

# Annual Report 2013



Picture J Fritz

## FOREWORD

The year 2013 was characterized by the application for LIFE+ co-financing. The application had already been submitted in 2012, but the revision and ultimately the decision took place this year. In early May 2013, the LIFE + co-funding was awarded to us. Thus, the course was set for a continuation of the project until at least the end of 2019 and thus for the sustainable reintroduction of the Northern Bald Ibis with a migratory lifestyle in Europe.

During the period of the project application, 2012 and 2013, we performed no human led migrations, so as to be able to focus our human and financial resources for the application. However, we were able to intensify and optimize the management of the existing migratory population.

During spring and summer, our birds migrated from the wintering area to Burghausen and for the first time also to Anif/Salzburg. From both breeding areas, juveniles were led by adult conspecifics down to the wintering area.

For the first time, we did not lose birds due to illegal hunting during the autumn migration. This was mainly due to an optimized escort of the birds. A highlight of the autumn migration was a couple which chose a route to the West and around the Alps to Italy, instead of the direct way across the Alps.

Another highlight of 2013 was the juvenile Shorty which had wintered alone in Switzerland and finally returned to the breeding colony Burghausen in July 2013.

I would like to thank all persons and institutions that have contributed to the successes of the past year, in particular by taking care of the birds in the breeding areas and in the winter area, during escorting of the migrating birds, by observation and care of Shorty in Switzerland and of course by contribution to the successful LIFE+ application.

**Thanks to all of you!!!!**

Johannes Fritz

Mutters, April 2014

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## DEMOGRAPHY

At the beginning of 2013, we had a population of 22 individuals (9 females, 13 males). The growth and loss are shown in Table 1. At the end of the year, the stock had increased up to 23 individuals (10 females, 13 males). In our view, that is a quite positive balance in the current start-up situation of the population, especially since it is particularly due to natural reproduction in the breeding area BGH and the arrival of 6 young birds in the winter area (4 from Burghausen and two from Salzburg).

Negative on the balance sheet was in particular the losses in the breeding colony Burghausen, caused by the late arrival of a male. Considerable unrest and fights in the colony, probably caused by a lack of females, caused losses of eggs and chicks. Ultimately, from initially seven nests with 23 eggs only three nests continued to breed and a total of 6 youngsters fledged.

	BGH	SBG
<b>Population Size Start 2013</b>	<b>14</b>	<b>8</b>
Reproduction	6	0
Supplementation Juveniles	0	2
Mortality	2	2
Losses	2	1
<b>Population Size Ende 2013</b>	<b>16</b>	<b>7</b>

**Table 1:** Overview of population trends 2013; BGH: breeding area Burghausen; SBG: breeding area Salzburg.

## SPRING MIGRATION AND REPRODUCTION

On 22nd March 2013, two Northern Bald Ibises started for a more day flight to Northern Italy, but returned back to the breeding area before they finally left to the north a few days later. The actual spring migration began on 26th March 2013. On 18th April, the first bird arrived in the breeding area Burghausen. A total of 16 birds left from Tuscany (Tab.2). A bird was shot down in Italy during the spring migration, which is the first evidence of illegal NBI hunting outside the Italian hunting season. Two further birds remained missing after their GPS devices had failed. One sub-adult bird remained in northern Italy and from there returned back to the wintering area, this is known to be a normal behavior for immature birds. The remaining 12 birds reached the two breeding areas.

	BGH	SBG
<b>Departure from the wintering area</b>	<b>10</b>	<b>6</b>
losses during spring migration	1	2
subadult semi migrants	0	1
<b>Arrival in the breeding area</b>	<b>9</b>	<b>3</b>
Swiss migrant arrival back in the breeding area	1	0
Injured birds transferred to breeding area	3	0
Supplemented adult birds	8	4
Supplemented juvenile birds	0	2
<b>Total number of birds arriving in the breeding areas</b>	<b>21</b>	<b>9</b>

**Table 2:** Overview of the spring migration and reproduction 2013, BGH: breeding area Burghausen; SBG: breeding area Salzburg.

