INTERNATIONAL
BEARDED VULTURE
MONITORING

IOD 2017

12th INTERNATIONAL BEARDED VULTURE OBSERVATION DAYS

FOCAL DAY OCTOBER 7th 2017

PERIOD OCTOBER 7th-15th 2017

Imprint

Author Mirco Lauper

Version 01/06/2018

Recommended form of citation
Lauper, M (2018): 12th International Bearded Vulture Observation Days - IOD 2017. Survey report, International Bearded Vulture Monitoring (IBM); ed. Vulture Conservation Foundation. pp 1-39.

The IOD 2017 were organised by the following IBM-members[1] and associated organisations[2]:

ASTERS (CONSERVATOIRE D'ESPACES NATURELS HAUTE-SAVOIE) [1]

LPO GRANDS CAUSSES [1]

NATIONALPARK HOHE TAUERN [1]

PARC NATIONAL DE LA VANOISE [1]

PARC NATIONAL DU MERCANTOUR [1]

PARC NATUREL REGIONAL DU VERCORS [1]

PARCO NATURALE ALPI MARITTIME - WAON [1]

PARCO NAZIONALE DELLO STELVIO / NATIONALPARK STILFSERJOCH [1]

REGIONE AUTONOMA VALLE D'AOSTA & PARCO NAZIONALE GRAN PARADISO [1]

STIFTUNG PRO BARTGEIER / FONDATION PRO GYPAÈTE [1]

VAUTOURS EN BARONNIES [1]

VULTURE CONSERVATION FOUNDATION [1]

ENVERGURES ALPINES [2]

PARC NATIONAL DE CÉVENNES[2]

JUNTA DE ANDALUSIA [2]

LPO AUDE[2]

TABLE OF CONTENT

ABSTRACT

Between the **7th and 15th of October 2017,** the International Observation Days (IOD), an annual bird watching event for bearded vultures, took place for the 12th time. This monitoring action is organised by the International Bearded Vulture Monitoring network (IBM) and covers the whole Alpine arc (since 2006), parts of the Massif Central (since 2012) and the eastern part of the Pyrenees (since 2016). In addition, the IOD were organised for the first time in Andalucía and Castilla y León this year – which is a further important step towards a range-wide monitoring of the European bearded vulture population.

A monitoring action of this scale and the fact that birds are identified on an individual level whenever possible, is unique and generates baseline information for survival analyses and demographic modelling, which give valuable insight into the reintroduction progress. With the expansion of the IOD, the public awareness for this flagship species and its conservation is growing every year. This is an important element for the long-term success of the restoration and reintroduction programs for bearded vultures in Europe.

With very favourable weather conditions at all of the **573 observation sites**, more than **920 observers,** 160 more than 2017, participated at the annual survey and reported more than **530 bearded vulture observations**. The successful implementation of our large-scale survey is strongly dependent on the work and expertise of the regional coordinators. Their background knowledge and their familiarity with the local situation enables them to evaluate the IOD-observation data and give an estimate about the population size in their region. These estimates and the observations were compiled, evaluated and summarised over the entire monitoring area in order to get an overview of the age class distribution and to compare the estimates on the alpine scale with the predicted population size from demographic modelling (Schaub et al. 2009)[1].

On an Alpine scale, the analyses of the regional coordinators revealed a **minimal and maximal bearded vulture population size of 208 and 251 individuals, respectively, in the Alpine range**, based on a combination of the observation data collected during the focal day (2017/10/07) and the knowledge about individuals that have not been observed but are supposed to be present in the region (territorial birds, in some exceptional cases also their fledglings, GPS-tagged birds etc.). The **estimated age class distribution** is fairly well in line with the predicted values of the demographic model[1] with the exception of the subadult birds, which are difficult to identify correctly in the field (**56% adults, 4% subadults, 21% immature, 4% juveniles**).

In the **Massive Central the estimated population size is six individuals**, and **at least five, possibly six, different individuals have been observed in the Aude region of the French Pyrenees**. However, so far there is no evidence that bearded vultures are migrating between these two separated populations on a regular basis. The IOD in Andalusia and Castilla y León revealed a **minimal and maximal number of 22 and 33 different bearded vultures**, respectively, for the **monitoring area in and around the region of Jaèn (ESP).**

Thanks to the IOD **70 bearded vultures could be identified on an individual level**, which provides valuable information about the life-history and survival rates of these birds. With 56 identifications in the Alps, this comprises around one fifth of all birds, estimated to be present in the Alpine range, and contributes to the unique data collection of the IBM, which is monitoring the development of this reintroduction project since 1999.

