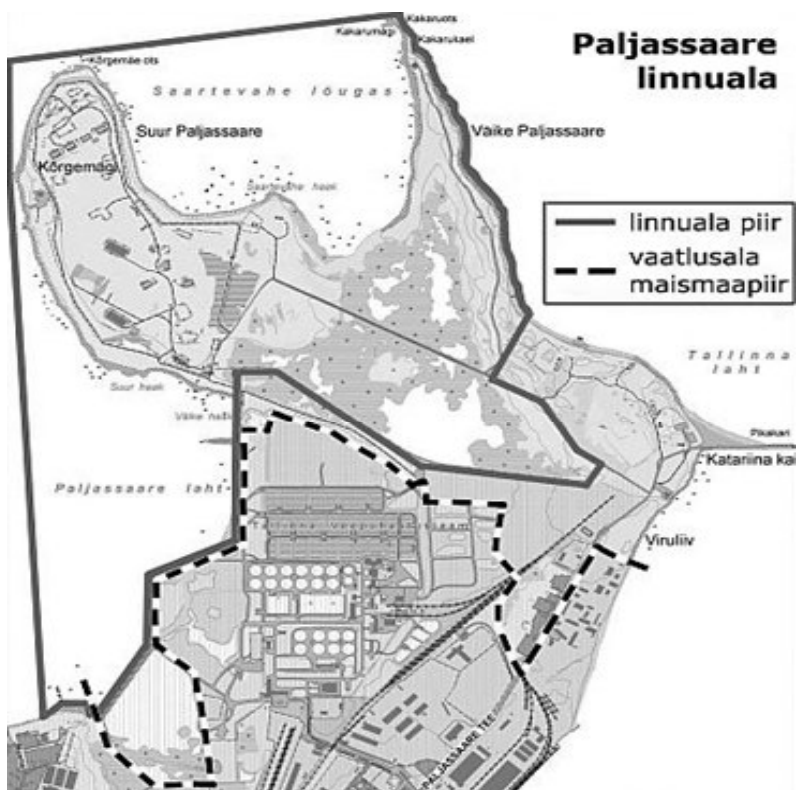


Figure 1. Map of the observation plot. „Vaatlusala maismaapiir” (North from dashed line) represents the study area. „Linnuala piir” (solid line) is surrounding the Special Protection Area of Natura 2000 network.

Joonis 1. Vaatlusala skeem

The study is also covering some observations carried out during 2003-2005 by Ingrid Aus, Marju Robal and Meelis Uustal. Also data from the 1990ies obtained by Peep Lassmann has contributed to the study. The oldest data of the bird fauna in Paljassaare is extending back to 1903 when E. Rascall was visiting the peninsula (Mank 1974).

Results

There have been 206 different bird species registered in Paljassaare. However, the area has been poorly studied due to the restrictions in the past. Yet the list of registered species has been supplemented during the past few years rather remarkably as there have been registered 100 different species currently breeding on the peninsula (table 1). At present, 55 species out of these 100 are confirmed breeders, 18 probable breeders and 27 potential breeders. Additionally, due to the suitable geographical location of the area there are 177 species of non-breeding feeding visitors, 171 passage migrants, 58 winter visitors and 18+2 vagrants.

Altogether 4 species belonging to the category I of protection, 22 species of category II and 38 species belonging to Annex II of the EU bird directive have been encountered within the study area. As several species are placed under double protection, the total number of species listed in the I and II category of protection together with the species listed in Annex II of the EU bird directive is 46. A total of 189 bird species have been registered in the past two years within the special protection area of Natura 2000 network in Paljassaare.

Breeders

Due to the small size of the observation plot the number of breeding species and the total number of birds varied among years rather significantly. Greatest fluctuations appeared in reedbeds – 8.69-19.38 pairs/ha – and were depending on the location of the colony of Black-headed Gulls (*Larus ridibundus*) that moved every spring while some birds also bred outside the study area. Thus the total number of

