LIFE AEGYPIUS RETURN

REPORT

Deliverable 3.1. Annual report on soft releases and movements of tagged Cinereous Vultures. 2023.

December 2023

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Almost four decades after becoming extinct in Portugal as a breeding species, the Cinereous Vulture (*Aegypius monachus*) returned to colonize the country in 2010, as some birds coming from Spain nested in the Tejo International Natural Park. Thanks to the conservation efforts carried out in both countries by NGOs and government entities, the number of breeding pairs has been steadily increasing. However, the Portuguese population is still too fragile, and its future remains uncertain. The LIFE Aegypius Return project will ensure the definitive return of the species.

https://4vultures.org/life-aegypius-return/

Coordinating beneficiary

VCF VULTURE CONSERVATION FOUNDATION

Associated beneficiaries

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Authors and Contributors

Contributing organizations *(by alphabetical order)*

ATNatureza - Associação Transumância e Natureza
Herdade da Contenda
LPN - Liga para a Protecção da Natureza
Palombar - Conservação da Natureza e do Património Rural
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This report is prepared under Action T.3.2 - *Soft release of Cinereous Vultures from wildlife recovery centres in Portugal to reinforce the Douro Internacional (SPA DIVA) breeding colony*, of the project LIFE Aegypius Return. It summarizes the progress made regarding the objectives of soft-release and the movements recorded by the Cinereous Vultures tagged in Portugal, in 2023.

As the project had its formal kick-off in November 2022, which included a visit to the site where the acclimatization cage would be constructed, this report covers roughly the work done during the first year of the project's implementation.

1. SOFT RELEASE: PLANS AND LICENSING

As soon as the LIFE Aegypius Return project was approved, the partner organization Palombar started working on Action T.3.2 (for which they are the main responsible), which includes the construction of an acclimatization cage. During the project's lifespan, this infrastructure will receive at least 20 Cinereous Vultures coming for wildlife rehabilitation centers in Portugal to enter a soft-release programme.

The LIFE Aegypius Return project was publicly presented on November 4th, 2022 during an event that included a field visit to Fornos (Fig. 1), the site of the acclimatization cage located in the Special Protection Area of Douro Internacional e Vale do Águeda (SPA DIVA, PTZPE0038). In this visit, staff from Palombar presented the charts and architecture plans for the cage. By that time, the necessary licensing requests were also already submitted:

- Municipality of Freixo de Espada à Cinta. Request for the construction of the cage. Approved in February 2023.
- ICNF (National Authority for Nature Conservation). Request for birds' retainment and cage operationalization. Approved in April 2023.

The formal owner of the land where the cage would be installed is the project partner ATNatureza, who have the responsibility of building and implementing the vultures supplementary feeding site (CAAN) that will support the functioning of the cage (Fig. 3) and the birds' acclimatization. Hence, after the previous licenses were signed off, partners Palombar and ATNatureza also signed an agreement on the utilization of the land in May 2023.

Partners ATNatureza submitted the requests for the operationalization of the CAAN to the ICNF and DGAV – Portuguese Veterinary Authority, which were approved in August 2023.

Fig. 1. LIFE Aegypius Return project partners visiting the implementation site of the acclimatization cage in Fornos. 04/11/2023.

