

A photograph of a small bird, likely a warbler, perched on a branch. The bird has a green body with a yellowish-brown stripe on its wing and a thin white line above its eye. The background is filled with out-of-focus branches and leaves in various shades of red, orange, and green, suggesting an autumn setting. The text is overlaid on the image in a white, sans-serif font.

**Autumn migration in Mehikoorma
15.9.-3.10.2012**

U.Paal

Introduction

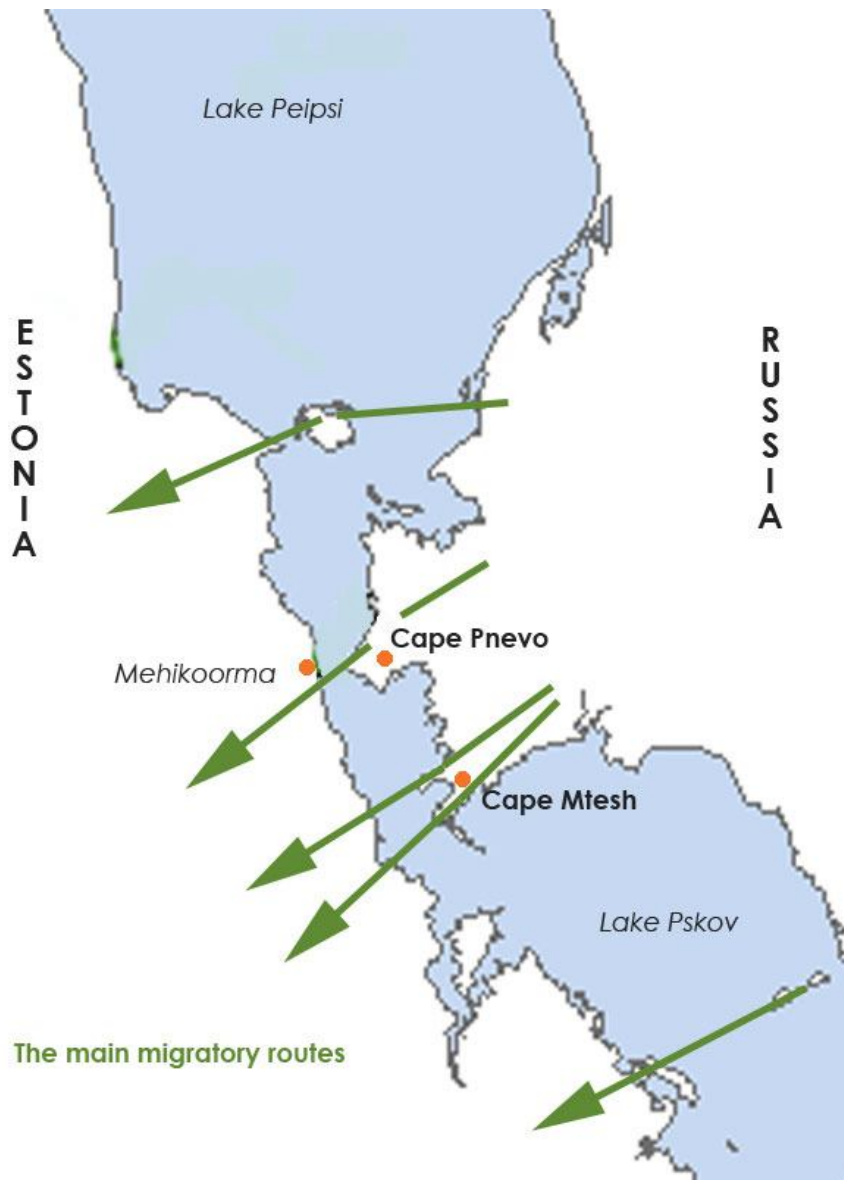
Lake Peipus is a transboundary lake between Estonia and Russia consisting of three parts laid in a south-northerly direction - Lake Lämmijärv connects Lake Pskov and Lake Peipsi.

This lake-system covers more than 3500 square kilometers and creates a fairly large migration barrier for landbirds heading in a southwesterly direction.



Mehikoorma village lies next to the narrowest part of Lake Lämmijärv which creates a migration bottleneck connecting Estonian and Russian coasts of the lake. This spot is probably the best site to see landbird mass-migration on the Estonian side of the lake. A little further south on the Russian side, Cape Mtesh may be as good concentration point as Cape Pnevno based on the older migration studies.

We hereby present (variable) available data on the aspect of the migration route between Cape Pnevno and Mehikoorma. The aim of this paper is to give an overview of the area and background data for planning more thorough research in the future.



A short history of ornithology in Mehikoorma and the eastern coast of Lake Lämmijärv

Lake Lämmijärv has been considered the best inland migration watchpoint in the Baltic countries for many years.

On the Russian side of Lake Lämmijärv and Lake Pskov the studies by Russian ornithologists were regular, starting from early 1950's and continuing today (no information to what extent though). The best source of information is the summary published by Meshkov in 1978 about counts from 1950's to 1970's. Meshkov noted that the two main migration routes followed Cape Pnevoo and Cape Mtesh. During the peak days, the migration flow was so intense that the front was about 2 km wide. The best daily counts (from both Pnevoo and Mtesh) for Chaffinch were 2 240 881 in 1961, 2 398 340 in 1966, 4 256 587 in 1967 and 1 877 294 in 1969. Daily peak counts for thrushes were as follows – 19 353 in 1960, 105 028 in 1967, 35 109 in 1973 and for Wood Pigeon 16 698 in 1964, 19 427 in 1969, 9 454 in 1972 and 16 663 in 1973

(Meshkov 1978). In another article Meshkov publishes data gathered from Cape Mtesh during 1959-1961. The most noteworthy sighting was a mass-migration of 7471 Black-throated Divers on 11-12.10.1959, illustrating that this lake-system is also a very important waterbird migration channel. During those 3 autumn fieldwork seasons they counted more than 4 million passerines (Meshkov 1963). Surprisingly, numbers of raptors were very low.

