

Translocation of the Aquatic Warbler



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Translocation of species in nature conservation: what is it and when to be applied?

In nature conservation, a species translocation means a process of species relocation when a species from an abundant population is moved to a new area seeking to restore an extinct population, or the one close to extinction. Although translocation is considered to be

an effective conservation tool, it is applied solely when conventional nature conservation methods encouraging natural improvement of the population state (for example, habitat restoration) are insufficient¹.

Translocation as a species conservation tool for the Aquatic Warbler

The Aquatic Warbler (*Acrocephalus paludicola*) is the rarest terrestrial songbird in Europe. Currently, its global estimated population accounts for 11,000 singing males. The overall trend of the population has been declining, mainly due to the deteriorating condition of the habitats. Since 2014, the Aquatic Warblers breeds in 4 countries in the world - Belarus, Ukraine, Poland and Lithuania.

individuals observed in 1986, whereas only 4 singing males in 2016).

Successful translocation can create prerequisites for recovery of the extinct population and also contribute to reducing fragmentation in the area, thus ensuring sustained preservation perspective of the species.

However, a translocation tool for the Aquatic Warbler has not been applied, thus accumulation of such practice is very significant in the context of the global species decline trend. If the extinction trend does not slow down, timely translocation can become a very important tool for species preservation. It is important to get prepared for the worst case scenario and to perfect the tool without delay. Besides, successful translocation can give a new hope in restoring extinct local populations.

Understanding the importance of translocation, the parties to the Bonn Convention, having signed the Memorandum of Understanding on the protection of the Aquatic Warbler, recommended development and testing of the translocation programme for the species. The Žuvintas Biosphere Reserve has been selected as the most suitable site for translocation.

The aim of the implementation of the Aquatic Warbler Translocation Programme in Lithuania and Belarus include as follows:

- To pilot and perfect the methodology of Aquatic Warbler translocation;
- To create conditions for restoration of a viable Aquatic Warbler population in the Žuvintas Biosphere Reserve.



ŽUVINTAS

The release area because:

- Large sites of good quality habitats
- The sites are under constant supervision
- The population has been on the verge of extinction for numerous years

ZVANEC

The source area because:

- The biggest population in the world
- Collecting of young will have the least negative impact
- Authorities of Belarus welcome the tool



The source and release sites of the translocation

Aquatic Warblers will be moved from the Zvanec wetland. It is the biggest nature reserve in Belarus, a habitat of international importance and the biggest mire in Europe. The Aquatic Warbler population living here is considered to be the largest one in the world. Lately, about 3,000 singing male Aquatic Warblers have been observed, thus the translocation effect (when about 100 young are taken from the population within a two-year period) will be minor for the local population. In addition, the Project *LIFE MagniDucatusAcrola* will carry out the habitat restoration work related to the water level and quality management in the mire. The measures are the most significant prerequisites to improve the state of the Aquatic Warbler population in the Zvanec wetland.

In the course of translocation, Aquatic Warblers will be released in the Žuvintas Biosphere Reserve. In recent years, around 200 hectares of Aquatic Warbler habitats have been restored and here the rare singers may breed successfully. However, for the last several years only a few singing males have been observed, and according to experts the local population

of such size is not able to independently recover to the optimum size. The site complies with the requirements for the translocation release site, as follows:

- The breeding habitats suitable for Aquatic Warblers are compact enough to monitor the translocation progress and are large enough to establish an independent and viable population of these rare songbirds;
- The mires in the Žuvintas Biosphere Reserve comply with the features of typical Aquatic Warbler habitats in view of the vegetation structure, the water level dynamics and other characteristics;
- A comprehensive insect monitoring carried out in recent years shows that the nutritional base is solid and diverse;
- The site of restored habitats has a great survival perspective due to the sustainable agricultural activities favouring protection of the Aquatic Warbler according to the special Rural Development Programme Measure;

The new translocation programme is based on years of experience

The implementation of a translocation programme, and for species under strict protection in particular, requires considerable responsibility and focus. Therefore, the Aquatic Warbler translocation team has involved experts possessing a broad range of experience and knowledge in sensitive stages of the translocation process. Dr. Karl Schulze-Hagen, a member of the expert team, is the only expert who has successfully kept and bred Aquatic Warblers in captivity². Rhys Green, a professor at the University of Cambridge, has extensive experience in growing and researching Eurasian Reed Warblers and Sedge Warblers³. The knowledge of the experts has been integrated into the planning details of the translocation program and adopting the principle deci-

sions. For preparation of the translocation programme, the global experience of passerine birds' translocation has been taken into account. However, experience in this area is scarce. In this process, active cooperation with the Royal Society for the Protection of Birds (RSPB) which performed the Cirl Bunting translocation programme in 2004-2005 was carried out.