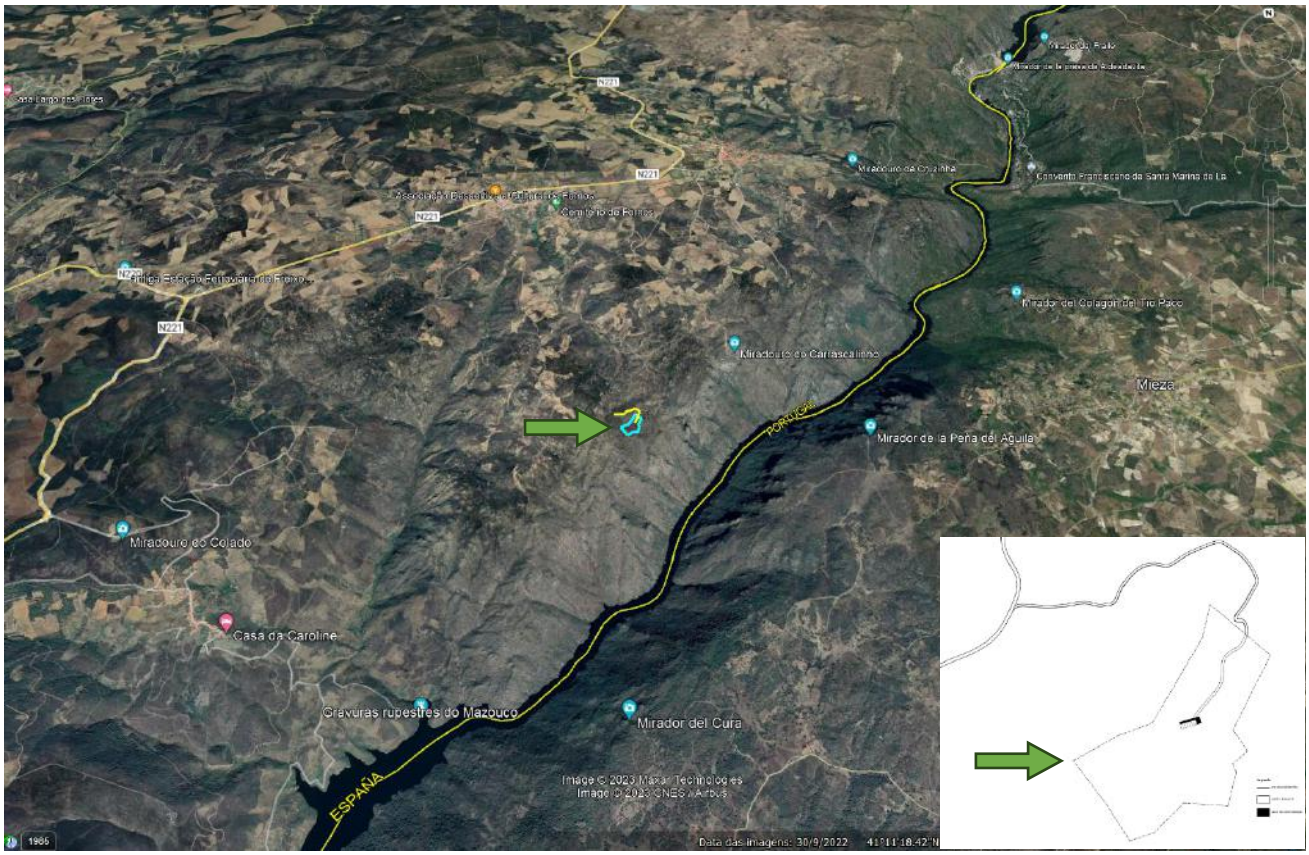

Fig. 2. Implementation site of the LIFE Aegypius Return acclimatization cage, in Fornos, Special Protection Area – Douro Internacional e Vale do Águeda. *Satellite image from Google Earth.*

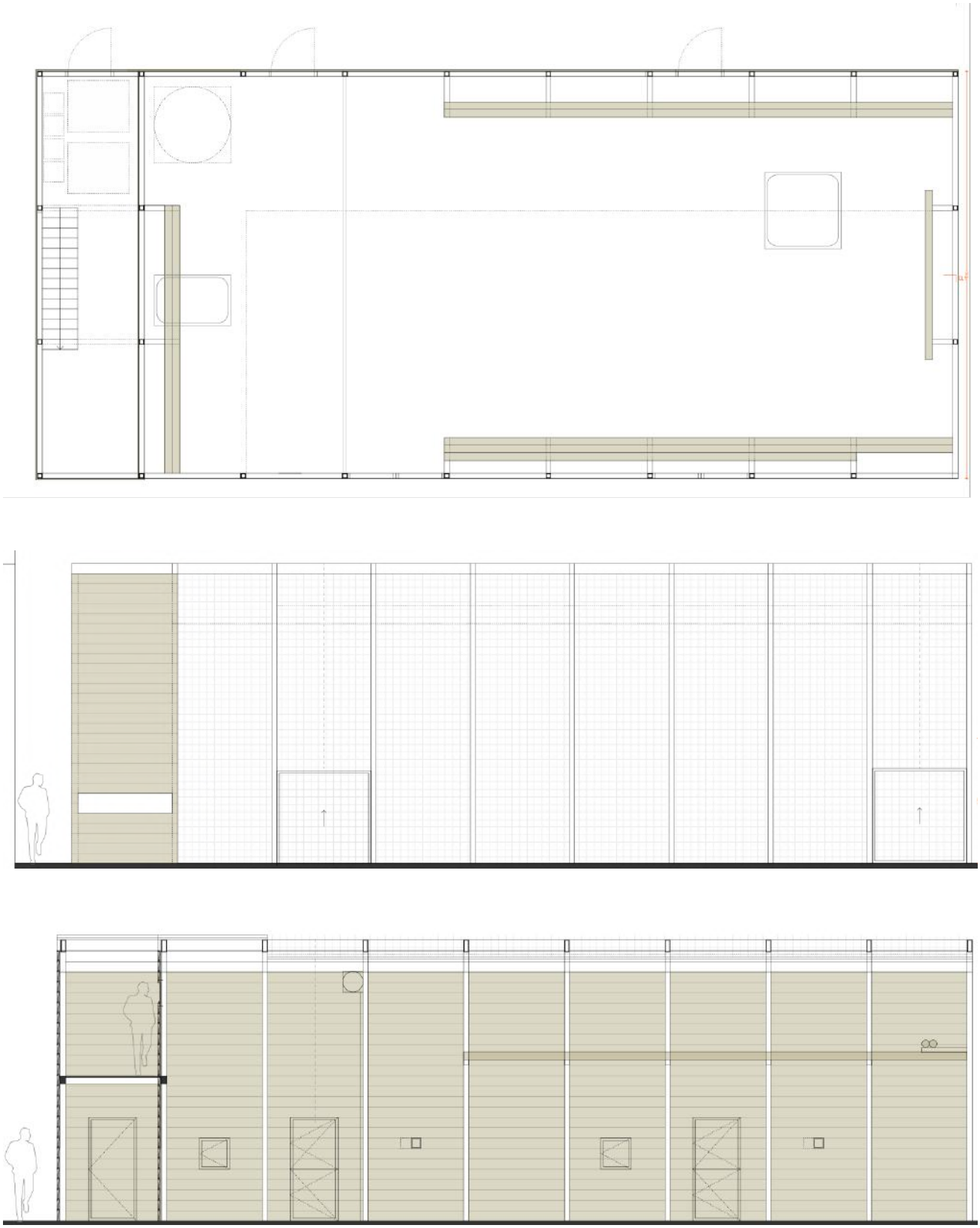

Fig. 3. Architecture plans for the LIFE Aegypius Return acclimatization cage. *Top*: view from top. *Middle*: front view. *Bottom*: rear view.

2. CONSTRUCTION OF ACCLIMATIZATION CAGE

While waiting for the permits, Palombar and ATNatureza started consulting the market, searching for companies to provide budgets for the required work. This process took longer than anticipated, as Fornos is a very remote area, in a rocky setting, and most of the companies were not available to undertake this work. The work required includes the construction of the aviaries *per se*, of a fence around the whole perimeter (Fig. 8), that will also include the supplementary feeding site, a container with a nursey/veterinary support structure, and a renewable (solar) electricity infrastructure that will power the facilities.

In September 2023 staff members from Palombar also participated in an exchange visit to Bulgaria, to discuss with Bulgarian colleagues and see *in loco* similar acclimatization aviaries that were used to soft-release Cinereous Vultures in that country (Fig. 4, 5, 6, 7), as part of Bright Future for Black Vulture LIFE14 NAT/BG/649 Project. As part of that project, a breeding population was successfully restored. These cages will also be used in the consolidation of this reintroduction programme in Bulgaria, that will happen in the recently started LIFE for the Bearded Vulture (LIFE22-NAT-BG-Bearded-Vulture-LIFE/101113869). This visit was very useful to confirm several technical details about the construction, and resulted in a fine tuning of the of the final Terms of Reference for hiring the constructors.