Pnevo Bird Observatory now also serves as a teaching facility for Pskov Pedagogical Institute.

Unfortunately, from the Estonian side, the area has been studied very sporadically and during last decades it has been almost forgotten by Estonian ornithologists and birdwatchers.

One of the first thorough autumn migration studies was done on the Russian side at Cape Pnevo by legendary Estonian ornithologist Heinrich Veroman in 1958 (15.9-15.10). He concluded that the coast of Lake Lämmijärv is the best place to see landbird mass-migration in Estonia and probably in the whole Baltics. During his study the best passage of migrants was 851 085 birds on 21st of September. Other massive passages occurred as follows:

23.9 – 10 610
24.9 – 449 884
26.9 – 12 585
29.9 – 162 236
30.9 – 44 686
1.10 – 14 516
3.10 – 12 151
4.10 – 11 774
10.10 – 10 989

On other days the passage was less intense and varied from 1130 to 6720 birds daily. In total he counted more than 1 643 000 birds, 99% of them passerines. Numbers of geese, divers and raptors stayed modest (Veromann 1961).

In Mehikoorma, the first migration counts were carried out in 1961 by Aino Kumari (no spectacular movements recorded) (Veromann 1963) and later by Urmas Kalla in 1992. Kalla carried out counts from the end of July until ice cover formation and he registered 107 species of birds, but didn't record any spectacular passage. This is probably due to the observation technique and poor optics. He noted large gathering of 5000 Coots in the end of September and night-roost of 1700 Sand Martins at the end of August though.

In following years, migration data from Mehikoorma is very random and sporadic. For example Aivar Leito has counted 240 staging Great Crested Grebes in 10.10.1998.

Most of the counts from both sides of the lake have been concentrating on autumn migration and data about spring migration is almost non-existent so it's worth mentioning that in the evening of 23.05.2003 Mauri Leivo and Seppo

Sarvanne observed 111 migrating Red-necked Phalaropes and in 14.5.2000 Seppo Hjerppe counted 130 migrating Black Terns here. So the place probably also channels spring migration to some extent and this still has to be studied.

A few more thorough observation days were done by the author and other Estonian birders in 2006, 2008, 2009 and during a longer period in 2011. Here are some random daily count summaries to illustrate the scale and quality of migration in Mehikoorma:

Day	English name	Code	Number	Observers	Comments
14.10.2006	Geese	Anser sp.	12510	U.Paal, R.Savisaar	only morning, mostly ANSALB
30.09.2011	Geese	Anser sp.	8075	U.Paal, M.Ots et al.	
1.10.2011	Barnacle Goose	BRALEU	488	U.Paal, M.Ots et al.	
1.10.2011	Brent Goose	BRABER	1029	U.Paal, M.Ots et al.	
30.09.2011	Eurasian Teal	ANACRE	480	U.Paal, M.Ots et al.	
14.10.2006	Long-tailed Duck	CLAHYE	460	U.Paal, R.Savisaar	
14.10.2006	Velvet Scoter	MELFUS	205	U.Paal, R.Savisaar	
1.10.2011	Red-throated Diver	GAVSTE	61	U.Paal, M.Ots et al.	
13.10.2011	Black-throated Diver	GAVARC	1134	U.Paal, M.Ots	
23.09.2011	Eurasian Marsh Harrier	CIRAER	9	U.Paal, M.Ots et al.	
24.09.2011	Eurasian Marsh Harrier	CIRAER	9	U.Paal, M.Ots et al.	
1.10.2011	Hen Harrier	CIRCYA	28	U.Paal, M.Ots et al.	
24.09.2011	Eurasian Sparrowhawk	ACCNIS	84	U.Paal, M.Ots et al.	
24.09.2011	Eurasian Hobby	FALSUB	44	U.Paal, M.Ots et al.	
1.10.2011	Common Crane	GRUGRU	221	U.Paal, M.Ots et al.	
30.09.2011	Common Wood Pigeon	COLPAL	1654	U.Paal, M.Ots et al.	
20.09.2009	Great Spot. Woodpecker	DENMAJ	11	U.Paal, M.Ots	
20.09.2009	Thrush sp.	Turdus	8158	U.Paal, M.Ots	Mostly TURPIL, morning count
20.09.2009	Eurasian Jay	GARGLA	2574	U.Paal, M.Ots	Morning count
26.09.2010	Eurasian Jay	GARGLA	4300	R.Rander	
4.10.2008	Black-billed Magpie	PICPIC	9	U.Paal	Determined flight in the migration flow
20.09.2009	Passerine sp.	Passeriformes	217000	U.Paal, M.Ots	Morning count

Geography and bird migration at Lake Lämmijärv

Migrating passerines are crossing the mainland in autumn in a large front and geographically there are no specific migration bottlenecks on Estonian territory, except the narrowest part in the middle of Lake Lämmijärv at the Estonian-Russian border. The eastern coast of the lake divides in two capes – Pnevo and Mtesh. Migration flow starting from Cape Pnevo can be counted both from the Russian side near the local border guard station and from the Estonian side at Mehikoorma. Cape Mtesh lies in the southern part of Lake Lämmijärv and migration can be counted here only from the Russian side as there are no good vantage points on the Estonian side.