this species varied between 5.39-15.39 pairs/ha. The second most numerous species breeding in reedbeds was Sedge Warbler (*Acrocephalus schoenobaenus*) with a remarkably more stable population concentration - 1.23-1.85 pairs/ha. Also the number of Mute Swans (*Cygnus olor*) is rather notable and kept rising every year - 0.46-0.69 pairs/ha. On account of the January storm in 2005 reedbeds were flattened and therefore offered a possibility for counting swan nests in spring. Results were surprising as there were 40 breeding pairs counted near the largest water body in the reedbed. Also Mallard (*Anas platyrhynchos*), Coot (*Fulica atra*) and Reed Bunting (*Emberiza schoeniclus*) belonged to the dominant species. These 6 species out of 10 breeding in reedbeds made up 94% of the total breeders in this biotope. Species that also inhabited reedbeds but were less in number were Tufted Duck (*Aythya fuligula*), Great Reed Warbler (*Acrocephalus arundinaceus*), Reed Warbler (*A. scirpaceus*), Little Grebe (*Tachybaptus ruficollis*), Great Crested Grebe (*Podiceps cristatus*), Red-necked Grebe (*Podiceps grisegena*) and Slavonian Grebe (*Podiceps auritus*). Also Great Bittern (*Botaurus stellaris*) (1-2 pairs), Marsh Harrier (*Circus aeruginosus*) (1-2 pairs), Water Rail (*Rallus aquaticus*), Moorhen (*Gallinula chloropus*), Savi's Warbler (*Locustella luscinioides*), Bearded Tit (*Panurus biarmicus*) and Penduline Tit (*Remiz pendulinus*) were registered breeders whereas the three last species have been added to the local breeding species only during the past few years. Marsh Warbler (*Acrocephalus palustris*) was mostly active in the border area of the reedbeds and in willow shrubs.

Altogether 42 bird species were breeding in deciduous woodland and since the forest stands of Paljassaare can be classified as shrubberies the population concentration reached only to 2.39-3.52 pairs/ha in several years. For the same reason also a rather characteristic group of dominants was formed. The number of Chaffinches (*Fringilla coelebs*) was significantly low (0.35-0.44 pairs/ha) and followed by Common Whitethroat (*Sylvia communis*) and Garden Warbler (*S. borin*) but also Nightingale (*Luscinia luscinia*), Willow Warbler (*Phylloscopus trochilus*), Common Rosefinch (*Caprodacus erythrinus*) and Hooded Crow (*Corvus corone*). These 7 species made up approximately 59% of all the local forest breeders and were followed by Robin (*Erithacus rubecula*),

Blackbird (*Turdus merula*), Redwing (*T. iliacus*), Great tit (*Parus major*), Magpie (*Pica pica*), Tree Pipit (*Anthus trivialis*), Chiffchaff (*Phylloscopus collybita*) and others. Also Blyth's Reed Warbler (*Acrocephalus dumetorum*) was registered in reed free shrubbery and shrub glades.

Sparse shrubberies were preferred by Grey Partridge (*Perdix perdix*), Northern Wheatear (*Oenanthe oenanthe*), Whinchat (*Saxicola rubetra*), Pied Wagtail (*Motacilla alba*), Yellow Wagtail (*M. flava*), Linnet (*Carduelis cannabina*), Greenfinch (*C. chloris*) and Red-backed Shrike (*Lanius collurio*). Same species (except the last) together with Little Ringed Plover (*Charadrius dubius*) and Skylark (*Alauda arvensis*) inhabited also grasslands and wastelands.

The coastal birdfauna was rather poor. Dominant species were Common Gull (*Larus canus*), Herring Gull (*L. argentatus*) and Arctic Tern (*Sterna paradisaea*). Characteristic species were Mute Swan, Shelduck (*Tadorna tadorna*), Common Eider (*Somateria mollissima*), Ringed Plover (*Charadrius hiaticula*), Little Ringed Plover, Great Black-backed Gull (*Larus marinus*), Common Tern (*Sterna hirundo*), Little Stern (*S. albifrons*), Northern Wheatear, Pied Wagtail.

Species belonging to the confirmed local breeders of Paljassaare and need to be mentioned at this point are Common Snipe (*Gallinago gallinago*), Common Redshank (*Tringa totanus*), Oystercatcher (*Haematopus ostralegus*), House Martin (*Delichon urbica*), Sand Martin (*Riparia riparia*) and Swallow (*Hirundo rustica*). Probable breeders were Green Sandpiper (*Tringa ochropus*), Common Swift (*Apus apus*), Common Grasshopper Warbler (*Locustella naevia*) and River Warbler (*L. fluviatilis*).

Non-breeding feeding visitors and passage migrants

Additionally to breeding, several birds used the favourable location of the peninsula as a staging point during autumn as well as spring migration. Only a few species – Black-throated Diver (*Gavia arctica*), Barnacle Goose (*Branta leucopsis*), Bean Goose (*Anser fabalis*), White-fronted Goose (*A. albifrons*)– passed Paljassaare without stopping while only single individuals could be encountered staging.

Table 1. Bird fauna of breeding species in Paljassaare peninsula. **Min** and **Max** represent respectively the lowest and highest numbers of breeding pairs per year. **Pairs/ha** represents the average number of breeding pairs per hectare in 2003–2005.

Table 1. Paljassaare poolsaare haudelinnustik. Min ja Max tähistavad vastavalt vähimat ning suurimat pesitsusevate paaride arvukust aastas. Paare/ha tähistab vaatlusalal aastatel 2003–2005 loendatud keskmist pesitsuspaaride arvukust ühe hektari kohta.