Despite the partner's efforts in market consultation, they only agreed with an adequate company in October 2023. The construction works started immediately after, and to this date (December 2023) are still ongoing. It is foreseen that the cage and CAAN will be finalized by the end of January 2024, when the first Cinereous Vultures can be admitted.

At the moment, four Cinereous Vultures are in the wildlife rehabilitation center of Castelo Branco (CERAS), authorized by the ICNF to enter the soft release programme.

Fig. 4. Acclimatization cage in Vratsa, Bulgaria. ©VCF

Fig. 5. Cinereous and Griffon Vultures in the acclimatization cage of Sliven, Bulgaria. ©VCF

Fig. 6. Acclimatization cage in Sliven, Bulgaria. ©VCF

Fig. 7. Acclimatization cage in Kotel, Bulgaria. ©VCF

Fig. 8. Construction works in Fornos (SPA DIVA), Portugal. *Left*: Acclimatization cage. *Right*: Fence around the acclimatization cage and supplementary feeding site. ©Palombar

Fig. 9. *Top and bottom.* General view of the construction of the acclimatization cage and the fence around the supplementary feeding site. ©Palombar

3. SOFT RELEASE OF CINEREOUS VULTURES

As the acclimatization cage is currently under construction, no Cinereous Vultures were yet released under this scheme. However, four individuals are ready to be admitted as soon as the cage is ready (estimation: late January 2024). These birds are currently at the CERAS wildlife rehabilitation center, in Castelo Branco (Table 1).

Table 1. Cinereous Vultures currently in the CERAS wildlife rehabilitation center and suitable for soft release.

Date of admission	Cause of admission	Region of origin	Age	Metal ring nr
20/04/2022	Malnutrition	Belmonte	Juvenile (2nd year)	1359
29/10/2022	Suspicion of illegal captivity	Évora	Juvenile (2nd year)	1358
27/10/2023	Collision with windfarm turbine	Serra Aire e Candeeiros	Juvenile (1st year)	1337
17/11/2023	Malnutrition	Évora	Juvenile (1st year)	1323

Fig. 10. *Left*: Cinereous Vulture (ring nr 1323) at the CARAS wildlife rehabilitation center, in Évora. ©CARAS. *Right*: Veterinary examination at CARAS. ©LPN/David Delgado

4. TAGGED CINEREOUS VULTURES

In the scope of this report, the reported taggings took place under the project Action T.6.2 *Monitoring of the Cinereous Vulture and assessing the project impact on its population* – since no soft release birds were yet released.

All tagged birds were fitted with an OrniTrack-E50 4G GPS/GSM solar-powered transmitter from Ornitela using natural tubular teflon. Applied tagging methods were either leg loop harness or backpack.

All birds were also marked with a metal ring (from the Portuguese ringing center CEMPA) and a PVC color ring, allowing identification from a distance.

Chicks

During the breeding season of 2023, the four Cinereous Vultures colonies that currently exist in Portugal were closely monitored. All the monitoring and tagging procedures were implemented following a protocol developed under the LIFE Aegypius Return project and signed off by all involved parties. Additionally, all field technicians and taggers involved in the work attended a workshop on tagging techniques that the Project organized in the AMUS wildlife rehabilitation center in Villafranca de los Barros, Spain, in June 2023 (Fig. 11, Fig. 12).

During field monitoring, the teams estimated the age of the chicks to allow for tagging when they reached the adequate size (at about 80 to 90 days). A selection of the most adequate chicks to tag was done, also considering the accessibility and safety conditions needed to reach the nests, built on top of the trees. In total, 15 chicks were tagged. From these chicks, biological samples were also collected, so that a holistic analysis can be performed, including ecological, genetic, haematological, toxicological, and biochemical data.

To this date, one of those chicks (tag number 234020) has already died - apparently drowned in a river in Spain, near Bilbao, hundreds of km from the nest site, and the tag and body were recovered (Fig. 22). A forensic necropsy was done and samples from this bird were sent to a reference lab for toxicological tests to try to determine cause of death. The results from toxicology are not available yet.

Adults

The Project foresees some attempts to capture adult birds – the goal is to capture at least one wild adult from each colony.

To this date, four attempts were performed (one in Malcata, one in Douro Internacional and two in Tejo Internacional), but only one adult individual (Aravil) was successfully captured and tagged, in Tejo Internacional.

Aravil is a male 13-year-old Cinereous Vulture that was ringed as a chick, in the nest, in 2010. It is one of the first two chicks that hatched for the first time, in Portugal, after the species' return to the country, in the Tejo International Natural Park. As a chick, it had fallen from the nest and went missing for about one week. After thorough searches in the woods, it was found, and was put back on an artificial nest by some biologists that are now part of the LIFE Aegypius Return project. The parents immediately arrived and took care of the chick, who was now recaptured in the same area, over 13 years later. As an adult and since its tagging (09/12/2023) the bird remains in its hatching area (Fig. 26).

Rehabilitated Cinereous Vultures

Since the beginning of the project, two birds (Zimbro and Gerês) coming from wildlife rehabilitation centers in Portugal were tagged and released.

Zimbro, a male Cinereous Vulture, hatched in the wild in 2021 in an unknown location. Later that year, he was found weak in central Portugal and entered the Wildlife Rescue Centre in Lisbon (LXCras). It took almost one

year of treatment and physiotherapy under the attentive care of the veterinary team for Zimbro to recover fully. Rehabilitated in December 2022, he was transferred to CIARA, in northern Portugal, to regain his flight practice and needed musculature. Finally, on 21 March 2023, Zimbro was tagged and released in Northeastern Portugal and shortly after flew to Spain. He has been wandering in the province of Zamora, Spain, since then (Fig. 27).