Mehikoorma as an observatory

There are some important aspects when watching migration from Mehikoorma. As the strait between the two countries is about 2 km wide, the beginning of passerine migration route is very distant. Passerines are hard to see with only binoculars and have to be followed with a telescope. Jays, pigeons, wildfowl and other larger birds can be counted with binoculars. Identification against the light in morning hours is a hard task and most of the birds (at least passerines) are left unidentified. In very good light conditions we have managed to identify even Long-tailed Tits rising from the Russian side but such visibility is a rare treat. The best stakeout is probably the local lighthouse. The passage of passerines can be so massive in peak days that counting alone can be very exhausting. It's sensible to have at least two observers and a writer.

Counting depends very much on the variable light conditions as you have to count the birds against the light. The best visibility is with clear sky without heat haze when spotting passerine flocks is the easiest. Clouds make difficult background for spotting birds. Mist can hamper the operation severely. Migration often carries on even during rainy days and might even bring birds lower (e.g. Wood Pigeons). As it is an inland site, the strong wind rarely causes problems. Actually it's favorable, as migration intensity is better in windy days, especially with headwind (SW-SE directions) which concentrates the migration flow around the tip of Cape Pnevno. This was also noted by Meshkov in his studies.

Landbirds (passerines etc.)

Most of the landbirds head up from Cape Pnevno on the Russian side and head in a SW direction gaining height and often disappearing in the sky. The stronger the wind, the better the migration flow concentrates around the Russian border-guard station. During southerly winds some crossing birds land around the lighthouse area (jays, tits). In other wind conditions most of the birds cross the lake in the southern part on the village and there is a better possibility to identify more passerines, but the overview of the migration flow may be poorer here.

Waterbirds

Wildfowl and waders can move both to the south or north and there is no clear direction pattern in autumn. Divers usually pass the strait very high and can easily go unnoticed. Waders have been present in low numbers as all the studies have been done outside the main wader migration periods.

Raptors

Raptors generally follow the same route as other landbirds, heading up from Cape Pnevno and continuing to the SW.

The study of autumn 2012

Material and methods

The first exploratory count was done on 31.8, but regular counts were carried out from 15.9 until 4.10. The main focus was passerine migration but all other species were counted as well. All the daylight was used if weather allowed and if migration intensity continued markedly. Only 24.9 was without any observation and 23.9 and 4.10 counts remained very short due harsh weather (mist, rain). In total 155 hours and 26 minutes were spent during 19 days of counting.

Although this wasn't the main focus, casual ringing was also done with 1-4 mistnets. In total 200+ birds were ringed.

Observers were Uku Paal (19 days), Margus Ots (10 & all the ringing activity), Mariliis Märtson (3), Mihkel Metslaid (2), Lauri Mällo (1), Paul Hunt (1), Riho Marja (1), Liis Keerberg (1).

Results

During the counting session the wind directions (registered at 8:00) were mainly from SW (6 days), S (5 days) and SE (4 days). Wind speed varied from 0-8 m/s (average 3,1 m/s). As Veroman and Meshkov have noted previously, it's hard to find good correlation between wind parameters and migration intensity. Probably the wind speed at an inland site is usually so low that it doesn't have that much effect on the migration flow. We noted that headwinds concentrate birdflow much better near the tip of Cape Pnevo (as expected) and made counting easier.

Species overviews. 106 species were recorded in active day-migration (4 125 908 individuals). In total 139 species were seen in the surroundings of Mehikoorma watchpoint. The number could be much higher if the counting was started two weeks earlier during the main passage of waders and insect-eating passerines.

Mute Swan (*Cygnus olor*). Only 4 birds noted on 26.9.

Whooper Swan (*Cygnus cygnus*). Whooper Swan migration was slowly starting with 28 birds on 29.9 and 49 birds on 1.10. A total of 85 were seen.

Geese (*Anser sp.*) Geese migration wasn't as good as was expected. Seems that this year most of the geese followed the northern coast of Estonia as good numbers were noted elsewhere. In total 5763 unidentified geese were seen. The best day was 1.10 when more than 1600 geese were recorded.

Bean Goose (*Anser fabalis*). A total of 1469 Bean Geese were identified, the best day being 1.10 when 524 were seen. No subspecific identifications were made.

Greater White-fronted Goose (*Anser albifrons*). Only 37 were identified meaning that the peak migration wasn't starting yet or most of the whitefronts followed the northerly flyway.

Barnacle Goose (*Branta leucopsis*). 9 birds were seen, Peak day on 25.0 when 7 birds recorded.

Brent Goose (*Branta bernicla*). Numbers remained much lower comparing to 2011. As typical for this species, the migration concentrates to very short periods. The species was recorded only in two days – 148 on 26.9 and 12 birds on 1.10, all heading north as usual for Brent Geese here.

Eurasian Wigeon (*Anas penelope*). A total of 1689 were seen. Peak days were 17.9 (315 birds) and 22.9 (456 birds).

Gadwall (*Anas strepera*). Only 4 birds recorded on 20.9. 1-3 birds lingered around the watchpoint for a few days.

Eurasian Teal (*Anas crecca*). A total of 23 were seen, with peak migration expected later. Best day – 9 birds on 17.9

Mallard (*Anas platyrhynchos*). A total of 38 birds were seen. Peak day – 23 birds on 27.9. 10-25 birds stationary daily.