Of the 12 birds that returned to two breeding areas, a part were supported at the crossing of the Alps (SAT Supported Alp Transit). The birds in question were captured on the southern edge of the Alps and transferred to the central Alp area. After release, they usually continue straight to their breeding area.

This method was already practiced in 2012. It relates to a part of the hand-reared birds that have been led around the Alps down to the south. These birds tend to cross the Alps directly, but most probably due to a lack of individual experience they hesitate to enter the Alpine region which causes a migratory congestion on the southern edge of the Alps. In parent-raised birds, which followed their conspecifics to the south across the Alps, the migratory congestion is not observed and consequently the SAT is not required.



Picture M Unsöld

In autumn 2012, the juvenile “Shorty” from Burghausen followed the adult conspecific “Domino” along the northern edge of the Alps to the west. In western Switzerland, the two birds lost contact. While Domino migrated further to Tuscany, Shorty remained in Switzerland through the winter. In July 2013, Shorty returned back to the breeding area BGH.

## SUPPLEMENTATION AND REPRODUCTION



Picture J Fritz

End of March, we transferred adult birds from zoo breeding colonies to the two breeding areas and kept them in an aviary adjacent to the breeding walls. This method, which was already practiced in previous years, aims to increase the reproductive success (indirect supplementation; Tab.2). The majority of these supplemented adults join the group of migratory birds in the Tuscany during winter. So, on arrival to the breeding area migrants encounter the known conspecifics, which lead to rapid breeding activities. Before the start of the autumn migration, end of July, these supplemented birds were captured and transferred out of the breeding area, while all offspring remained in the breeding area. In Burghausen 6 young birds fledged, while in the new breeding area Salzburg there was only an unsuccessful breeding attempt.

Early July, two fledged juveniles from the breeding colony Rosegg were released in the breeding area Salzburg (direct supplementation; day.2). After a habituation period in the aviary, the two young birds were released and they joined the migratory group.

### AUTUMN MIGRATION AND ESCORTING

After removal of the supplemented adult birds and of Shorty a total of 23 birds including 8 juveniles remained in the breeding areas (Tab.3). All birds left the breeding areas during August. On Sept. 8<sup>th</sup>, the first birds reached the wintering area in the Tuscany. The last birds arrived there on Nov. 21<sup>st</sup>.

	BGH	SBG
<b>Total of birds in the breeding areas</b>	<b>27</b>	<b>9</b>
Removal of supplemented adults	8	4
Transfer of Shorty to the wintering area <sup>1</sup>	1	
<b>Departure from the breeding areas</b>	<b>18</b>	<b>5</b>
Missed during autumn migration	1	0
Lost during autumn migration	1	0
<b>Arrival in the wintering area</b>	<b>16</b>	<b>5</b>
Return of semi-migrants to the wintering area	0	1
Juveniles summering in the wintering area	0	1
<b>Total of birds in the wintering area</b>	<b>16</b>	<b>7</b>

<sup>1</sup> Since Shorty wintered in Switzerland, we assumed that he will not find the way to the common wintering area and, thus, we transferred him.

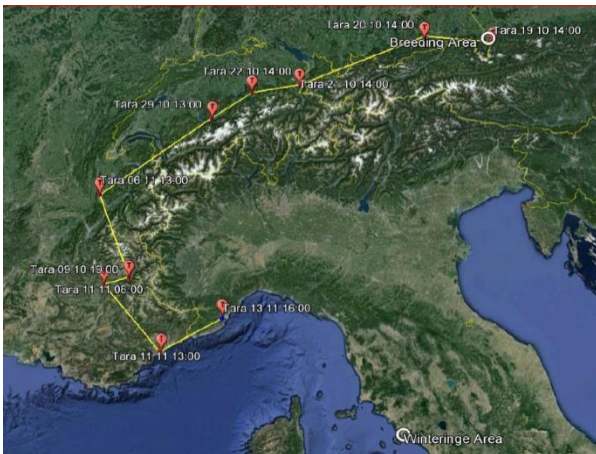
**Tab. 3:** Overview autumn migration 2013; BGH: breeding area Burghausen; SBG: breeding area Salzburg.