[1] Schaub, M., Zink, R., Beissmann, H., Sarrazin, F., & Arlettaz, R. (2009). When to end releases in reintroduction programmes: demographic rates and population viability analysis of bearded vultures in the Alps. *Journal of Applied Ecology*, *46*(1), 92-100.

BACKGROUND

During the International Observation Days (IOD) volunteers and experts search for bearded vultures throughout the Alps and surrounding areas in a simultaneous and coordinated survey. This, in conjunction with other monitoring data, allows us to get an estimate of the number of bearded vultures living in the Alps and the Massif Central. In particular, the joint efforts across the Alps allow to distinguish between bearded vulture individuals thus providing basic data for estimating population numbers. Further, these observations provide essential data for building and improving demographic models which enable us to assess the success of the reintroduction project. Furthermore, the observation days represent a big public event that helps to increase the awareness for this endangered species.

METHODS

Organisation

The monitoring is planned and executed simultaneously over all the alpine territories, in the Massif Central and in parts of the French Pyrenees (*see Fig. 1*) by local partners. This ultimately allows us to gain information about bearded vulture presence thus avoiding/reducing the chance of double counts and allowing us to get the big picture of bearded vulture distribution. In 2017, our Spanish colleagues also organised the IOD within parts of Andalusia and Castilla y León with the aim to share their results with the IBM-network and to contribute to get a wider picture about the bearded vulture population within Europe.

Area

A network of partners allows to cover a large proportion of the area in the Alpine arc and the Massif Central (*Fig. 1*). As in the previous year, monitoring was expanded towards the Pyrenees (department Aude in France) in order to reveal exchanges between the separated populations. For the first time, data from Spanish observation sites in National Park Sierra Nevada, Sierra de Gredos, and Parque Natural de Cazorla, Segura y las Villas is included in the IOD report.

Time Period

The 2017's international survey was held between the 7th and the 15th October with the focal day on Saturday 7th. The buffer period of one week is chosen to allow more flexibility for areas where the weather conditions are not suitable on the focal day. All dates are decided on mutual agreement among the IBM partners and take into account partner's availability, other ornithological appointments and the birds' reproductive behaviour. The fact, that bearded vultures are active in nest building, makes this a suitable period to observe the birds and record possible new territories and breeding pairs.

