# POPULATION OF AQUATIC WARBLER IN BIEBRZA VALLEY, NE POLAND

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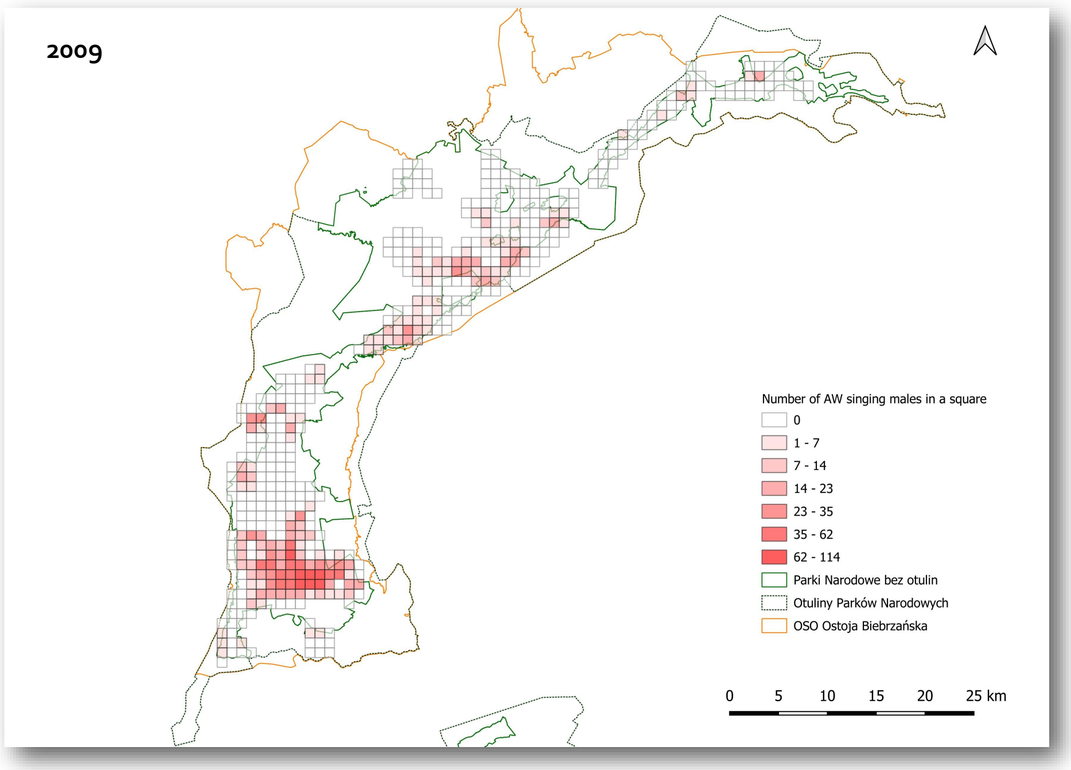
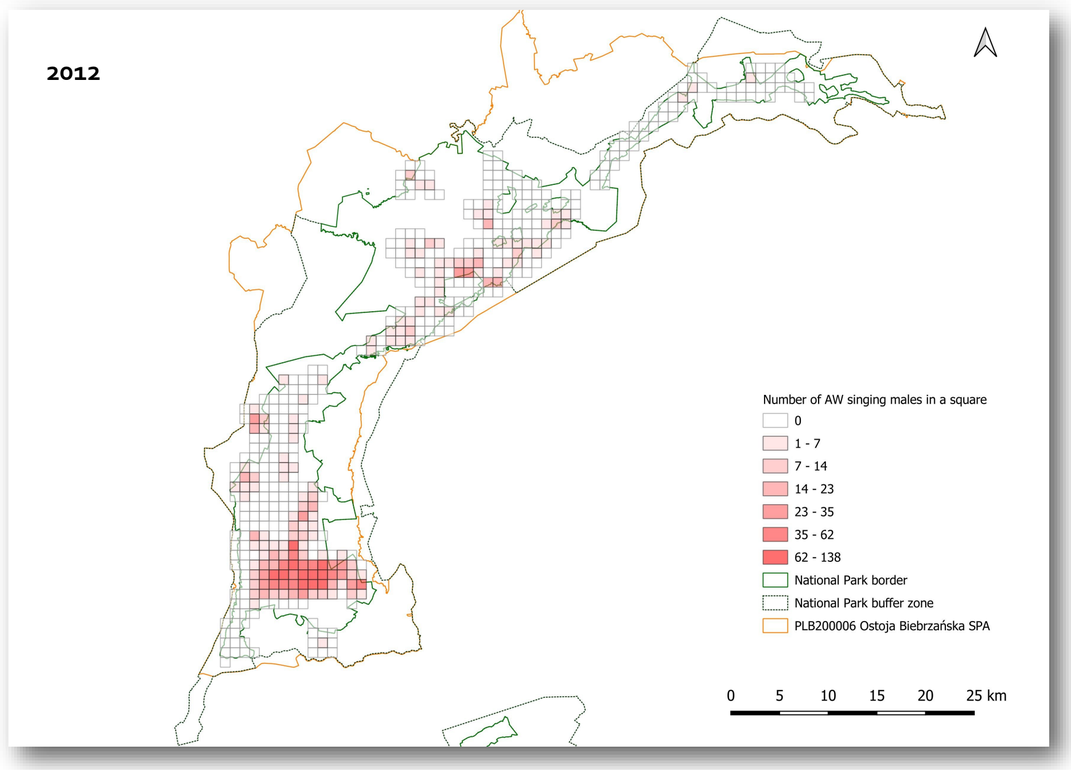
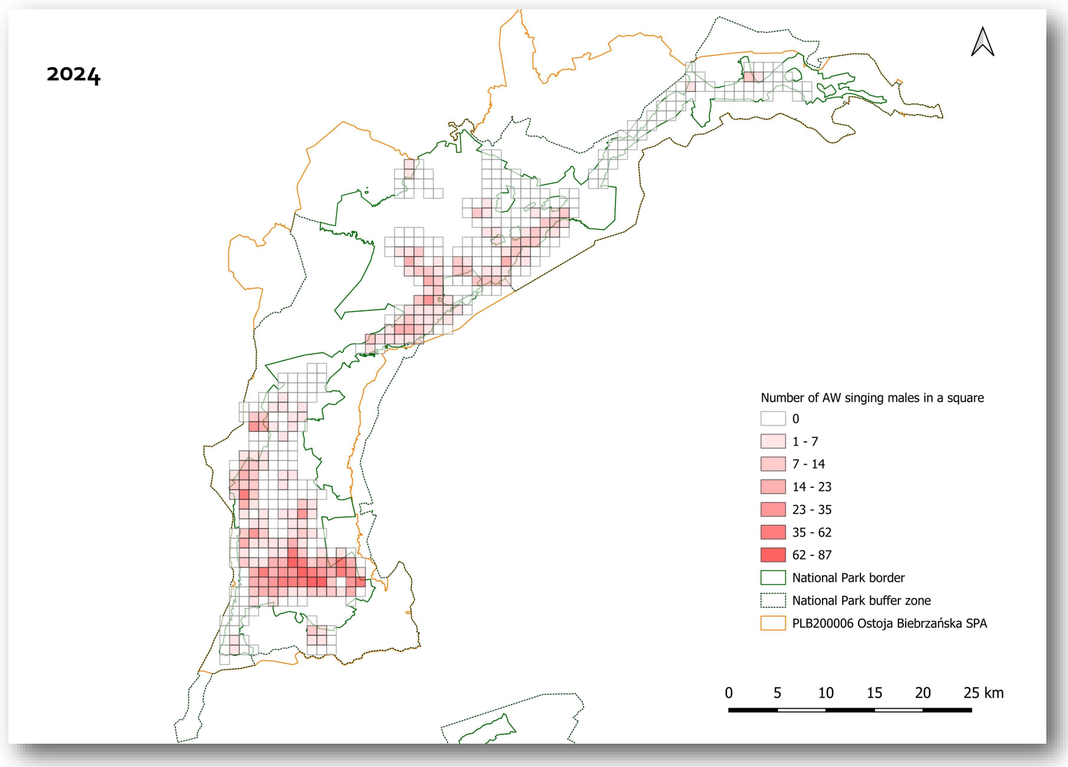
Biebrza valley is considered as the most important breeding area of Aquatic Warbler *Acrocephalus paludicola*. It is the only globally endangered bird species in continental Europe. According to data from BirdLife International (2024) and the Aquatic Warbler Conservation Team, it currently nests only in 4 countries – Poland, Ukraine, Belarus and Lithuania. The total population size is estimated at about 16,000-26,000 adults (8,000-13,000 singing males) (Flade, 2024).