Northern Pintail (*Anas acuta*). A total of 98 were seen with peak migration on 26.9 when 44 birds were migrating.

Northern Shoveler (*Anas clypeata*). A total of 63 were seen. Peak day - 14 birds on 29.9.

Common Pochard (*Aythya ferina*). A total of 9 were seen. Peak day - 5 birds on 27.9.

Tufted Duck (*Aythya fuligula*). A total of 50 were seen. Peak day - 13 birds on 27.9.

Greater Scaup (*Aythya marila*). A total of 636 were seen. Peak day - 391 birds on 26.9. Also 172 un-identified *Aythya*'s were seen, with peak count 89 birds seen also on 26.9. Presumably most of these birds were Greater Scaup. This lake-system is an important stop-over site for this species.

Common Scoter (*Melanitta nigra*). Only 2 birds recorded on 27.9.

Velvet Scoter (*Melanitta fusca*). A total of 28 were seen. Peak day - 16 birds on 27.9.

Common Goldeneye (*Bucephala clangula*). Only 9 birds were logged as migrating. Several stationary birds daily around the watchpoint.

Smew (*Mergellus albellus*). Too early for the main migration and only 2 birds were seen on 27.9.

Red-breasted Merganser (*Mergus serrator*). Only 9 were seen on 30.9.

Goosander (*Mergus merganser*). A total of 15 were seen. Peak day - 4 birds on 26.9.

Black Grouse (*Tetrao tetrix*). One of the biggest surprises during the count. A total of 19 were seen. Peak days - 8 birds on 22.9, and another 8 on 29.9. All the birds crossed the lake in SW direction. Often several lingering birds were seen on Russian side, which didn't cross the lake (or we didn't notice).

Divers (*Gavia sp.*) In total 8 unidentified divers were seen. Low numbers were seen as expected as the main migration season comes later. As noted in earlier years, divers can pass the strait very high and often in bad weather when visibility is compromised. When concentrating on passerine migration it's easy to miss high-flying waterbird flocks.

Red-throated Diver (*Gavia stellata*). Only one was identified on 25.9.

Black-throated Diver (*Gavia arctica*). A total of 281 were seen. Peak day 174 birds on 26.9 was a surprisingly early start.

Great Crested Grebe (*Podiceps cristatus*). A total of 40 birds were logged as migrating. Stationary lingering birds can also fly short distances, causing confusion. Notable number of 50 stationary birds were seen on 30.09.

Great Cormorant (*Phalacrocorax carbo*). A total of 260 birds were logged as migrating. Stationary lingering birds are confusing the picture. A large flock of local birds (maximum 1400) was seen daily on first days and is a remarkable number on inland waters.

Grey Heron (*Ardea cinerea*). Only 2 birds were logged as migrants. Several stationary birds were seen daily.

Great White Egret (*Egretta alba*). Up to 9 birds daily around the watchpoint but no migrating birds were recorded.

European Honey-Buzzard (*Pernis apivorus*). Only 1 bird was seen on 16.9.

Eurasian Marsh Harrier (*Circus aeruginosus*). A total of 28 were seen. Peak days - 6 birds on 15.9 and 18.9.

Hen Harrier (*Circus cyaneus*). A total of 53 were seen. Peak day - 11 birds on 20.9.

Montagu's Harrier (*Circus pygargus*). Main migration period was probably over. A total of 3 were seen.

Northern Goshawk (*Accipiter gentilis*). A total of 5 were seen.

Eurasian Sparrowhawk (*Accipiter nisus*). A total of 798 were seen. Peak days - 105 birds on 21.9 and 138 on 2.10. Good passage was noted also on Kihnu island during 2.10.

Common Buzzard (*Buteo buteo*). A total of 279 (+ 8 *Buteo* sp.) were seen. Peak days 33 on 22.9 and 26 on 28.9.

Rough-legged Buzzard (*Buteo lagopus*). A total of 45 were seen. Peak day of 10 birds on 15.9 was unexpectedly early. Mehikoorma is probably the best place to see Rough-legged Buzzard autumn migration in Estonia.

Osprey (*Pandion haliaetus*). Only 2 birds were logged. Lone local birds were seen almost daily.

Common Kestrel (*Falco tinnunculus*). A total of 8 were seen.

Merlin (*Falco columbarius*). A total of 18 were seen, up to 3 birds per day. Both Hobbys and Merlins are constantly chasing passerines around the migration route and it's often difficult to determine are the birds stationary or migrating.

Eurasian Hobby (*Falco subbuteo*). A total of 47 were seen. Peak days 14 on 15.9 and 23 on 16.9.

Peregrine Falcon (*Falco peregrinus*). 1-2 birds daily lingering around the watchpoint and 2 birds counted migrating.

Common Crane (*Grus grus*). A total of 15 were seen. We presume that Mehikoorma is not the best place to see Common Crane migration.

European Golden Plover (*Pluvialis apricaria*). A total of 36 were seen. Peak day 27 birds on 19.9.

Grey Plover (*Pluvialis squatarola*). A flock of 5 birds seen on 19.9.

Common Ringed Plover (*Charadrius hiaticula*). 3 local birds seen on 31.8, outside the counting session.

Northern Lapwing (*Vanellus vanellus*). Only 1 seen on 29.9. Late autumn migration season starts later.

Red Knot (*Calidris canutus*). A flock of 7 birds seen on 26.9.

Dunlin (*Calidris alpina*). Up to 4 local birds were seen, but no migrating flocks.