Gerês, also a male, hatched in 2022 and was unfortunately shot in October that year, in the Gerês National Park, Portugal. He entered the wildlife rescue centre at the Veterinary Hospital of the University of Trás-os-Montes and Alto Douro (CRAS-HVUTAD) with a broken wing. After orthopaedic surgery and veterinary treatment, he was also transferred to CIARA to restore his flying skills. Gerês was tagged and released on August 10, 2023, in the same place as Zimbro (Miradouro do Carrascalinho). He was intensively exploring the Douro International Natural Park and died a week after the release. The dead body was retrieved (Fig. 21) by partners Palombar and the ICNF, on a Douro cliff, and sent to necropsy. The results and cause of death are not available yet.

Table 2. Cinereous Vultures tagged under the LIFE Aegypius Return project, in 2023, and respective identification and status data.
Colonies – Douro: Douro Internacional (PTZPE0038); Malcata: Serra da Malcata (PTZPE0007); Tejo Int: Tejo Internacional (PTZPE0042); Contenda: Herdade da Contenda (PTZPE0045).

	Date of tagging	Colony	Age	Origin	Bird name	Metal ring nr	Tag nr	Status on 21.12.2023	Tag retrieved?	Notes
1	21/03/2023	Douro	Juvenile	Rehab	Zimbro	1236	215888	Alive		
2	01/07/2023	Douro	Chick	Nest	Freixo	1652	215607	Alive		
3	01/07/2023	Douro	Chick	Nest	Juniperus	1653	215609	Alive		
4	02/07/2023	Malcata	Chick	Nest	1X	1612	234021	Alive		
5	02/07/2023	Malcata	Chick	Nest	1T	1613	201437	Alive		
6	03/07/2023	Malcata	Chick	Nest	1U	1614	234020	Dead	Yes	Found dead in a river near Bilbao, Spain 04/10/2023.
7	03/07/2023	Malcata	Chick	Nest	1V	1615	234032	Unknown		Tag failure - did not send any information.
8	04/07/2023	Tejo Int	Chick	Nest	Roselha-grande	1332	203507	Alive		
9	04/07/2023	Tejo Int	Chick	Nest	Sérgio	1334	234023	Alive		
10	04/07/2023	Tejo Int	Chick	Nest	Rosmaninho	1335	234024	Alive		
11	05/07/2023	Tejo Int	Chick	Nest	Rosa-albardeira	1329	234034	Alive		
12	05/07/2023	Tejo Int	Chick	Nest	Aroeira	1330	234036	Alive		
13	06/07/2023	Tejo Int	Chick	Nest	Aquis	1322	234037	Alive		This chick had strange lump over the left eye, hence went through surgery and recovery in CERAS rehab center. Released 19/09/2023.
14	13/07/2023	Contenda	Chick	Nest	1W	1616	234022	Alive		
15	13/07/2023	Contenda	Chick	Nest	1Y	1617	234025	Alive		
16	14/07/2023	Contenda	Chick	Nest	2J	1618	234033	Alive		
17	10/08/2023	Douro	Juvenile	Rehab	Gerês	1654	234017	Dead	Yes	Rescued with gunshot 21/10/2022. Entered rehab. Released 10/08/2023. Died 16/08/2023. Found dead 24/08/2023 on a cliff.
18	09/12/2023	Tejo Int	Adult	Wild	Aravil	MT368	234031	Alive		13 y.o. adult first ringed in the nest as a chick, in 2010, in Tejo Int.

Fig. 11. Workshop on tagging techniques held in AMUS, Spain, 23/06/2023. ©VCF

Fig. 12. Group picture after the workshop on tagging techniques held in AMUS, Spain, 23/06/2023. Project partners, taggers and staff from AMUS. ©VCF

Fig. 13. Adult Cinereous Vulture and chick on the nest at Tejo International Natural Park. 30/09/2023. ©SPEA/Paulo Monteiro

Fig. 14. Cinereous Vulture chick being tagged at Herdade da Contenda, 13/07/2023. ©VCF

Fig. 15. Preparation of Cinereous Vulture tagging and biological samples collection material on a cliff of the Douro International Natural Park, 01/07/2023. ©Palombar

Fig. 16. Veterinary exam of a Cinereous Vulture chick that was tagged in Malcata, 03/07/2023. ©ATNatureza/Eduardo Alves

Fig. 17. Aquis, a Cinereous Vulture chick from the Tejo International colony that had an infection over the left eye and was sent to examination in the CERAS rehabilitation center. 06/07/2023. ©SPEA/Paulo Monteiro

Fig. 18. Aquis, a Cinereous Vulture chick from the Tejo International colony that had an infection over the left eye and was sent to examination in the CERAS rehabilitation center. *Left*: during surgery. *Right*: after surgery. ©Quercus/CERAS

Fig. 19. Release of the Cinereous Vulture Zimbro at the Douro International Natural Park, 21/03/2023. ©Manuel Nunes

Fig. 20. The Cinereous Vulture Zimbro flying over the Douro International Natural Park, after its release. In the picture, the GPS tag is visible, on the birds' back. 21/03/2023. ©Manuel Nunes

Fig. 21. Retrieve of the dead body of Gerês, a Cinereous Vulture that died in the Douro International Natural Park, 24/08/2023. ©Palombar

Fig. 22. Retrieve of the body of a dead Cinereous Vulture that hatched in Malcata in 2023 and died near Bilbao, Spain, 04/10/2023.

Fig. 23. One of the two first Cinereous Vultures that hatched in Portugal in 2010, after the species' return to the country. *Left*: Veterinary examination at site of discovery. *Right*: Cinereous Vulture recovering at the CERAS rehab center. 2010. ©Quercus/Samuel Infante

Fig. 24. Aravil, a 13-year-old Cinereous Vultures that hatched in Portugal in 2010, after the species' return to the country, after its tagging and release at the Tejo International Natural Park, 09/12/2023. ©Quercus/Samuel Infante

5. MOVEMENTS OF THE TAGGED BIRDS

All but one GPS tag delivered data after tagging. One tag (ID 234032) which was used to mark the chick with the metal ring ID 1615 never transmitted data after deployment. Most likely the missing GSM reception at the nest site (low-signal valleys in Serra da Malcata) drowned the battery of the tag, which did not recover. 14 birds are currently still sending data and informing us about their movements. See section above (Table 2) about the death of two birds (1U and Gerês).