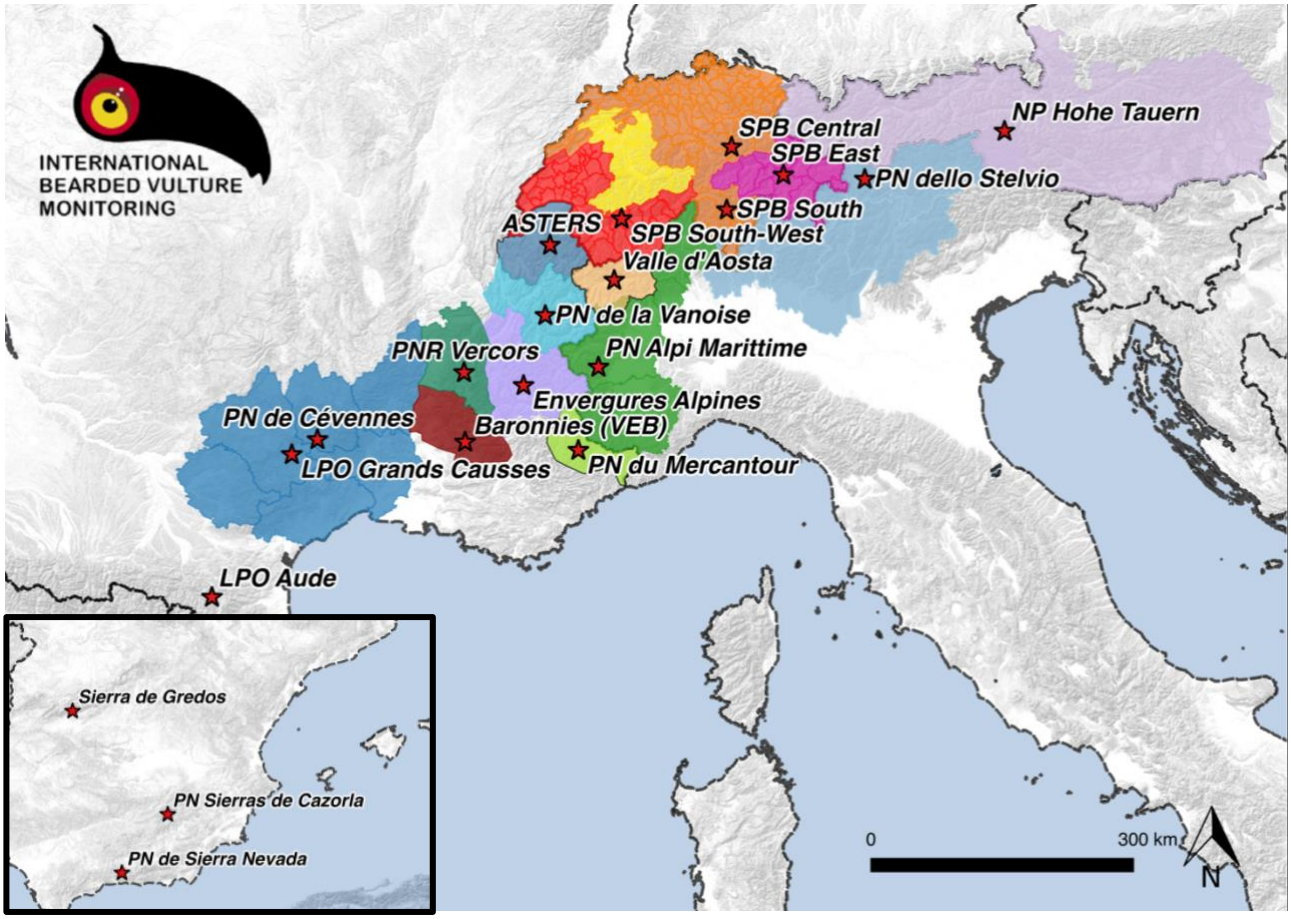

Figure 1: IBM partners and associated organisations taking part in the International Observation Days 2017. The coloured areas define the areas of responsibility for each official IBM partner. In 2017, the IOD were also conducted in the region Jaèn in Andalusia and Sierra de Gredos (small map on bottom left).

Data collection and observation protocol

The survey took place between 10:00 am and at least 15:00 pm. For each observation site and bearded vulture sighting the following information was recorded:

Observation site:

- date
- team/partner
- site name, address and coordinates
- site occupancy (time)
- weather conditions
- total number of observed bearded vultures
- presence/observation of other species
- observer name

Bird observation:

- date
- time and duration of the observation
- age of the bird[2]
- bird name / hypothesis
- picture if possible

The teams are composed of one or more observers, at least one of them being experienced, equipped with binoculars and, depending on availability, telescope and camera.

[2] *In age classes: juvenile (1.cy), immature (2.-3.cy), subadult (4.-5.cy) adult (≥6.cy)*

Data Analysis

All data is collected at the end of the day by the local administrator who will review the reported observations. The local administrators work in close cooperation with field assistants/ observers and other nearby local administrators responsible for the surrounding monitoring areas. Based on for example individual markings, temporal overlap of the sightings, knowledge about known territorial birds and their juveniles that still remain in the area, they are able to critically assess the number of observations and judge to how many individual bearded vultures the IOD observations refer to.

Since it is not always possible to assess whether several observations have been made of the same individual, the final estimate includes a minimal and a maximal count number, namely accounting for a stricter versus a less conservative analysis.

After a critical assessment of possible double counting, these results are summarised over the whole monitoring area in order to get an overview of the estimated bearded vulture population in the alpine range and the Massif Central. Finally, the resulting population estimates of the IOD are compared with the estimate that can be deduced from the demographic model of Schaub et al. (2009).

RESULTS AND DISCUSSION

Weather conditions

The year 2017 was a year with exceptionally good weather conditions for bearded vulture observations. 100% of the observations sites in the Alpine range, the Massif Central, the Pyrenees and in Spain reported favourable weather conditions (*Fig. 2*). Such weather conditions increase the detection probability of the individuals and are therefore very good prerequisites for a realistic estimation.