Ruff (*Philomachus pugnax*). A total of 3 were seen.

Common Snipe (*Gallinago gallinago*). A total of 2 migrating on 3.10, plus some stationary birds seen.

Eurasian Curlew (*Numenius arquata*). A total of 2 late migrants seen on 17.9 and 18.9.

Spotted Redshank (*Tringa erythropus*). 1 bird on 18.9.

Common Greenshank (*Tringa nebularia*). One bird seen on 15.9.

Black-headed Gull (*Larus ridibundus*). Up to 300 local birds seen daily. No migrating birds. 3 Polish colour-rings were read near the lighthouse.

Mew Gull (*Larus canus*). Up to 100 local birds seen daily. No migrating birds.

Lesser Black-backed Gull (*Larus fuscus fuscus*). A total of 8 birds. Peak day – 5 birds on 26.9.

Herring Gull (*Larus argentatus*). Up to 20 local birds seen daily. No migrating birds.

Caspian Gull (*Larus cachinnans*). 1 1st cy bird photographed near the watchpoint on 28.9. 3rd record for Tartu county.

Great Black-backed Gull (*Larus marinus*). 1 bird on 21.9 and 2 on 30.9.

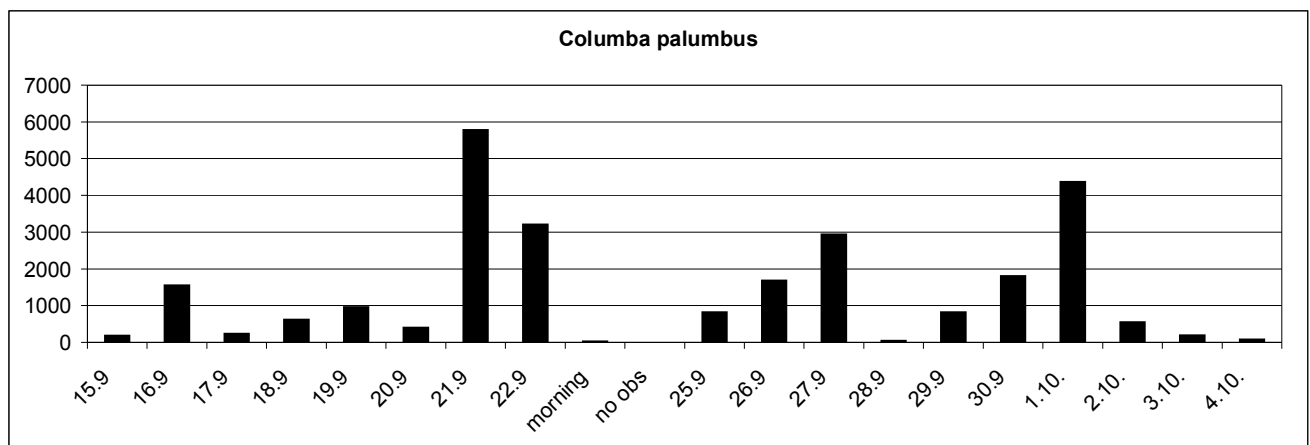
Little Gull (*Hydrocoloeus minutus*). A total of 6 birds and few stationary birds daily. Mehikoorma could be good place to see nice Little Gull migration later in autumn.

Common Tern (*Sterna hirundo*). 2 birds on 17.9 and 2 “commic” terns on 18.9.

Black Tern (*Chlidonias niger*). 2 late migrants on 17.9. It’s worth mentioning that 321 individuals were migrating here on 5.8.12 (Hannes Pehlak).

Feral Pigeon (*Columba livia*). 1 bird in a flock of Wood Pigeons on 27.9. Very unexpected find!

Common Wood Pigeon (*Columba palumbus*). A total of 26 105 were counted. Presumably many birds came later after the counting sessions. Peak days were 21.9 with 5774 birds and 1.10 with 4361 birds.



Stock Pigeon (*Columba oenas*). A total of 62 birds were seen. Peak days – 12 birds on 21.9 and 11 birds on 27.9.

European Turtle Dove (*Streptopelia turtur*). 1 bird on 16.9.

Common Kingfisher (*Alcedo atthis*). 1 local bird on 22.9.

Grey-headed Woodpecker (*Picus canus*). 1 male daily around the watchpoint. No migrating birds were seen.

Black Woodpecker (*Dryocopus martius*). A total of 10 birds crossed the strait. Peak day – 3 birds on 21.9.

Great Spotted Woodpecker (*Dendrocopos major*). A total of 49 were seen + 7 un-identified spotted woodpeckers. Peak day – 10 birds on 15.9.

Middle Spotted Woodpecker (*Dendrocopos medius*). 1 local bird around the lighthouse 3.-4.10. No migrating birds were seen.

White-backed Woodpecker (*Dendrocopos leucotos*). A total of 7 birds were seen migrating plus 1-2 local birds daily in the surroundings of watchpoint. Peak day – 3 birds on 22.9. White-backed Woodpeckers were clearly on the move in the whole country during the autumn as 4 birds were seen even on Kihnu island where the species is very rare.

Lesser Spotted Woodpecker (*Dendrocopos minor*). A total of 17 were seen. Peak day – 5 birds on 16.9. As it is a fairly small bird, probably many went undetected. Lesser Spotted Woodpeckers had best invasion ever recorded on western coast this autumn.

Wood Lark (*Lullula arborea*). 2 birds on 1.10.

Sky Lark (*Alauda arvensis*). A total of 68 were seen. Peak day – 25 birds on 27.9.