Liik	Min	Max	Paare/ha	Liik	Min	Max	Paare/ha
<i>Species</i>			<i>Pairs/ha</i>	<i>Species</i>			<i>Pairs/ha</i>
TAC RUF	0	1	0.002	TRO TRO	0	1	0.002
POD CRI	3	5	0.018	PRU MOD	0	1	0.002
POD GRI	0	1	0.002	ERI RUB	4	7	0.028
POD AUR	0	1	0.002	LUS LUS	9	15	0.059
BOT STE	0	2	0.006	LUS SVE	0	1	0.002
CYG OLO	30	45	0.179	PHO PHO	0	1	0.003
TAD TAD	1	4	0.013	SAX RUB	2	4	0.013
ANA PEN	0	1	0.002	OEN OEN	5	8	0.033
ANA STR	3	5	0.018	TUR MER	4	7	0.026
ANA CRE	0	1	0.002	TUR PIL	1	4	0.011
ANA PLA	20	25	0.109	TUR PHI	0	2	0.005
ANA QUE	0	2	0.005	TUR ILI	3	6	0.023
ANA CLY	0	2	0.005	LOC NAE	0	2	0.005
AYT FER	0	2	0.003	LOC FLU	0	1	0.003
AYT FUL	5	10	0.036	LOC LUS	1	3	0.013
SOM MOL	1	4	0.015	ACR SCH	80	120	0.504
MER SER	1	3	0.008	ACR DUM	3	5	0.02
MER MER	0	2	0.005	ACR RIS	4	7	0.028
CIR AER	1	2	0.006	ACR SCI	3	6	0.023
ACC NIS	0	1	0.002	ACR ARU	1	4	0.013
FAL SUB	0	1	0.002	HIP ICT	1	3	0.008
PER PER	1	4	0.02	SYL CUR	3	5	0.02
RAL AQU	3	5	0.021	SYL COM	22	28	0.122
GAL CHL	0	2	0.005	SYL BOR	12	16	0.067
FUL ATR	15	25	0.094	SYL ATR	2	4	0.015
HAE OST	0	1	0.002	PHY COL	3	5	0.02

CHA DUB	1	4	0.015	PHY LUS	10	15	0.059
CHA HIA	1	3	0.011	MUS STR	1	4	0.011
GAL GAL	1	3	0.01	FIC HYP	1	3	0.008
SCO RUS	0	1	0.002	PAN BIA	1	3	0.01
TRI TOT	1	3	0.008	PAR MON	0	1	0.002
TRI OCH	0	1	0.002	PAR CAE	1	3	0.003
LAR RID	350	1000	2.764	PAR MAJ	5	8	0.033
LAR CAN	4	6	0.026	REM PEN	0	2	0.005
LAR ARG	3	7	0.026	LAN COL	1	4	0.016
LAR MAR	1	3	0.01	PIC PIC	2	4	0.016
STE HIR	0	10	0.029	COR MON	2	4	0.015
STE AEA	10	25	0.086	COR ONE	8	11	0.047
STE ALB	1	2	0.006	COR RAX	0	1	0.005
COL LIV	3	5	0.018	STU VUL	4	7	0.026
APU APU	0	1	0.003	PAS DOM	5	8	0.034
JYN TOR	0	1	0.002	PAS MON	4	5	0.021
ALA ARV	4	6	0.024	FRI COE	18	23	0.099
RIP RIP	15	20	0.089	CAR CHL	0	2	0.005
HIR RUS	8	12	0.046	CAR CAR	0	2	0.005
DEL URB	0	4	0.011	CAR CAN	1	3	0.008
ANT TRI	0	2	0.005	CAR ERY	9	14	0.055
ANT PRA	0	1	0.002	COC COC	0	1	0.002
MOT FLA	8	12	0.05	EMB CIT	0	3	0.006
MOT ALB	5	10	0.044	EMB SCH	15	20	0.088

In spring, several waterfowls, for example Long-tailed Duck, Goldeneye (*Bucephala clangula*), Common Eider, Tufted Duck, Goosander (*Mergus merganser*) and Coot, were staging near the coast in open waters or in reedbeds. Migration of gulls and several passerines remained rather unnoticed. Therefore numerous *charadiiformes* started autumn migration already at the end of June. The most numerous species on mudflats and longshore bars were Ringed Plover, Dunlin (*Calidris alpina*), Ruff (*Philomachus pugnax*) and Wood Sandpiper (*Tringa glareola*). In early autumn the migration of *charadiiformes* slowly declined, Grey Heron (*Ardea cinerea*) disappeared from reedbeds and the number of Cormorants (*Phalacrocorax carbo*) regularly feeding in the sea was starting to decline as well. However, the number of gulls and

ducks was increasing. As autumn progressed more and more dabbling- and diving ducks appeared in the coastal waters, mostly Wigeon (*Anas penelope*), Teal (*A. crecca*), mergansers (*Mergus sp.*), Mallard, Tufted Duck, Goldeneye and Long-tailed Duck. Four last species together with Goosander, Mute Swan, Herring Gull and Hooded Crow dominated in winter. An overall picture of the waterfowl population may be obtained by looking at some days' peaks: about 500 Common Eiders, 3800 Goldeneyes and 7500 Long-tailed Ducks. A regular winter migrant was Lapland Longspur (*Calcarius lapponicus*).

