



Global Re-introduction Perspectives: 2011

More case studies from around the globe
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IUCN/SSC Re-introduction Specialist Group (RSG)





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Published by: IUCN/SSC Re-introduction Specialist Group & Environment Agency-ABU DHABI

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Citation: Soorae, P. S. (ed.) (2011). *Global Re-introduction Perspectives: 2011. More case studies from around the globe*. Gland, Switzerland: IUCN/SSC Re-introduction Specialist Group and Abu Dhabi, UAE: Environment Agency-Abu Dhabi. xiv + 250 pp.

ISBN: 978-2-8317-1432-5

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Produced by: IUCN/SSC Re-introduction Specialist Group & Environment Agency-ABU DHABI

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Re-introduction of the Ural owl into the Austrian Alps

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Introduction

The Ural owl (*Strix uralensis*) is a large long-lived sedentary species widely distributed in the Palearctic region, being the core of its range the boreal conifer forests, with some isolated populations in south-eastern Europe occupying other biomes than taiga. This south-eastern population extends from the south of Poland and includes the Dinaric (south-east), Carpathian (north-east) and currently in restoration Alpine (west) sub-populations. The Ural owl has the status of Least Concern in the IUCN Red List, and is listed in the CITES (Annex I, 1995) and the European Bird Directive (2009/147/EEC, Annex I). In Austria, the species is listed as DD (Data Deficient) although the last historical reports on breeding in the Austrian Alps date back to the mid 20th century, with some recent scattered observations close to the border with surrounding countries where the species occurs. Whereas the former Austrian population could not be established again by itself, there is a positive growth trend in neighbour countries, especially in the

East. Since the late 1970s, there are two more re-introduction projects being carried out with quite promising results, in Germany (Bavarian National Park) and Czech Republic (Národní Park Šumava), started in the 1990s.



Ural owl © N. Potensky

Goals

- Goal 1: Establish a viable self-sustaining population of Ural owls in the Austrian forests through the release of captive-bred birds and facilitation of nesting sites in previously selected suitable areas.
- Goal 2: Release of individuals genetically as close as possible to the original extinct population by following up the genealogy and origin of the founder pairs kept in captivity used in the breeding network.
- Goal 3: Create linkages with neighbouring sub-populations to serve as stepping stones for genetic exchange.

- **Goal 4:** Promote and strengthen collaboration with the local population and specially the hunting community to avoid some of the conflicts that led to the extinction of the species in Austria.
- **Goal 5:** Monitor behaviour and survival to better understand the species' ecology in order to improve the conservation actions in this and future re-introduction projects.



Typical Ural owl habitat

Success Indicators

- **Indicator 1:** Increase the survival rate of the captive-bred young owls by using improved release techniques and monitoring methods.
- **Indicator 2:** Achieve the reproduction in the wild of the species.
- **Indicator 3:** Establishment of reproductive couples in protected sites, attracting them to previously selected optimal areas by means of the installation of artificial nest-boxes.
- **Indicator 4:** Connection and genetic flow between the two release areas.
- **Indicator 5:** Expansion of the population to adjacent areas and natural connection with extant populations of surrounding countries (Italy, Slovenia, Hungary, Croatia and Slovakia).

Project Summary

Feasibility: The resolution to begin a new re-introduction in the Alps was taken after the European Ural Owl Workshop (Müller *et al.*, 2006) which culminated in the creation of an Action Plan and release of the first birds in 2009. The extinction of the species was primarily consequence of the direct persecution, together with the loss of habitat and nesting sites resulting of the progress of modern forestry. A small re-introduction attempt was conducted in 2001 with the release of some captive-bred Ural owls in Oberösterreich, although these factors were not dwelled with in advance and therefore it was unsuccessful. Together with the implementation of new natural wildlife-protection laws in the last decades, a campaign was started in 2007 to raise public awareness, emphasizing the direct collaboration with the hunting and forestry communities to ensure cooperation instead of confrontation. Ural owls need big cavities in trees as well as broken snags to breed; in actively managed Austrian forests the trees are harvested in early stages and dead trees are removed, reducing therefore availability of suitable sites. In recent years, protected areas such as the Wilderness area Dürrenstein, and the Core zones in the Biosphere Reserve of the Wienerwald



Researcher in tree © M. Graf

(both release areas), have been created to preserve the natural ecosystem. Furthermore, an extensive program was initiated in 2008 to set up nest-boxes in pre-selected areas (based on HSI modelling) in order to attract breeding pairs to the protected sites.