Sand Martin (*Riparia riparia*). 1 local bird on 16.9. No migrating birds were seen.

Barn Swallow (*Hirundo rustica*). A total of 1212 were seen with peak migration already over. Peaks day – 425 on 15.9. Roost of several hundreds was nearby and it was difficult to separate local birds from migrants.

House Martin (*Delichin urbicum*). Up to 5 local birds seen. No migrating birds were seen.

Tree Pipit (*Anthus trivialis*). Only 3 were noted.

Meadow Pipit (*Anthus pratensis*). A total of 441 were seen. Peak day – 113 on 1.10.

White Wagtail (*Motacilla alba alba*). A total of 454 were seen. Peak days – 205 on 16.9 and 74 on 20.9. Also 10-30 stationary birds daily.

Yellow Wagtail (*Motacilla flava*). A total of 14 were seen. Peak day – 5 on 21.9. An interesting Yellow Wagtail ssp. was seen and heard on 25.9. The bird was most likely Black-headed Wagtail or Yellow Wagtail of eastern origin based on the contact call and overall grey colouration.

Bohemian Waxwing (*Bombycilla garrulous*). 10 birds were seen on 4.10. Migration was just starting and probably good migration was missed as the species was very numerous in the whole country in late autumn.

Winter Wren (*Troglodytes troglodytes*). Several local birds daily with maximum 7 on 3.10.

Hedge Accentor (*Prunella modularis*). A total of 17 were seen. Peak day – 8 birds on 20.9.

European Robin (*Erithacus rubecula*). Several local birds daily with maximum 20 on 3.10.

Bluethroat (*Luscinia svecica*). 1 local bird on 18.9.

Black Redstart (*Phoenicurus ochruros*). Up to 4 local birds daily. One ringed bird stayed in the area during the whole session.

Common Redstart (*Phoenicurus phoenicurus*). 4 local birds on 15.9 and 1 bird on 23.9.

Northern Wheatear (*Oenanthe oenanthe*). Up to 2 local birds daily.

Thrushes (*Turdus sp.*). A total of 8137 un-identified thrushes plus 2087 small thrushes (Song/Redwing) were seen. Redwings probably hadn't started yet as the species was very rare during the session.

Common Blackbird (*Turdus merula*). A total of 4 were identified. 5-10 local birds daily.

Fieldfare (*Turdus pilaris*). A total of 1332 were seen. Peak day 410 on 27.9. Too early for peak migration.

Mistle Thrush (*Turdus viscivorus*). A total of 18 were seen, maximum 5 birds per day.

Song Thrush (*Turdus philomelos*). A total of 53 were seen. Peak day – 31 birds on 3.10 when active night migration was noted (21 birds in 15 minutes).

Redwing (*Turdus iliacus*). Only 2 birds were recorded.

Sedge Warbler (*Acrocephalus schoenobaenus*). Only one local bird on 23.9.

Eurasian Reed Warbler (*Acrocephalus scirpaceus*). One local bird on 16.9 and 18.9.

Great Reed Warbler (*Acrocephalus arundinaceus*). One late bird on 16.9.

Lesser Whitethroat (*Sylvia curruca*). One ringed on 23.9.

Blackcap (*Sylvia atricapilla*). Only one local bird on 20.9.

Yellow-browed Warbler (*Phylloscopus inornatus*). One bird photographed on 23.9 and another on 3.10. First inland records for Estonia and new species for Tartu county!

Common Chiffchaff (*Phylloscopus collybita*). Tens of local birds daily with peak day of 70 birds on 20.9.

Willow Warbler (*Phylloscopus trochilus*). 5 local birds seen with maximum of 2 on 22.9.

Goldcrest (*Regulus regulus*). First birds started on 18.9 and peak day was on 3.10 when 50 were noted.

Spotted Flycatcher (*Muscicapa striata*). One local bird on 15.-16.9.

Red-breasted Flycatcher (*Ficedula parva*). One local bird on 15.-17.9.

Long-tailed Tit (*Aegithalos caudatus*). A total of 502 were seen. Peak days – 89 on 30.9 and 238 on 1.10. Good irruption was noted on western coast (Kabli, Sörve säär) as well.

Tits (*Parus sp.*). A total of 3350 un-identified tits were seen, but probably thousands went unnoticed due distance.

Marsh Tit (*Parus palustris*). 2 birds noted migrating on 1.10. Few local birds daily.

Willow Tit (*Parus montanus*). A total of 15 were seen. Peak day – 5 birds on 29.9.

Coal Tit (*Parus ater*). A total of 189 were seen. Peak day – 36 birds on 1.10.

Blue Tit (*Parus caeruleus*). A total of 1999 were seen. Peak days – 300 on 21.9 and 400 on 28.9.

Great Tit (*Parus major*). A total of 700 were seen. Peak day – 335 on 21.9.