Vagrants

Due to the favourable location several rare species have accidentally arrived to Paljassaare. Since intensive ornithological studies within the observation plot have been carried out for a rather short period it is probable that in near future some of the vagrants might be registered as common passage migrants. At this point, these species are still considered as vagrants. Latter category contains 14 species: King Eider (*Somateria spectabilis*), Black Kite (*Milvus migrans*), Red-footed Falcon (*Falco vespertinus*), Merlin (*F. columbarius*), Avocet (*Recurvirostra avosetta*), Black-tailed Godwit (*Limosa limosa*), Razorbill (*Alca torda*), Black Guillemot (*Cepphus grylle*), Shore Lark (*Eremophila alpestris*), Red-throated Pipit (*Anthus cervinus*), Citrine Wagtail (*Motacilla citreola*), Ring Ouzel (*Turdus torquatus*), Greenish Warbler (*Phylloscopus trochiloides*) and Red-breasted Flycatcher (*Ficedula parva*). There are altogether 4 species of confirmed vagrants: (all observations confirmed by the Estonian Rarities Committee belonging to the Estonian Ornithological Society): Great White Egret (*Egretta alba*), Black-winged Stilt (*Himantopus himantopus*), Snowy Plover (*Charadrius alexandrinus nivosus*) (E. Rascall 21.09.1903 observed one individual according to Mank, 1974) and Wilson's Phalarope (*Phalaropus tricolor*). Additionally, two more rare species have been encountered in Paljassaare, however, have not been identified to the species. Yet, the Estonian Rarities Committee has recognized these encounters: Collared Pratincole (*Glareola pratincola*)

and Fulvous /Lesser Whistling Duck *Dendrocygna bicolor* / *javanica* belonging to category E (escaped captive bird).

Discussion

Even though Osmussaare and Paljassaare are rather similar in size (45.5 ha) as well as fragmentation there were fewer species registered in Osmussaare (35). Therefore, the number of breeding pairs remains higher (5.3-7.2 pairs/ha) when compared to Paljassaare. The composition of dominant species in both habitats turned out to be rather unconventional with the most numerous species being Chaffinch and followed by Common Whitethroat and Garden warbler. Also Willow Warbler and Common Rosefinch were listed among the six most numerous species.

Comparing the mean number of pairs breeding in reedbeds of Paljassaare with the number of pairs breeding in the urban area of Haapsalu (51.1 ha) might also be of interest (Valker 2003): respectively 12.52 and 18.98 pairs/ha. When excluding the most numerous species in these habitats, the Black-headed Gull, Paljassaare would moderately exceed Haapsalu - respectively 3.80 and 3.33 pairs/ha. However, significant similarities appeared when comparing the dominant species of these two habitats – 6 out of 7 most common species were the same - Black-headed Gull, Sedge Warbler, Mallard, Coot, Reed Bunting and Tufted Duck.

The period for obtaining a better overview of the bird fauna of Paljassaare has been too short. However, it is clear that the bird areas of Paljassaare need to be protected in order to maintain their current state. Even most of the military facilities need to be preserved as they provide shelter and breeding sites for local birds and are a part of the landscape. On the initiative of the Bird Club of Tallinn a management plan of Paljassaare will be prepared by the end of the current year and will be the basis for further protection activity. So far one observation tower has been established in cooperation with the Tallinn City Administration and is located right next to the path near a reedbed where humans do

not disturb birds. There is also one hiking trail going to be constructed in Paljassaare.

Materjale Paljassaare linnustikust

Käesolevas töös antakse ülevaade Harjumaal Tallinna piiridesse jääva Paljassaare poolsaare linnustikust. Vaatlusmaterjal pärineb aastatest 2001–2005, kuid on kasutatud ka mõningaid olemasolevaid andmeid varasemast ajast. 205 hektarilise vaatlusala tuumiku moodustab Natura 2000 linnuala. Kokku on Paljassaare poolsaarel registreeritud 206 linnuliiki: pesitsejaid 100, toitekülalisi koos pesitsejatega 177, läbirändajaid 171, talviseid esinejaid 58 ja eksikülalisi 20.

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