Table 3. Deployment period (from fledging of chicks or release of older birds) and number of data points collected. The differences in number of fixes is due to the different battery charge level for different tags.

Animal ID	Start deployment	End deployment	Number of locations (till 21.12.2023)
1T	06.08.2023	active	8054
1U	19.08.2023	03.10.2023	7071
1W	15.08.2023	active	31780
1X	13.08.2023	active	27638
1Y	16.08.2023	active	33281
2J	16.08.2023	active	32476
Aquis	19.09.2023	active	22644
Aravil	09.12.2023	active	2855
Aroeira	13.08.2023	active	35125
Freixo	01.07.2023	active	3133
Geres	10.08.2023	23.08.2023	1359
Juniperus	27.07.2023	active	12849
Rosa-albardeira	29.08.2023	active	32171
Roselha-grande	12.08.2023	active	14917
Rosmaninho	14.08.2023	active	34073
Sergio	13.08.2023	active	32909
Zimbro	21.03.2023	active	1138006

Most of the tagged chicks remained close to their hatching regions (Fig. 28, Fig. 29). However, in December 2023, Juniperus, who hatched in the northernmost colony (Douro International), flew towards the southern part of Portugal, where he remains until the day of reporting (22.12.2023; Fig. 25).

The only adult tagged – that is actually the first and only wild adult Cinereous Vulture ever captured in Portugal, Aravil, also has been around the Tejo International Natural Park, where he hatched and also where he was captured (Fig. 26).

Zimbro, the rehabilitated juvenile hatched in 2022, has been between the Douro (Portugal) and Salamanca (Spain) regions, not roaming too far (Fig. 27, Fig. 30).

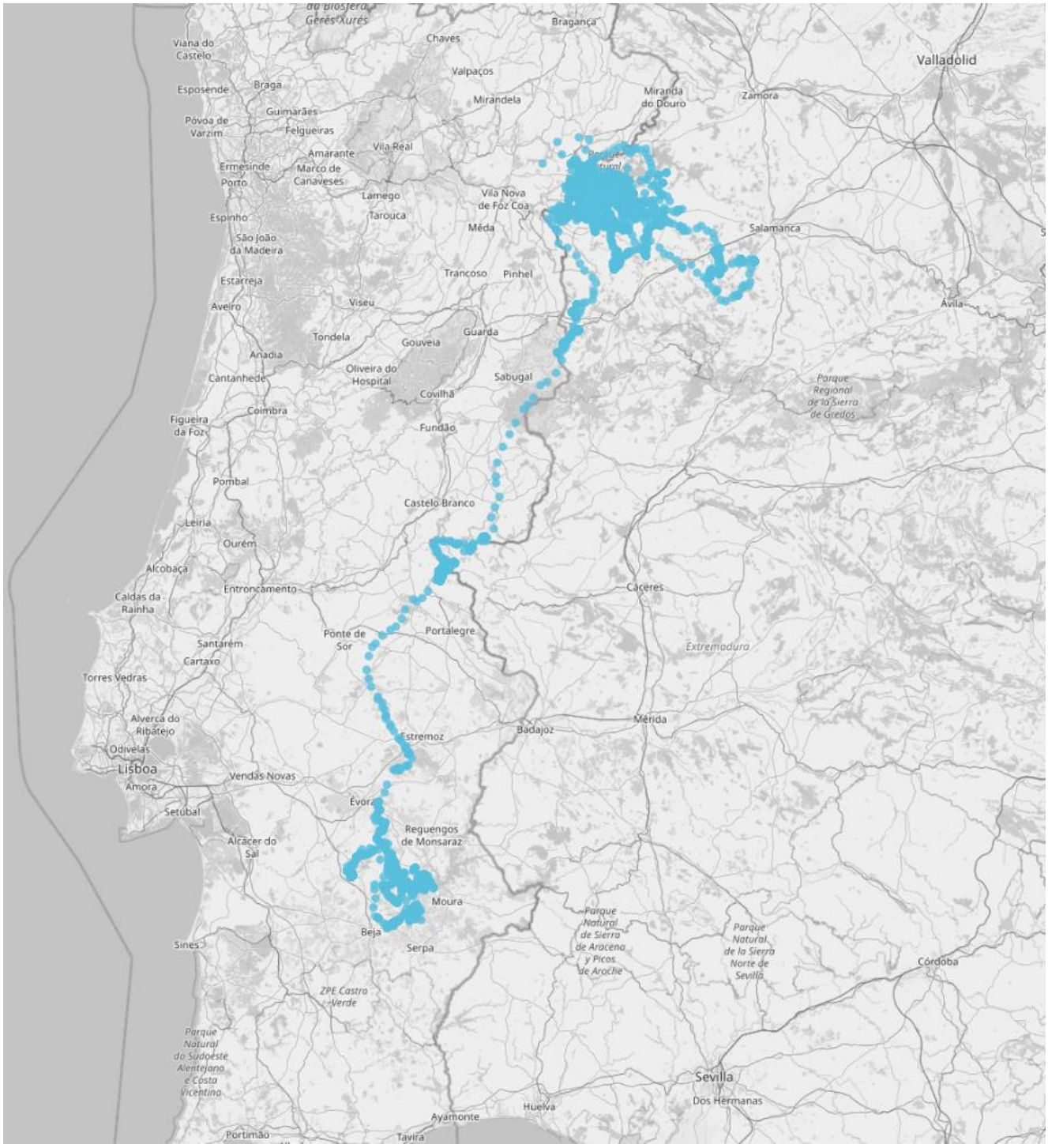

Fig. 25. Map of the movements of Juniperus, a juvenile marked in the nest in 2023, at the Douro International colony.