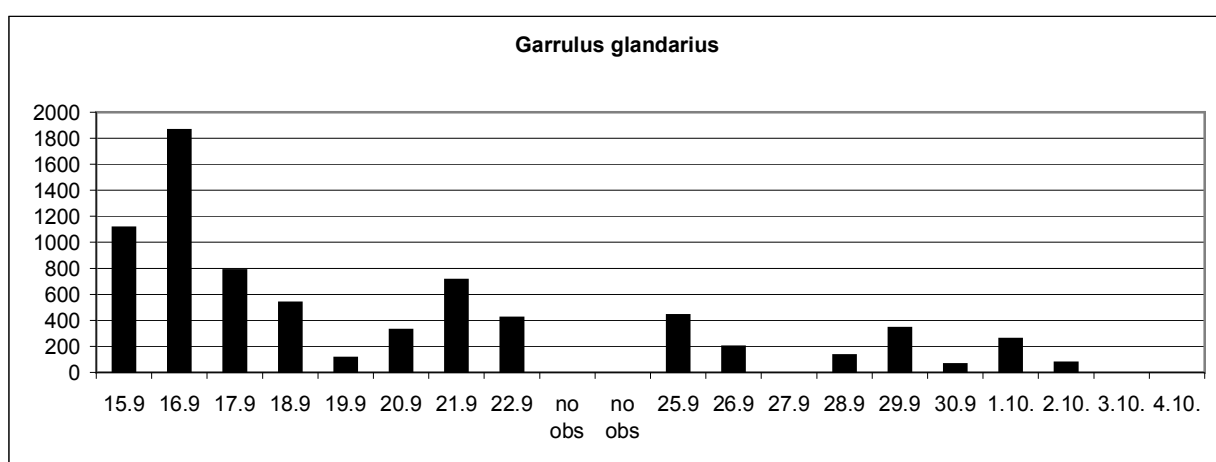
Crested Tit (*Parus cristatus*). 1 bird seen on 24.9. Obviously a migrating bird.

Wood Nuthatch (*Sitta europaea*). Up to 5 local birds daily in the surroundings. Few ringed birds disappeared in the next days so there was clearly some migratory movement of Nuthatches.

Eurasian Treecreeper (*Certhia familiaris*). Few birds daily with maximum of 4 on 3.10. Some birds seen in active migration.

Eurasian Penduline Tit (*Remiz pendulinus*). A total of 18 were seen. Peak day – 9 birds on 16.9. Also a few local birds were noted.

Eurasian Jay (*Garrulus glandarius*). A total of 7360 were seen. Clear peak on the beginning of the session, so many good days were probably missed. Peak days – 1113 on 15.9 and 1861 on 16.9.



Black-billed Magpie (*Pica pica*). At least 21 crossed the strait. Peak day – 9 birds on 16.9. Also up to 12 local bird seen daily.

Spotted Nutcracker (*Nucifraga caryocatactes*). A total of 5 were seen, with maximum 2 per day.

Eurasian Jackdaw (*Corvus monedula*). A total of 659 were recorded as migrating birds. Peak day – 96 on 1.10. Peak migration might be expected later. Very confusing species (and other corvids as well) as some birds crossed the strait in the NE direction. Tens of local birds daily in the Mehikoorma village.

Rook (*Corvus frugilegus*). A total of 25 were seen. Peak day – 11 on 3.10. Few dozen daily in the Mehikoorma village.

Hooded Crow (*Corvus corone cornix*). A total of 231 were seen migrating. Peak day – 95 on 15.9.

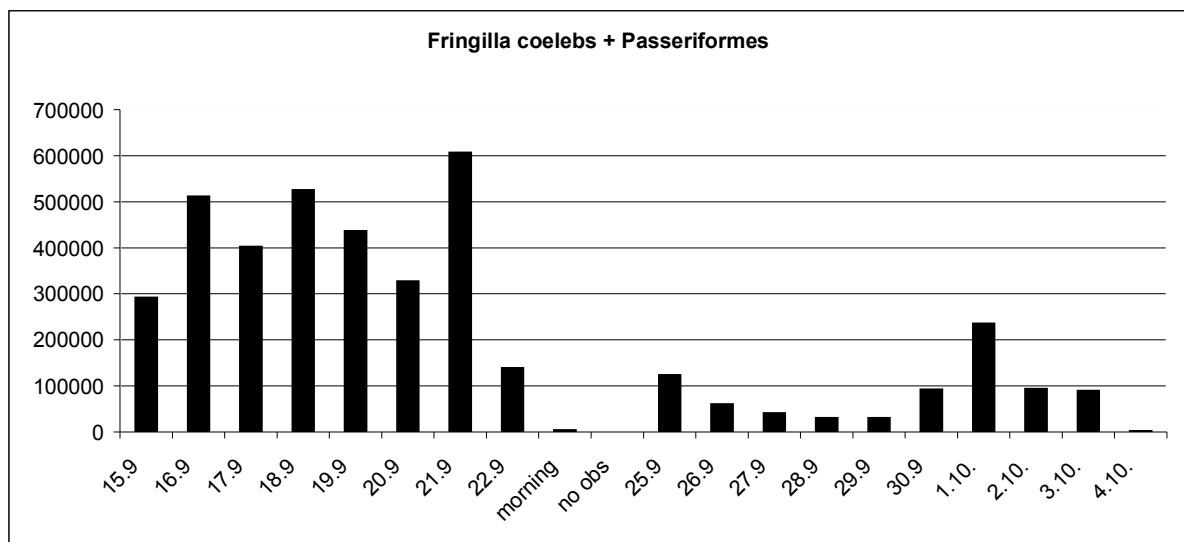
Common Raven (*Corvus corax*). A total of 260 were seen. Peak day – 70 on 21.9. Probably one of the best migration of Ravens ever recorded in Estonia.

Common Starling (*Sturnus vulgaris*). A total of 1598 were seen. Peak day – 278 on 27.9. Large night roost was nearby.

House Sparros (*Passer domesticus*). Few birds in the village.

Eurasian Tree Sparrow (*Passer montanus*). Only one was recorded as migrating on 18.9. Few dozens in the village daily.