The census counts covered all known habitats of the Aquatic Warbler in the Biebrza National Park (BbPN) and its buffer zone, currently or historically occupied by the species, as well as those for which there is no historical data, but which met the habitat requirements of the Aquatic Warbler., wchich are mostly the mesotrophic or slightly eutrophic sedge fen mires, optimally—well-hydrated, with stagnant shallow water (1-10 cm).




## Methods

Census counts were conducted on 100 plots covering all suitable habitats. Depending on the size of the census area, the checks were conducted by one person or by teams of observers. They moved on foot. In one-person checks, the observer controlled all the appropriate habitats within the area. During team controls, the observers lined up in a skirmish line at one of the edges of the area and then moved parallel to each other along their assigned transects, recording birds on one side of their route. Surveys were conducted from 17.05.2024 to 10.06.2024, from 1 h before sunset to 1 h after sunset. AW singing males were recorded in GPS or QField app. The results were analysed in QGIS software to avoid double records.

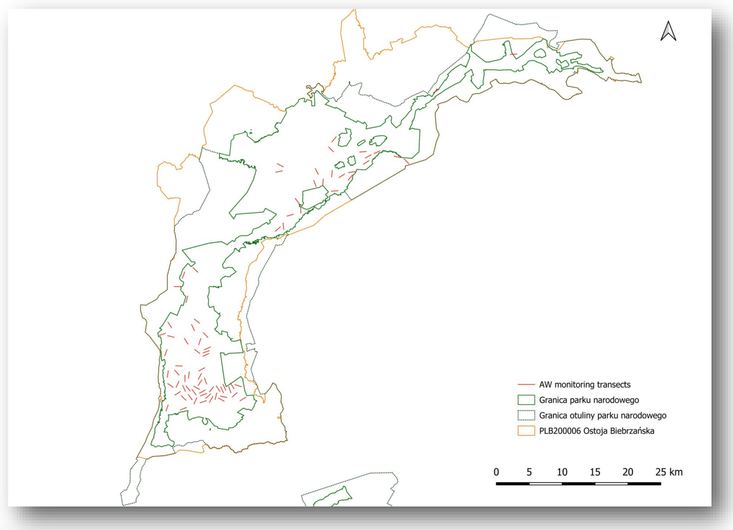
The Aquatic Warbler Monitoring (MWO) is conducted according to the fieldwork methodology methodology (Krogulec, Stasiak 2024)

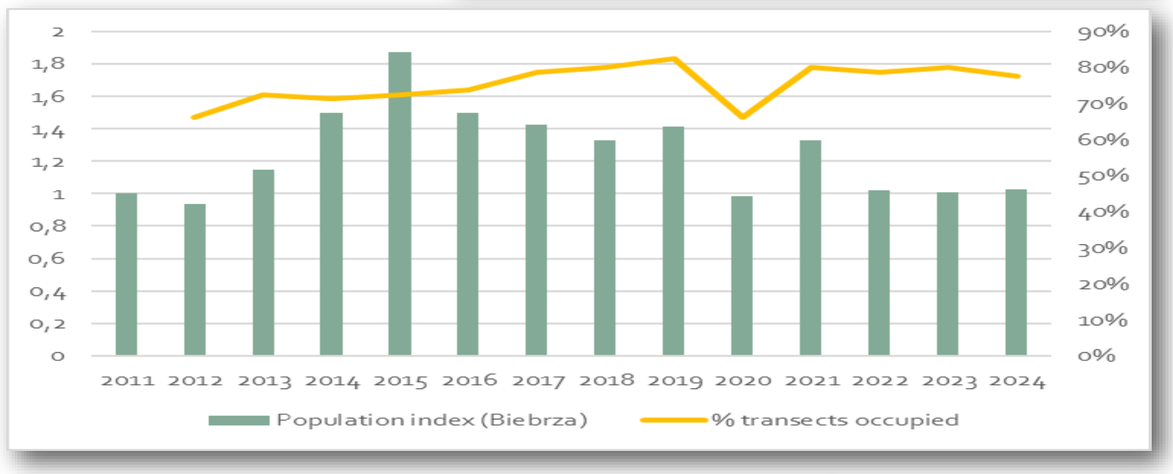
## Monitoring 2011-2024

The abundance index of the whole Polish population in 2024 was 0,948 and the trend was estimated as moderate decline (λ = 0,9881, SE = 0,0039)

In Biebrza Valley MWO is conducted yearly on 80 transects (except 2011—49 transects) and allows for estimation of the population trend and the distribution of birds within the test area.