The GPS tracker of one young bird from Burghausen already stopped transmitting in Bavaria and the bird is missing since then. A second young bird died in the Austrian Alps, probably as a consequence of a bird of prey attack. There were no further losses during the fall migration and in particular no evidence of illegal shooting. Six of eight juveniles arrived in the winter area.

The relatively low loss rate during the fall migration was particularly caused by an intense and sometimes invasive management during the autumn migration. From the beginning of September until the arrival of the last birds on 21 November up to three escorting teams were on the way. The teams followed the migrating birds using the regular (one to three times per day) GPS coordinates. The teams were coordinated by our field manager Daniela Trobe.

The main task of these teams, which usually consist of two persons, is to stay in the surrounding area of the birds at stopover sites and offensively to get in touch with hunters, hunting associations, the media, government agencies and the public. In addition, some birds were caught in regions with intensive hunting activity and translocated to other locations along the migration corridor or directly to the winter area. These translocations took place mainly in an area up to 250 km north of the winter area. Repeated experience has shown that these translocations do not affect the future behavior of the birds. In particular, next spring the birds show a regular migratory behavior. We also assume that the increasing awareness of the bald ibises and the conservation project by the Italian hunters and by the Italian public in general have also contributed partially to the reduced losses in 2013.

In autumn 2012, the adult bird Domino migrated to the west along the main Alpine ridge, followed by the juvenile Shorty. Unfortunately, the transmitter of Domino failed in western Switzerland. Three weeks later, he appeared in Tuscany. In autumn 2013, again an adult named Tara flew to the west along the main Alpine ridge. And again, he was followed by a juvenile named Amsel. In this case, the transmitters worked appropriately and provided an exciting dataset (Fig.1). The two birds followed the Alpine arc through Switzerland to France, there to the Mediterranean and finally via Monaco to Ligurians/Italy. There, the two birds separated from each other for some unknown reason. Due to the significantly advanced time when the two birds separated (Nov.20<sup>th</sup>), we decided to catch them and to transport them to the wintering area.



**Figure 1:** Autumn migration route of the adult bird Tara and the juvenile Amsel.

The dataset suggests that at least some of the birds tend to avoid the barrier Alps during autumn migration which may result in a second migration corridor around the Alpine arc. In addition, the seemingly well oriented migration along the Alpine arc in completely unknown territory raises fascinating questions about the navigation ability of the birds.

## GPS/GSM REAL TIME POSITIONING

2013, the entire colony was equipped with GPS trackers. We primarily use the battery-powered GPS tracker delivered by the company Fleetric. These devices operate largely reliable, but require a repeated capture of the birds to charge the battery. In summer 2013, we got the option to test a solar powered GPS tracker, which was developed by the Institute for Ornithology in Radolfzell and the University of Konstanz (Fig.2). In 2014, testing of the solar powered tracker continues.



**Figure 2:** Mounting of a solar-powered GPS tracker on a Northern Bald Ibis, from left Anne-Gabriela Schmalstieg, Bernhard Gönner (both Waldrappteam), Martin Wikelski (Max Planck Institute for Ornithology Radolfzell).

## MORTALITY AND VETERINARY SCREENING

2013, we lost a total of 3 birds, one since the spring migration and two since the fall migration (Tab.4). Since the last GPS positions of the birds were in Austria or Bavaria, we assume that the disappearance has other causes as illegal bird hunting.

Thus, in 2013 only one bird was lost due to illegal bird hunting. Exceptionally, this case of shooting took place during the spring migration in early June in the region of Basse del Brenta, about 30 km north of Padua. This is thus the first evidence of illegal bird hunting outside of the regular bird hunting season.



**Figure 3:** Veterinary screening of the Northern Bald Ibises; from left Gabriela Stanclova, Alexandra Scope (both Veterinary Univ. Vienna), Markus Unsöld (Zool. State Collection Munich and Waldrappteam); Picture J Fritz.

One bird died due to predation (a juvenile in the Alps), one through infection (avian tuberculosis; see below) and one due to faulty human care (during a temporary stay by a partner in Friuli).