Chaffinch (*Fringilla coelebs*) and unidentified passerines (*Passeriformes*). A total of 4 032 500 unidentified passerines were counted, large percentage (approx 90%) of them presumably Chaffinch. Best day was 606 000 on 21.9. All Chaffinches are included in Passeriformes as they made up the bulk of the mass and we didn't try to make separate Chaffinch-identifications. The ratio between Chaffinches and Bramblings was also estimated on nearby fields where thousands of birds stopped. The Brambling migration was just starting during the last days of our study, but still Chaffinches made up 90% birds in the flocks.



Brambling (*Fringilla montifringilla*). 169 were identified. Peak day – 45 on 1.10.

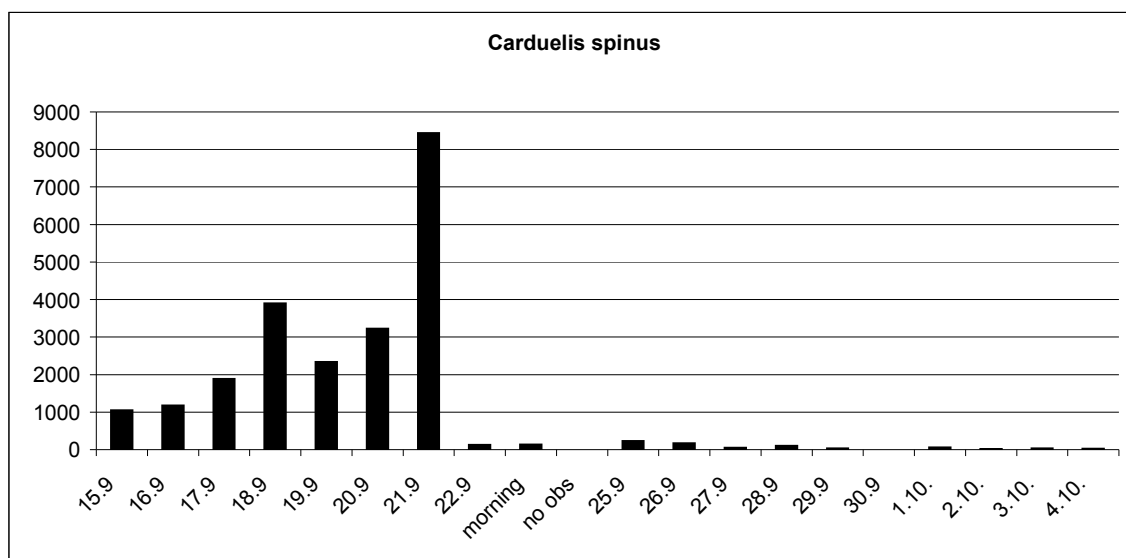
European Serin (*Serinus serinus*). One seen on 29.9.

European Greenfinch (*Carduelis chloris*). Only 5 were seen as the migration peaks much later.

European Goldfinch (*Carduelis carduelis*). Only 20 were seen as the migration peaks much later.

Common Redpoll (*Carduelis flammea*). Migration was slowly starting during the last days of our study. A total of 52 were seen. Peaks day – 20 on 2.10.

Eurasian Siskin (*Carduelis spinus*). A total of 22 839 were seen and probably many thousands were missed due identification difficulties. Peak day – 8430 on 21.9.



Common Linnet (*Carduelis cannabina*). Only 53 were seen as the migration peaks much later.

Crossbill sp. (*Loxia sp.*). Only 3 seen on 1.10. Very poor year for Crossbills in the region.

Common Bullfinch (*Pyrrhula pyrrhula*). Only 12 were seen as the migration peaks much later.

Hawfinch (*Coccothraustes coccothraustes*). A total of 6 were seen. Peak day – 3 on 1.10. Few local birds daily in the village.

Yellowhammer (*Emberiza citrinella*). A total of 81 were seen. Peak day – 31 on 29.9. The migration of Yellowhammers peaks much later.

Reed Bunting (*Emberiza schoeniclus*). A total of 113 were seen. Peak day – 30 on 1.10.

Discussion

The shortcomings of this study are that the percentage of identified passerines remains extremely low but the numbers give a good overview of the scale of the migration occurring in this area. Also the study period was too short and several peak migrations of earlier (waders, swallows) and later (seed-eating passerines, divers, waterfowl, Little Gull) migrants weren't covered. As this was a volunteer project with no financial support, the counting wasn't done too methodically but mainly for enjoying the aesthetics of bird migration while trying to collect as correct data as possible in the process.

In future studies from the Estonian side, longer periods should be covered preferably with a team of 3 people, especially during the peak days of passerine migration. Concurrent counts from the Russian side at Cape Pnevo could assist in identification of smaller passerines and to estimate the effectiveness of Mehikoorma as a migration watchpoint.

Conclusion

The strait between Cape Pnevo and Mehikoorma still remains an extremely important migration bottleneck for passerines, raptors and for waterfowl to a lesser extent.

Future windfarm construction projects can negatively affect the safe passage of birds over (passerines, raptors) and on (waterbirds) Lake Lämmijärv especially in the narrowest strait between Estonia and Russia where migratory birds pass in millions.

Mehikoorma is an excellent place to estimate occurring woodland bird influxes (e.g. woodpeckers, Long-tailed Tit, Eurasian Jay, Siskin, Mealy Redpoll etc.). The area could be used as an effective ringing station and for training bird identification and counting. As the light conditions are compromised, the age identifications of waterfowl/raptors are difficult to establish and so the breeding success estimates are hard to study here.

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