One of the most sensitive aspects of translocation is successful breeding of young. In the implementation of the translocation programme, taking care of young birds will be entrusted to the team led by an expert with a long-term experience in raising insectivorous birds.

² (SCHULZE-HAGEN, K. (1995): Reproductive behaviour of Aquatic Warblers *Acrocephalus paludicola* in captivity. *J. Orn.* 136: 177-186.)

³ (N.B. Davies & R.E. Green (1976): The development and ecological significance of feeding techniques in the reed warbler (*Acrocephalus scirpaceus*). *Anim. Behav.* 24: 213-229)

¹ IUCN/SSC (2013). Guidelines for Reintroductions and Other Conservation Translocations. Version 1.0. Gland, Switzerland: IUCN Species Survival Commission.

38% Belarus

33% Ukraine

27% Poland (EU)

1% Lithuania (EU)

Average distribution of the Aquatic Warbler population (singing males counted)

The current population of the Aquatic Warbler is strongly fragmented. This increases the risk of species extinction in highly isolated populations, decreases the viability of populations due to the diminishing genetic diversity. Observations of the population dynamics reveal that in strongly isolated breeding areas the Aquatic Warbler is becoming extinct irreversibly. For example, in 2011, sharp extinction of the Aquatic Warbler was observed in Hungary; the Pomeranian population (at the German-Polish border) gradually decreasing since 1990 became extinct in 2014. In Lithuania, despite successful restoration of large breeding habitat sites, the population of the Aquatic Warbler in the Žuvintas Biosphere Reserve has been consistently decreasing (20-25

Main stages of translocation

The summary of the stages of the translocation implementation is provided below. The full description of the Aquatic Warbler translocation program may be found on website www.meldine.lt



Stage 1: Search of nests and pick up.

A special team of ornithologists at the source site will carry out active searches for Aquatic Warbler nests and will determine their age by weighing the young. The transfer will be carried out collecting nests with young Aquatic Warblers, 6-7 days of age. This young age is most suitable because the birds are already capable of taking food and still small enough to be afraid of a person and for attempts to leave the nest. Having taken the whole nest at this point, a high probability exists the female will make a new nest and breed. Thus, a negative impact on the source site will be minimized.



Stage 2: Transfer of the young.

When at least 5 nests are collected, the young will be taken to the transfer site. The transfer will take place at night, when the young are resting and do not feed. Taking into consideration the transfer will require to cross the state border and follow adequate procedures, the process will be coordinated with respective authorities in advance.



Stage 3: Growing the young in cages.

The collected nests with the young will be transferred into cages (each hatch in a separate cage). The juveniles need to be fed every 20 minutes from sunrise till sunset. Feeding 5 juvenile hatches is an uninterrupted feeding process and demands arrangements for strictly scheduled teamwork shifts. The Aquatic Warblers will be fed with natural live food. This will be taken care of by a separate food collection team that will capture mire insects using entomological sweep nets. In order to ensure the juveniles do not suffer from food shortage (for example, in sudden cold weather or a prolonged rainy period insect abundance may decrease), the translocation programme executors will have ready frozen drones and/or mealworms, live crickets. The young will also receive the necessary food supplements (calcium, vitamin D).



Stage 4: Moving to a Field Aviary.

When the young can feed themselves, they will be transferred to field aviaries. Each nest clutch will be placed in a separate aviary, where the birds will be fed in the usual routine. Insects will be delivered to the aviary on a regular basis, allowing the young to learn finding food by themselves. It is important the captured Aquatic Warblers could hear voices of adult Aquatic Warblers. If such voices of birds in freedom are not heard, a sound record will be played periodically. In order to avoid the threat of predators, complex measures will be implemented: the aviaries will be enclosed with an electric fence, video surveillance cameras will be installed and birds will be constantly looked after by specialists.



Stage 5: Release of the Birds.

Having learned to find food and being able to fly, the young birds will be released. The soft release technique will be used: one aviary wall is opened and the birds are let to fly out and return, as necessary. After release food supply to the aviaries is continued until the birds stop revisiting the aviary.



Young Aquatic Warblers grown in the translocation site eventually memorize it as their birthplace⁴ and after migration return back to breed.

⁴ According to research carried out by Sokolov (1976-1988), Fisher (1971), Surrendi (1970), Lohrl (1959), Haukioja (1971) passerines memorize the site as their birthplace in ca.30-50 days after hatching.