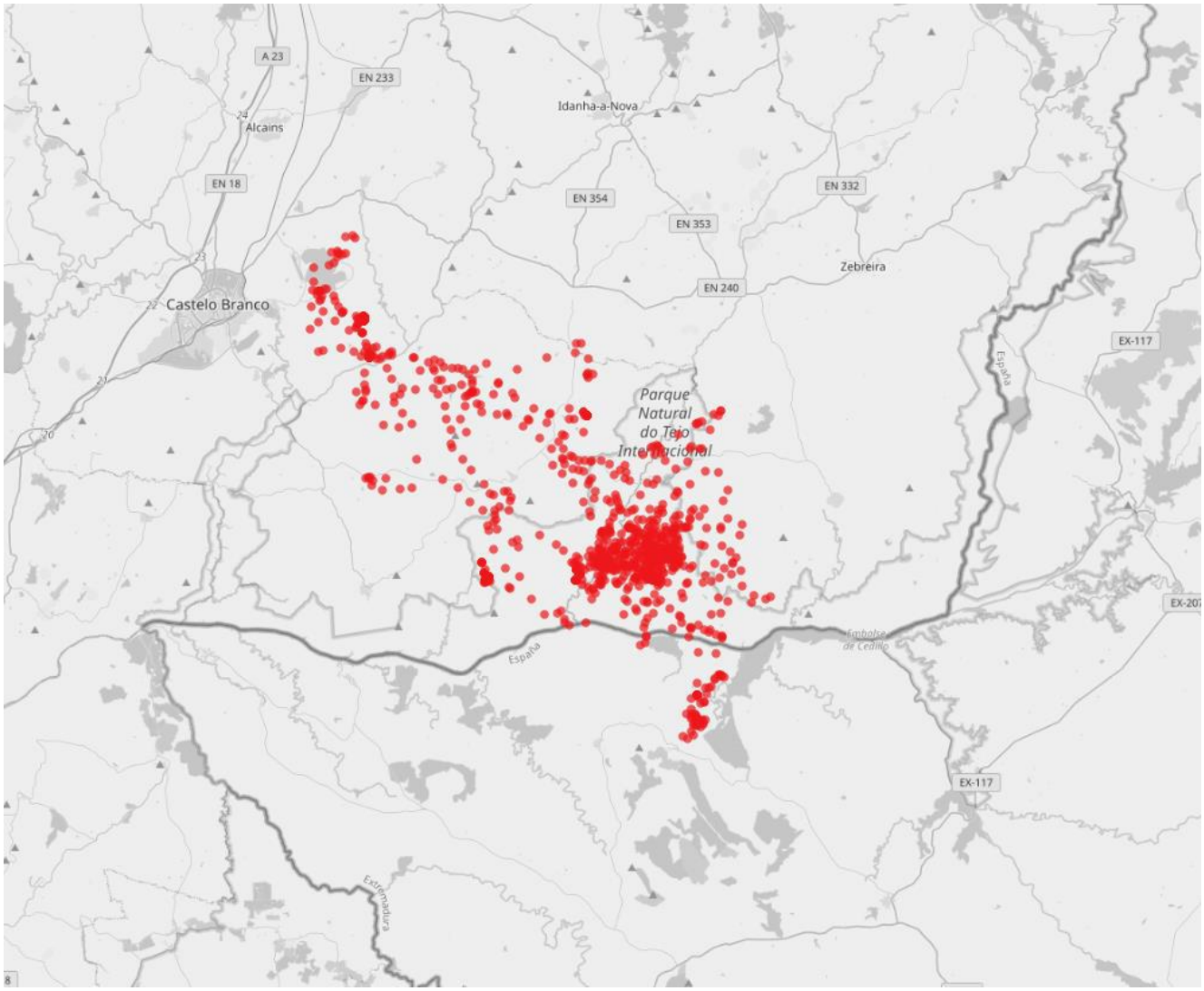

Fig. 26. Map of the movements of Aravil, an adult Cinereous Vulture marked in the nest in 2010, at the Tejo International colony, and recaptured in 2023 in the same area.