Implementation: The first release of captive-bred Ural owls took place in the summer of 2009, although

the project was formally started one year earlier with the establishment of the breeding network and habitat characterization to pre-select the releasing sites. Since then, 50 birds have been released between 2009 and 2010 (29 in the Wienerwald and 21 in the Wildnisgebiet), plus other 36 birds being currently released in 2011. Besides, more than 120 nest-boxes were fixed until August 2011. The juvenile owls are separated from their parents (approx. 75 days-old) and transferred to special aviaries in the woods, where they spend another 3 weeks until they are released (approx. 100 days-old); this method is used to enable the development of natural behaviour including the hunting abilities (training with live prey) and increase the chances that the birds would settle in the area or surroundings. The animals are provided with food while being in captivity (never hand-fed to avoid the imprinting) and also in the wild until they become independent (dispersal phase) by using specially adapted feeding tables.

Several subspecies of *S. uralensis* have been described based on the morphology of different populations. In particular the European populations were traditionally regarded as belonging to the subspecies *liturata* in the North and *macroura* in the South, although recent molecular studies suggest that these belong to one single sub-species that comprises a meta-population. The individuals released have been thoroughly selected to be as close as possible to the original Alpine population thanks to the close collaboration of a well managed breeding network made up of several private centres and zoos throughout Europe.

Post-release monitoring: Thus far, the achievements accomplished by the project are remarkably positive; already in the second breeding season after the beginning of the release of birds, the first pair has been able to successfully raise a chick until fledging, using one of the nest-boxes set up in the Wienerwald. Moreover, 2 to 3 more pairs have already settled and established a territory, raising the prospect for breeding in upcoming years. The presence of Ural owls is difficult to prove due to the size and location (often in remote and mountain areas)

of their home range, little evidence of presence and especially their nocturnal habits; nevertheless, several methods are used jointly for monitoring the species:

All owls (both released and wild-born) are equipped with specially developed plastic colour rings that contain a microchip with a unique code, which is registered by a reading device each time the bird enters a detection zone. Such devices can be attached to the feeding tables, which are also surveyed by infrared photo-traps, or nest-boxes, giving a clear overview on the status of the population to the individual level. In addition to the “intelligent” rings, some of the birds have been equipped with tail-mounted and leg-harness radio-transmitters that allow their location by telemetry. Likewise, in addition to these methods, bioacoustics have been used by displaying male callings during the mating season (with positive results), and furthermore there is a close connection with hunters and landholders to receive data on sightings. Since the beginning of the project, genetic samples of all released birds as well as samples collected from the wild (moulted feathers and pellets) have been stored in anticipation to the creation of a genetic fingerprint of all birds.

Major difficulties faced

- In 2010 and specially 2011 the populations of small mammals were extremely low as a result of a bad seeding season for beeches and oaks. Another consequence of modern forestry is the homogenization of the forest due to reforestation, which hamper the buffer effect in natural mixed forests in case some tree species had a bad productive year. In early stages of re-introduction programs these natural phenomenon might be extremely damaging
- It is practically impossible and highly costly to control individuals when they get far from the areas under survey, especially during the decisive dispersal phase.
- However good the collaboration with the hunter community might be, there are always some conflicting opinions that could be detrimental to the project on the long term, or in the near future in case of direct individual actions
- Prevent other raptor species from coming to the feeding sites and stealing the food, which might cause the early leaving of the young owls in search for new food supplies in case there's not enough for all birds.
- Accidents such as car knockdowns or collisions with fences can be frequent and frequently lethal in some black spots which owls might find suitable.

Major lessons learned

- The work on public awareness and collaboration among all people involved in the success of the project (from politicians and hunters to volunteers) has proved essential from the beginning on. It is important to remark that since there seem to be hardly any natural limiting factors for the survival and settlement of the species in Austria, it can be asserted that shooting was the main reason for its former extinction.
- It is extremely important that the release methods used imitate and consider the natural adaptation to environmental factors in order to increase the survival probabilities of the birds, as well as continuing a close follow-up on birds once released.

Birds

- It is necessary to be totally open when dealing with this kind of project that some might find controversial; transparency is the only way to avoid groundless critics.
- Until a significant number of trees located in the new protected areas reach the right age for providing suitable nesting sites, nest-boxes are the best option for breeding and monitoring of owls.
- In order to achieve the maximum success in such project it is crucial to make use of the valuable work and guidance of experts in the field.

Success of project

Highly Successful	Successful	Partially Successful	Failure
	√		

Reason(s) for success/failure:

- Survival of a high percentage of the released birds to the adult phase being able to self-sustain during hard winter conditions.
- First case of reproduction in the wild of a pair of birds just two breeding seasons after the beginning of the release, in one of the provided nest-boxes
- Positive feedback and even financial support from formerly opposed groups such as the hunter and forestry communities
- It is still not possible to assure whether the re-introduction project will be successful on the long term since it is still in an early stage. We assume that a definitive success will only be achieved after the establishment and correct development of a healthy breeding population outnumbering the amount of released birds.

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