**Explanations to:**

**Lõhmus, A. 2024. Spatial dataset of breeding bird territories in East-Estonian forested landscapes, 2020-2022. doi: 10.5281/zenodo.12747762**

The spatial data is presented as four map layers, organized in three zipped folders. The data have been created using MapInfo Professional Version 10.5 in L-EST97 (EUREF89) projection, with one alternative format provided along (ESRI Shape File for polygons) or .csv (for point objects).

**Folder 1: Bird\_area\_borders.zip**

Layer 1: Bird\_area

Includes the polygons of three plots (A, B, C) as used and reported in publications by Lõhmus (2022; 2023a) and Yatsiuk and Lõhmus (2024). *Modifications*:a slight change in borders compared to Lõhmus (2023b) where Plot C includes small adjacent areas (detectable on Fig. 1 in the original publication). In turn, the preliminary publication of first-year results (Lõhmus, 2020) contained marginally smaller area of Plot A, with later addition in the northern corner.

Data fields:

Plot: plot name

Year: study years

**Folder 2**: **Birddata.zip**

Layer 2: Birddata

Includes 5397 data points, which depict (presumable) territory centres (“pairs”) of breeding birds in the study plots and their immediate vicinity (as recorded from mapping the plots). Nine records include point observations of 2 or 3 pairs, denoted by “\_2” and “\_3” after the species name code, respectively; the species under question are APUAPU, COLLIV, DELURB and TETURO. All the other data points denote a single pair.

Data fields:

SPECIES: standard 6-letter abbreviation of the species’ Latin name

ACCURACY: location accuracy in three levels: 0 = low accuracy (either few or diffuse observations attributable to this pair); 1 = standard territory-mapping accuracy; 2 = high accuracy (nest or obvious nest deduced by aggressive or extremely agitated adults or poorly moving young).

YEAR: study year

LAT and LONG: co-ordinates as degrees with decimals. In one species, *Tetrao urogallus* (TETURO), the co-ordinates have been rounded to the accuracy of hundreds of m since the exact locations of this species cannot be made public according to the Estonian Nature Conservation Act.

Pair\_ID: unique integer code for the pair, for the purpose of possible requests or corrections regarding particular data points.

**Folder 3: Bird\_woodland\_data.zip**

Background environmental data, specifically of local woodland characteristics, to enhance spatial analysis of the bird data.

Layer 4: Bird\_forestdata

Includes polygons of 960 forest stands, which are delineated based on relatively homogeneous tree-layer structure and constitute units of management in Estonia. Thus, these are areas dominated by forest trees (excluding scrub; see Layer 5) or, if temporarily lacking trees, are managed for silviculture (e.g., recently cut or afforested areas). Of these, 852 forest stands (encompassing 1224.5 ha) lie wholly or partly within the study area borders, while the rest are adjacent to borders where additional bird observations have been made.

The layer has been compiled by the author based on the stand borders and descriptions available in the Estonian Forest Registry (https://register.metsad.ee/#/) as of August 2021, with additions regarding formally undescribed forests according to Kaasik et al. (2023) and original fieldwork. The descriptions have been critically checked against historical topographic maps and aerial photographs (provider: Estonian Land Board). All descriptions refer to the situation at the start of the study (2020) and any management-related changes during the study have been specified according to the fieldwork.

Data fields:

Type: Broad forest type based on current tree-species composition:

Origin: origin of the closed-canopy or (in case of temporal cutovers) early successional stand:

Aff\_A – natural afforestation, last long-term open condition arable land

Aff\_B – natural afforestation, last long-term open condition bog\*

Aff\_F – natural afforestation, last long-term open condition natural fen\*

Aff\_M – natural afforestation, last long-term open condition semi-natural meadow

Aff\_W – natural afforestation, last long-term open condition wooded meadow

Cut\_N – cutover, natural regeneration

Cut\_P – cutover, ≥80% cultivated

Cut\_S – cutover, partly (20%-79%) cultivated

Plant – ≥20% planted on former arable land or meadow

\* both can include some areas opened by traditional human use, e.g for grazing or fuelwood collection; however, these areas are not a regrowth on timber harvest areas

OrigYear: Refers to the presumed initiation of the current closed-canopy stand, even where tree cohorts have been replaced either naturally or through partial harvests. The forest registry data have been double-checked against topographic maps and aerial photos, and corrected where the latter convincingly identified errors in the registry. In afforested bogs (Aff\_B) the year refers to the mean age of the dominant tree layer, while the actual dynamics and causes of the canopy closure remain unclear. According to historical maps, typical dynamics in the small bogs of the study area include a denser stand developed on a naturally sparser wooded bog, which is increasingly likely in more productive conditions (smaller stand productivity values) and near ditches. At least in the first half of the 20th century, mire conditions may have been locally further opened by human use or other influences (e.g. peat mining in the Kripsi bog; apparent grazing in Kängä bog).

SiteType: forest site type according to the Estonian classification (Lõhmus, 1984):

AN – *Filipendula* (eutrophic paludifying group)

JK – *Oxalis* (mesotrophic group)

JM – *Oxalis-Myrtillus* (dry boreal group)

JO – drained *Oxalis* peatland (drained-peatland group)

JP – *Oxalis*-*Rhodococcum* (dry boreal group)

KM – *Polytrichum*-*Myrtillus* (dry boreal group)

KR – *Polytrichum* (oligotrophic paludifying group)

KS – (undescribed) drained peatland

LD – mobile-water swamp (swamps)

MD – stagnant-water swamp (swamps)

MO – drained *Myrtillus* peatland (drained-peatland group)

MS – *Myrtillus* (dry boreal group)

ND – *Aegopodium* (eutrophic group)

PH – *Rhodococcum* (dry boreal group)

RB – ombrotrophic bog (bogs)

SJ – *Dryopteris* (eutrophic group)

SM – *Cladina* (heaths)

SN – *Vaccinium uliginosum* (oligotrophic paludifying group)

SS – mixotrophic bog (bogs)

TA – *Carex-Filipendula* (eutrophic paludifying group)

TR – *Carex* (eutrophic paludifying group).

Productivity: six-class division according to the Estonian system (Lõhmus, 1984), from 0 (or 1A; most productive) to 6 (or 5A; least productive).

Ownership: forest ownership as of 2020: E – private-owned; R – state-owned.

LastThinn: year of the last known thinning in the stand (including precommercial thinnings), referring to the first nesting season as thinned (e.g, thinning in autumn 2019 is coded as 2020).

Other cut: *CC* – clear-cut during the study period; the year refers to the first census year as clear-cut; *SC* – sanitary cutting (partial removal of dead or damaged trees); the year refers to the first census year after that impact; *singletree* – occasional removal of single trees for firewood, may include repeated entries.

Layer 5: Bird\_scrubarea

Includes polygons of deciduous woodland that do not qualify as forest stands. In the study area, most contiguous scrub is formed by deciduous trees: willow thickets in wet areas, overgrown arable land or as deciduous scrub (willows and *Prunus padus*) along roads. These patches have only been incompletely mapped here, based on two sources: included are all polygons outside forest stands that were obtained either as (i) the ‘scrub’ (“poosastik”) layer in the Estonian Topographic Database (provider: Estonian Land Board; as of 2015), or (ii) by reclassifying forest stands (as reported by Kaasik et al., 2023) based on field-checked species composition by the author during this study.

**References**

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