(Stasiak, Chodkiewicz 2024)




Aquatic Warbler Monitoring (MWO) is a part of Monitoring of Birds of Poland, conducted by the Chief Inspectorate of Environmental Protection (GIOŚ) and funded by the National Fund for Environmental Protection and Water Management.

MONITORING PTAKÓW POLSKI

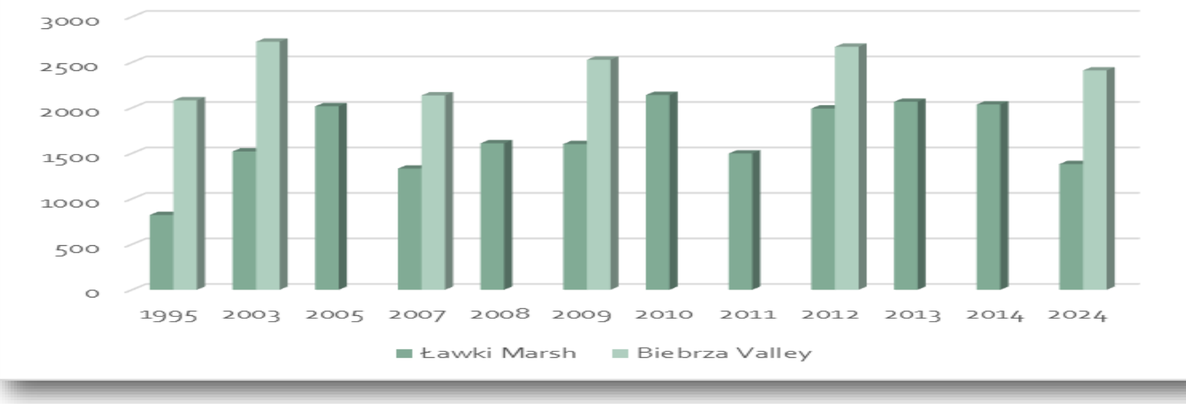
INSPEKCJA OCHRONY ŚRODOWISKA

Sfinansowano ze środków Narodowego Funduszu Ochrony Środowiska i Gospodarki Wodnej

## Results

During the 2024 census, 2411 Aquatic Warbler singing males were recorded in the census area.

The maximum density of singing males of the Aquatic Warbler was about 87 individuals per 100 ha, but the densities were usually lower. Estimation using a grid of 100 ha squares gave an average density of 4,99 males per 100 ha when taking into account all squares within the census (including those where no birds were recorded) and 11,87 males per 100 ha when taking into account only squares where Aquatic Warbler was recorded. Singing males of the Aquatic Warbler were recorded in 73 out of 100 census sites. Assuming the average individual home range of a male Aquatic Warbler during the breeding season at 4,6 ha (Schaeffer et al. 2000), the occupied area was 5347,11 ha (an increase of almost 734 ha comparing to 2012). The highest densities were recorded on extensive, mesotrophic fen mires covered with sedge with well-developed clumps of vegetation and a mosaic of patches mown 1, 2, 3, or possibly approx. 4 years earlier (it was not always possible to precisely determine this).




## Conclusions

1. The Aquatic Warbler population in Biebrza Valley is considered long term stable, according to the surveys in years 1995—2024. The number of singing males recorded in 2024 was 2411.
2. The occupation range of the species increased in last 12 years, mostly due to habitat restoration actions in Biebrza National Park and its vicinity, but the maximal density of AW singing males decreased.
3. The results of the Aquatic Warbler monitoring suggest the number of population is fluctuating in short term. The possible reasons are drought and habitat conditions.
4. Biebrza Valley is of the key importance for the preservation of the Aquatic Warbler population worldwide.

**References**

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Co-funded by the European Union

NATURA 2000

Co-funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or CINEA. Neither the European Union nor the granting authority can be held responsible for them.

**Bird Numbers 2025**: Synergies in monitoring for conservation
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