During fall/winter 2012, two birds died in Italy due to avian tuberculosis (ATBC; *Mycobacterium avium*). A further bird fell ill in fall 2012. It was then kept isolated and due to a veterinary diagnosis treated for Aspergillosis. In spring 2013, this bird was transferred to our camp in Anif/Salzburg, where he was euthanized after deterioration of his condition. A post mortem medical examination indicated avian tuberculosis for this bird as well.

Cause	Number
missed	3
illegal bird hunting	1
predation	1
infection	1
during human care	1
total	<b>7</b>

**Table 4:** Overview Mortality causes and losses 2013.

Since then, there were no further signs of the infection in the colony. Our birds had already been tested in the winter of 2012/13 through using the PCR method and had been found free of ATBC. In the winter of 2013/14 the whole colony was screened for any infections. The test for ATBC infection was carried out using various methods, according to three appraisals. Again no evidence was found that any of the Bald Ibises had ATBC, and no other illness was found either.

The veterinary care was mainly carried out by Prof. Alexandra Scope, Vet.med.Uni Wien and Dr Jean Meyer, Veterinary centre Völkendorf/Carinthia, Dr Renato Cecchereli, CRUMA Veterinary Wildlife Management LIPU Birdlife Italy was also involved.

The veterinary medical screening will be continued for the whole colony, under responsibility of Prof. Alexandra Scope, using a background of expert foundation of scientific knowledge.

### PUBLIC RELATION

In 2013 we had a total of 35 printed articles. As we do not have a systematic media clipping it could be a far higher number of articles. One theme which dominated the press was the fact that Shorty stayed in Switzerland over the winter period. Shorty was named the most famous bird in Switzerland and even became a statue by Lake Zug (Zuger See).

In addition there were 6 television productions. Three productions in Italy should be emphasized, one of which was promoted by our partner Parco Natura Viva – it covered the project and hunting.

### Own popular publications:

Fritz J & Unsöld M 2013. Aufwind für den Waldrapp: Von der Wiederansiedlung eines europäischen Zugvogels. Jahrbuch des Vereins zum Schutz der Bergwelt (München), 78. Jahrgang 2013, S. 121-138.

Fritz J & Unsöld M 2013. Hoffnung für den Waldrapp: Wiederansiedlung eines Zugvogels. Pirsch, 17/2013.

### SCIENTIFIC ACTIVITIES

#### Formation Flight (DFG 2012 Project Vo18061-1)

The data for this project was collected in 2011 whilst the human-led migration took place. It was a joint project with the Royal Veterinary College London, the Humboldt University, Berlin, and the Oxford University they finalised the manuscript and in 2014 it was made public.

Portugal SJ, Hubel TY, Fritz J, Heese S, Trobe D, Voelkl B, Hailes S, Wilson AM & Usherwood JR 2014. Upwash exploitation and downwash avoidance by flap phasing in ibis formation flight. Nature, 505, 399-402.

#### Migration Physiology (FWF Project P20633)

The data for this project was taken during 2008/2009 and our partner was the institute for avian studies Wilhelmshave, Univ. Vienna (u.a.). in 2013 the manuscript was finalized and accepted for print.

Bairlein F, Fritz J, Scope A, Schwendenwein I, Stanclova G, van Dijk G, Meijer HAJ, Verhulst S, Dittami J. Designing a flight - energy expenditure and metabolic changes of free-flying migrating Northern Bald Ibis. *Nature*, subm.

### NBI-Migration in the Middle East

In 2013 a manuscript was finalized covering the historical and recent migratory habits of the Northern Bald Ibises in the Middle East. It was accepted and printed in February 2014.

Serra G, Lindsell JA, Peske L, Fritz J, Bowden, CGR, Bruschini C, Welch G, Tavares J & Wondafra M 2014. Accounting for the low survival of the Critically Endangered northern bald ibis *Geronticus eremita* on a major migratory flyway. *Oryx*, 1-9.

