



Global Re-introduction Perspectives: 2010

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





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Experimental release of young captive-bred black storks in Ticino Regional Park–Lombardy, Italy: as potential support to the wild population

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Introduction

Black stork (*Ciconia nigra*) breeds from Spain to Sakalin island in the Russian Far East. In the last 20 years the number of breeding pairs increased in Central Europe, Spain and in several countries from where it had disappeared. In Italy there are no historical data regarding breeding (Spina & Volponi, 2009) and the first nest was discovered in 1994 in the Piedmont region (Bordignon, 1995). In 2008 only seven pairs were distributed in Piedmont and in central South Italy (Bordignon *et al.*, 2008) and the ringed individuals observed stemming from Czech Republic, Germany, Poland and Slovakia (Spina & Volponi, 2009). The wintering area depends on the origin of the birds: the few individuals present in Italy apparently spend the winter in West Africa. The species is listed as Least Concern in IUCN Red List, but it is present in App. II of the Bern Convention, Annex I of the E.U. Birds Directive, App. II of CITES, and protected by Italian law 157/92. This experimental program, co-financed by the CARIPLO Foundation and with logistic support of Colibri Association, started at Oriano in the northern part of the Ticino Park, situated not far from the nesting area in Piedmont and along a migratory route.



Young black storks with satellite tags in a pre-release aviary © A. Aebischer

Goals

- Goal 1: Test if the young captive black storks are able to survive in the wild, i.e. whether they are able to migrate to the wintering quarter in Africa, to come back to Italy in the next spring and to survive up to the age they will settle and breed.
- Goal 2: Test the effectiveness of the rear and release techniques.
- Goal 3: Identify the resting areas used by migrating black storks.
- Goal 4: Improve the knowledge about this species in the project area.

Success Indicators

- Indicator 1: Survive in the wild from release until the following summer.
- Indicator 2: Effective migration and joining the natural population in the winter quarters in Africa.

Project Summary

Feasibility: In the black stork, as in other endangered species, some birds are reared in captivity and later on released as support to the wild population. In the former projects, the released birds were marked only with leg rings and so there are few information regarding their surviving in the wild, space use and migrating routes. A complete feasibility study based on IUCN Guidelines for Re-introductions was not carried out in this experimental release, we only considered the limiting factors that could affect the release success. In our case, young birds reared at Natur-und Tierpark Goldau and Monticello Breeding Center were tracked by satellite transmitters, a method that was successfully applied on wild black storks in France and in the Czech Republic.

Implementation: The groundwork was conducted in 2005 and 2006 with the release of two individuals (male and female) in each year. The first step was to build up in Oriano a pre-release aviary of 14 m x 6 m x 5 m high with a good sized pond where live fishes are stocked to keep the storks exercised and learn wild prey catching skills. For tracking a 30 g transmitter powered by batteries was used and the signals of the transmitters were recorded by the ARGOS satellite system. The transmitters were attached as backpacks using Teflon ribbon as a harness. A pre-breaking point was prepared in order to allow the transmitters to fall off after the end of the battery life span. The life span was about 1,100 hours that were spread over 3 duty cycles with constant on-periods of 8 hours, and changing off-periods of 101 hours for 4 repeats, then 37 hours (55 repeats) and then again 101 hours for the rest of the time. In this way we assured a tracking duration of about 14 months. The accuracy of the 7 location classes (LC) given by the Argos system was: more than 1,000 m for LC0; 350-1,000 m for LC1; 150-350 m for LC2; and less than 150 m for LC3. For Z, B and A locations no precision can be given, but LCA are often as precise as LC1 and LCB are often in a range of 10 km from the real location, as observed in the field. This was enough for the project goals and we used all LCs, but not LCZ. The two birds released in 2006 were also fitted on one leg with a 6 g VHF tag with a life span of about 14 months.

Post-release monitoring: The birds released in 2005 were born in the Natur-und Tierpark Goldau and one year old when released. They were released on 26th

July after spending 14 days in the pre-release aviary of Oriano. The female was monitored for 88 days till 15th September and the male for 133 days till 8th December, when the radio signal was last received. We suppose that both storks were illegally shot. We received 133 position data from the male, and used the 100 locations to estimate movements, and 52 useful locations of the female out of 96 data sets and no migration occurred. In 2006, we decided to release two younger storks (<1 year old) from Monticello



Typical black stork habitat © il Colibri

Centre, because we supposed that keeping them long in the aviary could interfere with migratory behavior. The release occurred on 22nd September after 16 days in the pre-release aviary. The signal from the female disappeared after three days, and even with the VHF-system it was impossible to locate the bird, suggesting it was illegally shot. The male was tracked for 387 days and we received 449 useful locations and could reconstruct its movements: at the beginning it was localized near Alessandria city but after few days it moved in an area near the Po river where it stayed till 28th October when it moved in a coastal area near Pisa (Migliarino-San Rossore Regional Park). The location on 5th November confirmed that the bird was in a coastal area of Algeria. On 11th November it flew further south and after another 350 km it arrived in Tunisia. Due to the duty cycle of the tags we have not received data during the flight from Italy to Africa and back and surprisingly, it came back to Italy after a week! On 16th November it was again in Northern Italy near Parma. The male made short range movements within this area where some black storks were wintering (Staffora valley-Pavia) till October 2008, when the battery was exhausted. The bird was seen in February 2009 still alive and in good health.

Major difficulties faced

- Captive bred young Black storks are notoriously difficult to find. Human disturbances (at least in zoos open to the public) and the often observed incompatibility between two mates, too often prevent successful breeding.
- The illegal hunting is the most important cause of mortality in Italy; over 80% of the individuals observed in Italy did not survive till autumn because of hunting (Spina & Volponi, 2009).

Major lessons learned

- The captive birds if properly reared (big aviaries and possibility to catch live fishes) are able to survive in the wild and moving over long distance in very few days.

- We suppose that it is better to release young birds (<1 year old) to obtain individuals that do migrate.
- The habitat use analysis showed that released individuals were positively linked with the presence of humid areas also of small size. This underlines the importance to preserve these kinds of habitats for the long terms conservation of the black stork.
- The storks are able to survive during winter as well. We would like to underline that more and more black storks and other birds (e.g. *Ardea cinereus* and *Egretta egretta*) do spend the winter in Italy instead of migrating (e.g. Tinarelli, 2005 for Emilia Romagna, and Bordignon *et al.*, 2008 for Pavia area).

Success of project

Highly Successful	Successful	Partially Successful	Failure
		√	

Reason(s) for success/failure:

- The released captive birds showed the possibility to survive in the wild and easily migrate to Africa, but with no evidence to join the wild population in the wintering African areas.
- To try to obtain more information regarding the last aspect, we would implement this program with the release of two other captive couples in two years, with the same protocols as used in 2006.

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