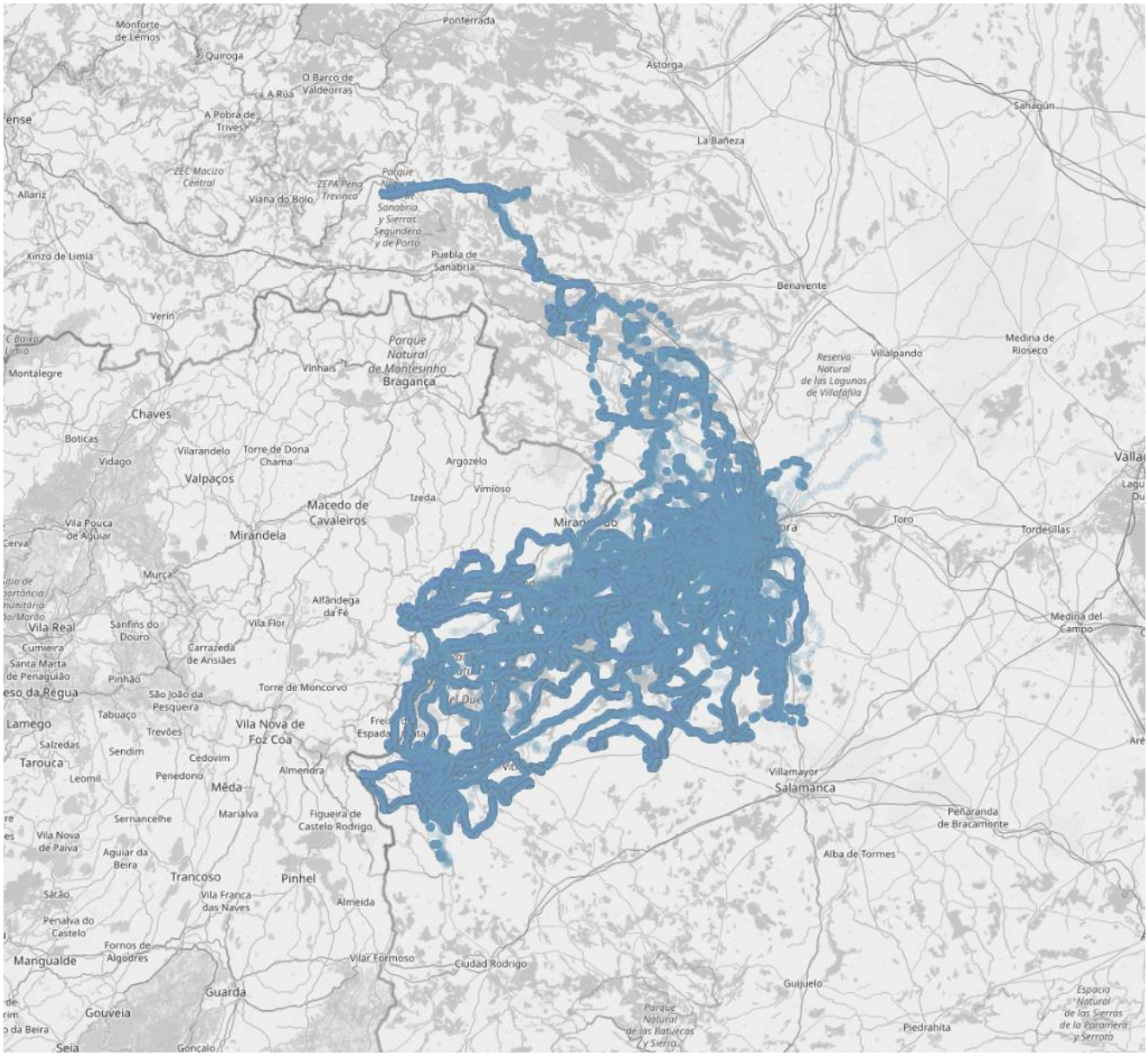

Fig. 27. Map of the movements of Zimbro, a juvenile who went through a rehabilitation process and that was tagged and released on March 2023, at the Douro International colony.

Two birds (Juniperus (light blue) and 1U (red), Fig. 28) made bigger excursions to a different area of the Iberian Peninsula. Unfortunately, the bird 1U was recovered dead in a river (see above) near Bilbao. The data transmitted from the GPS tag alerted the LIFE project team and a local search team was sent to the location (Fig. 22). This shows how important GPS tagging of these vultures is to identify their fate, survival and mortality reasons.
Juniperus moved from the northern colony south and remained in this area since.

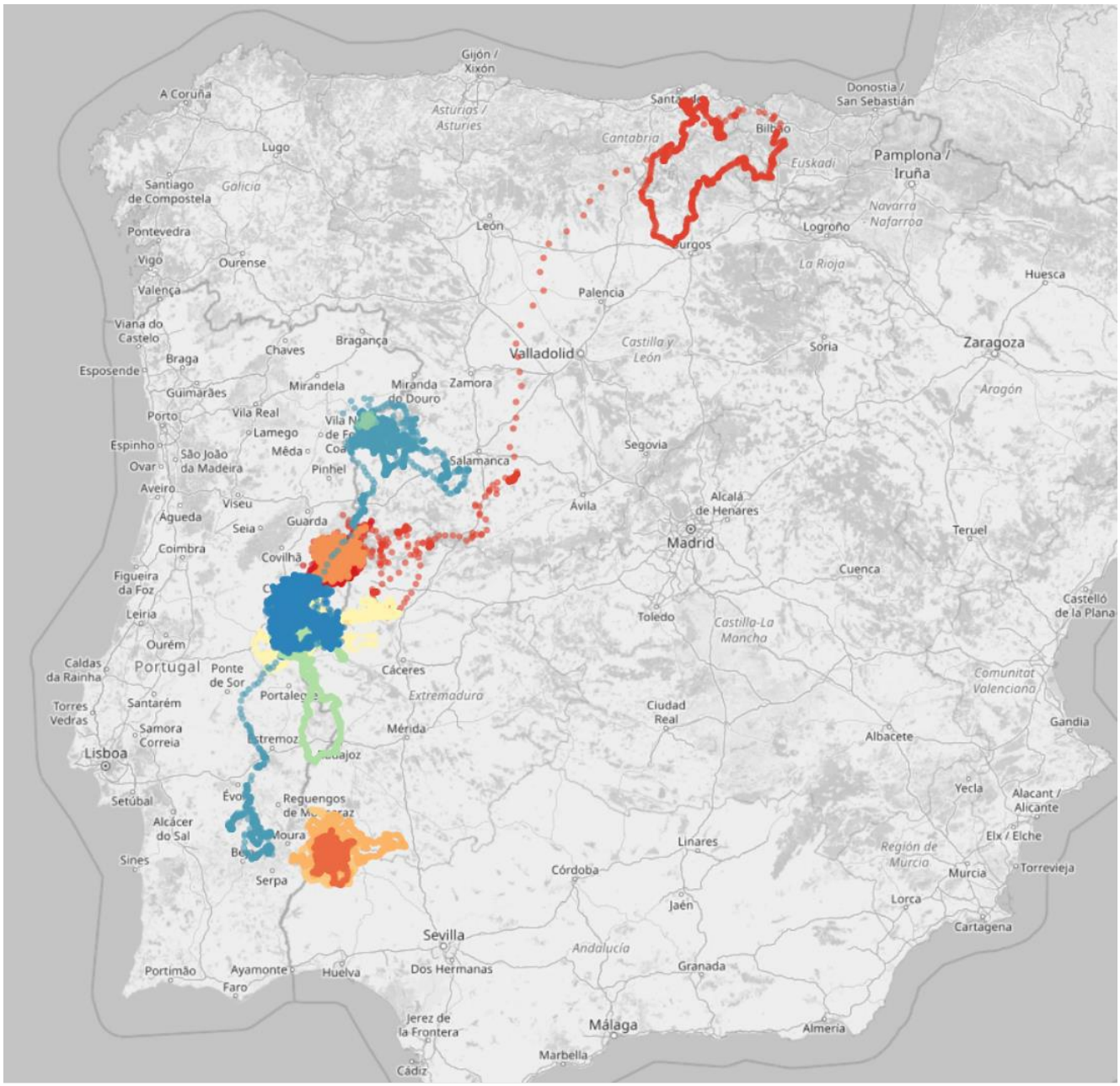

Fig. 28. Movements of 14 juvenile birds marked in the nest in 2023. Most birds remained in the area.