### Comparative Evaluation of Breeding Habitats

In 2013 summer/autumn a comparative and qualitative evaluation was carried out, using actual and potential breeding habitats in Austria (Salzburg, Upper Austria) and Germany (Bavaria, Baden Württemberg). The study was carried out by Manuel Dylla, Bernhard Gönner and Anne-Gabriela Scmalstieg. Parts of the results were presented at congresses. Parts of the work are a part of the diploma from M Dylla, which will be finalized in 2014. The supplementary data collected at Georgenberg-Küchl/Salzburg is part of the bachelor from AG Schmalstieg.

Dylla M. Evaluation of breeding and feeding areas for the reintroduction of the Northern Bald Ibis in Middle Europe. Master Thesis Univ. for Agriculture, Vienna/Austria.

Schmalstieg AG 2013/14. Der Waldkrapp als Zeigerart für den Lebensraum Kulturland in Salzburg. Bachelorarbeit Hochschule Osnabrück, Germany.

### Illegal Bird Hunting in Europe

Corinna Esterer studied a situation analysis of the danger to migrating birds through illegal hunting in Europe using the Northern Bald Ibis as example as part of her bachelor. A symposium about illegal avian hunting will be held in 2014/15 will be based on this study.

Esterer C 2013/14 Situationsanalyse zur Bedrohung von Zugvögeln durch illegale Vogeljagd in Europa: Fallbeispielen Waldkrapp. Bachelorarbeit Hochschule Weihenstephan-Triesdorf, Studiengang Umweltsicherung, Weihenstephan, Deutschland.

## **CONGRESS CONTRIBUTIONS**

Bichler M, Unsöld M & Fritz J 2013. Migratory Shortcuts: Zum Orientierungsvermögen der Waldkrappe während der Migrationsflüge. 146. Jahresversammlung der Deutschen Ornithologen-Gesellschaft in Regensburg, Deutschland (poster).

Dylla M, Schmalstieg AG, Gönner B, Unsöld M & Fritz J 2013. Evaluierung potentieller Brut- und Nahrungshabitats für die Wiederansiedlung des Waldkrapp in Zentraleuropa. 146. Jahresversammlung der Deutschen Ornithologen-Gesellschaft in Regensburg, Deutschland (poster).

Dylla M, Schmalstieg AG, Gönner B, Unsöld M, Fritz J & Kotschal K. 2013. Evaluierung potentieller Brut- und Nahrungshabitats für die Wiederansiedlung des Waldkrapps in Mitteleuropa. 4. Bayerische Ornithologentage in Benediktbeuern, Deutschland (talk).

Fritz J 2013. Reason for Hope: Die Wiederansiedlung des Waldkrapp in Europa: LIFE+12-BIO\_AT\_000143. 146. Jahresversammlung der Deutschen Ornithologen-Gesellschaft in Regensburg, Deutschland (poster).

Unsöld M & Fritz J 2013. Muster der geführten Herbstmigration bei Waldkrappen: der Fall ‚Shorty‘. 146. Jahresversammlung der Deutschen Ornithologen-Gesellschaft in Regensburg, Deutschland (poster).

## **AWARDS**

Johannes Fritz was proposed by Zoo Vienna for the Indianapolis price. The prize is awarded to individuals who has accomplished a significant achievement or achievements in the conservation of an animal species or group of species, resulting in an advance in long-term sustainability. J Fritz was nominated in 2013 the decision will fall in 2014.

## **OUTLOOK 2014+**



On 1st January 2014 the life project LIFE+Biodiversity Project (LIFE+12-BIO\_AT\_000143) began. The project was designed by 8 partners and is supported by many international institutions.



For the management of the LIFE+Project a team was formed, which is financed from the LIFE+Project funds. The team is mainly made up of people who have been active members of the Waldkrappeteam project up to now.

In 2014 the breeding group in Burghausen will be built up. In addition a new breeding area will be made on the castle wall and the castle at Burghausen.

In Salzburg a second breeding area will be established at Georgenberg in Küchl south of Salzburg, for the first time on a natural cliff face with suitable breeding niches. In this context the

county of Salzburg-Land will become a new partner in the LIFE+ Project.



**Fig.4:** LIFE+ Project Management Team: from left J Fritz, M Unsöld, B Eberhard, B Gönner, C Esterer, C Sperger, AG Schmalstieg, M Schroll; right below D Trobe.

In Überlingen at Lake Constance, the conditions for a third brood location should be created. Natural cliffs along the Lake North of Überlingen offer suitable breeding conditions. For this location there is also historical breeding evidence.

From 2nd to 4th May 2014 the first Reason for Hope Festival will take place in Schönbrunn Zoo Vienna. The presentation of the hand raising of the chicks for the purpose of human-led migration will be start at this festival.

The human-led migration will start for the second time (after 2011) from Anif in Salzburg. For the first time we want to lead the birds directly over the Alps from there. These hand raised birds should enlarge the breeding group in Kuchl.

In Italy many campaigns have been started to against the illegal bird hunting. The campaign will be led by Andreas Sax, together with the project management team along with Parco Natura Viva Nicoletta Perco and others.

The wintering area will stay at the WWF Oasi Lagund di Orbetello. There Angela Travali will help look after the birds along with the WWF workers.

In the framework of the LIFE+ Project there will be a new homepage, new folders, posters and information boards. In addition there will be a

new BirdTracking App with the help of our partners at the Max Planck Institute for ornithology Radolfzell, where the positions of our birds and white storks will be able to be seen.

### SUPPORTERS AND SPONSORS 2013

Brunold Martin; Bund Naturschutz in Bayern e.V.; Bundesministerium für Wissenschaft und Forschung; City of Burghausen; Frau Maria Schram; Förderverein Waldrappteam; Heinz-Sielmann Stiftung; HIT Umwelt- und Naturschutz Stiftung; Österreichische Zoo Organisation (OZO); Parco Natura Viva; Zoo Vienna.

### PARTNERINSTITUTIONEN 2013

Alpenzoo Innsbruck; Bund Naturschutz in Bayern e.V.; CRUMA Veterinary Wildlife Management Centre LIPU; Freie Humboldt Universität Berlin; Greifvogelstation Haringsee; Konrad-Lorenz Forschungsstelle Grünau; Land Salzburg; Max Planck Institut für Ornithologie Radolfzell; Oasi dei Quadris di Fagagna; Riserva Naturale della Foce dell'Isonzo; Royal Veterinary College London; Stadt Burghausen; Stazione Biologica Isola Cona; Tierarztpraxis Völkendorf; Tierpark Rosegg; Universität Wien, Institut für Zoologie; Veterinärmedizinische Universität Wien, Klinik für Ziervögel, Reptilien und Fische; Vogelwarte Radolfzell; World Association of Zoos and Aquariums (WAZA); WWF Italien; Zoological State Collection Munich; Zoo Vienna.

### TEAM 2013

Accordi Sonia; Aichner Barbara-Maria; Altnöder Ursula; Attenberger Birgit; Báalazc Joo; Berchtold Klaus; Bichler Martin; Brimmer Regine; Chibulski Lara; Cianchi Fabio; Gagliardi Damiano; Derkman Waltraud; Dorfner Monika; Dorfner Renate; Edmann Oriana; Esterer Corinna; Feichtner Gabriele; Fiechter Olivier; Fork Sebastian; Franzke Siegfried & Brigitte; Fritz Johannes; Gönner Bernhard; Hönigsberger Barbara; Hafner Lynne; Kammergruber Eva; Käßler Birgit; Kirtz Angelika; Kirtz Manfred; Kotrschal Kurt; Lell Martin; Liechtenstein Emanuel; Lotz Matthias, Andrea & Stefan Lundt Holger; Maurer Konrad; Meyer Jean; Mühl Stefanie; Perco Fabio; Perco Nicoletta; Pfäffl Barbara; Pfistermüller Regina; Przesang Pablo; Riedler Barbara; Scope Alexandra; Schmalstieg Anne-Gabriela; Schmidt Florian; Schroll Michael; Sommer Evelyn; Spindler Ernst-Josef; Stadter Anette & Hans; Stanclova Gabriela; Strebel Gunter; Trobe Daniela; Trojer Sabrina; Unsöld Markus; Völkl Bernhard; Weindl Josef & Familie; Werner Sinja; Wiener Siegfried; Zickuhr Arvid.