The map on Fig. 29 shows the 99% (yellow), 95% (orange), and 50% (red) Kernels of the juvenile birds marked in the nest in 2023. It reflects the colonies and shows that most juvenile birds remained in their hatching colony. It will be interesting to evaluate if and when they leave the colony and where they go.

The most used areas (orange and red areas) are for the southernmost colony on the Spanish side. Whereas for the colonies further north, the area which is mainly used is more equally distributed between Spain and Portugal.

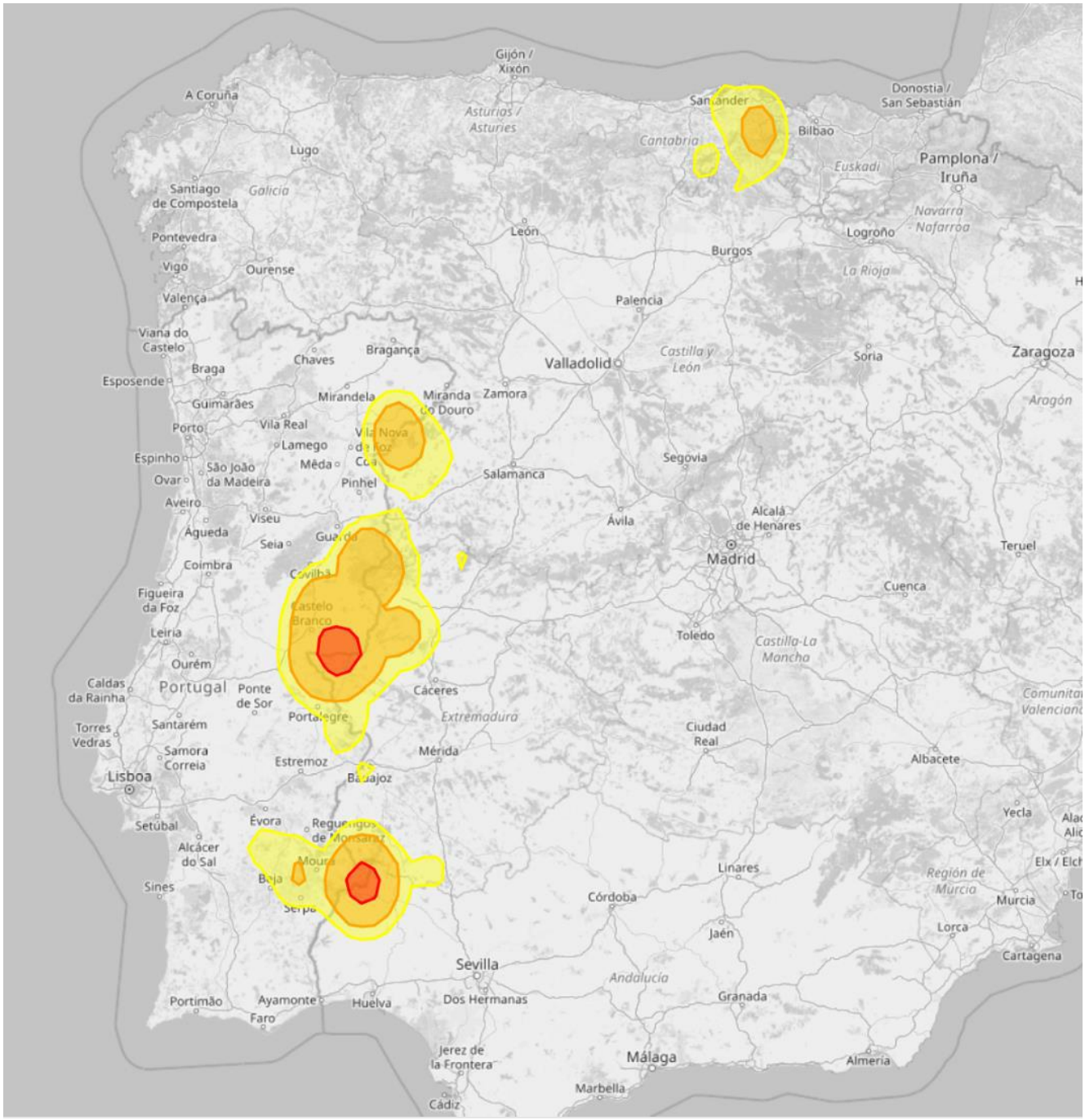

Fig. 29. Kernel area of the juvenile birds marked in the nest in 2023: 99% (yellow), 95% (orange), and 50% (red) Kernels.

Zimbro (Fig. 27, Fig. 30) has the longest tracking period and therefore collected the biggest number of GPS fixes. On the other hand, Geres and Aravil had the shortest tracking period so far. We can expect, if Aravil is breeding, that he will not move large distances. The next breeding season will inform us about this.

The data from these 18 birds, with 17 working tags, already gave us valuable information on the wellbeing of the birds and for mortality detection. The utility of these data for e.g. habitat-use-analysis, long distance movements, differences in movements between different birds based on several factors like age and sex, will be shown in the future, when this data will be used for research planned in the LIFE project.

Fig. 30. Movement during 2023 of Zimbro (blue), Geres (pink), and Aravil (red). Zimbro has the longest tracking period and therefore accumulated the highest number of fixes. Geres died not even two weeks after tagging and Aravil is only tagged since two weeks, but doing well.