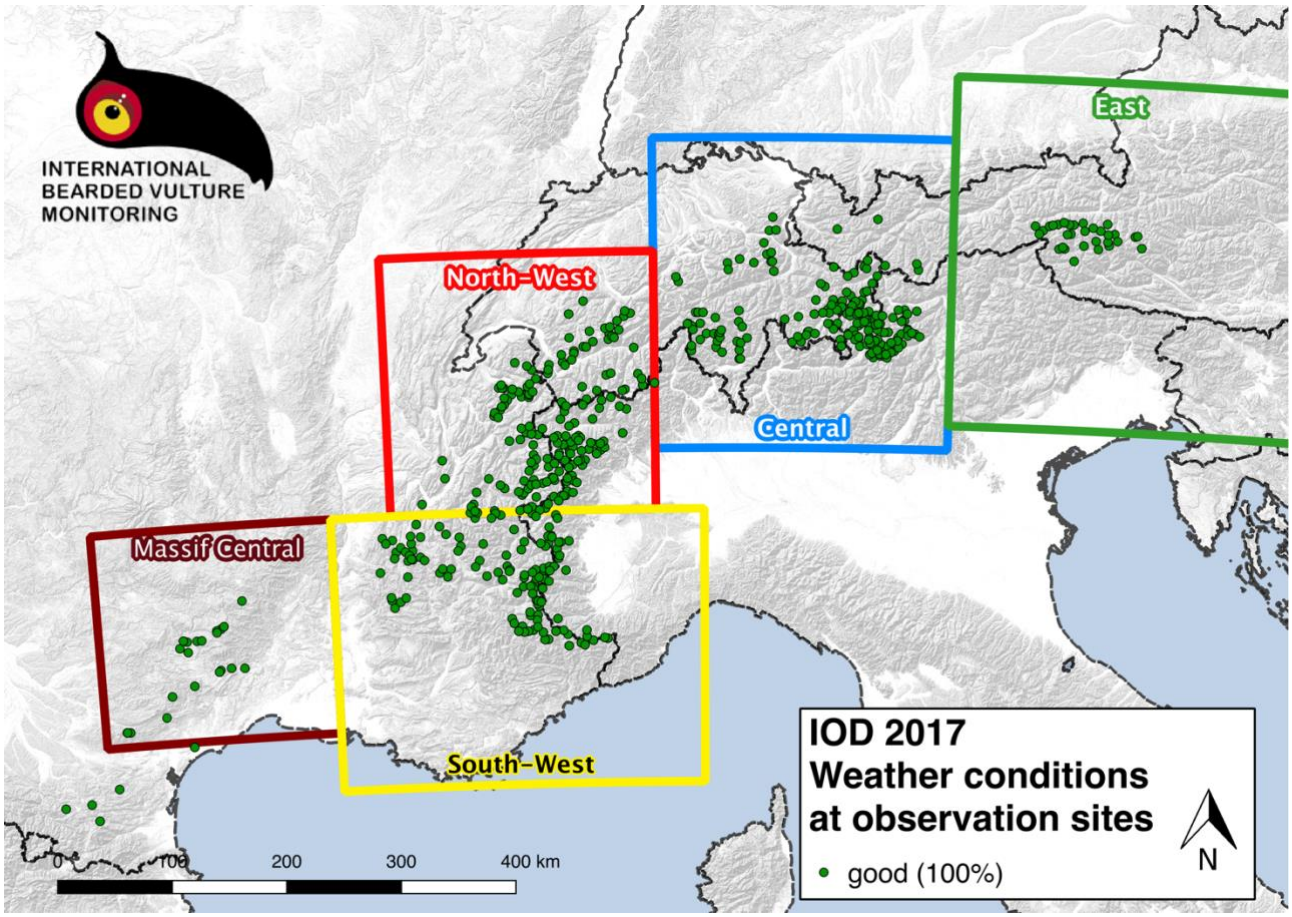

Figure 2: Weather conditions at the observations sites reported by the observers in the field during the IOD 2017. Good weather conditions were reported at all observations sites (100%), also at all observation sites in Spain (not on this map).

Monitoring effort and success

In 2017, a total of **923 observers** have occupied **573 observation sites** spanning throughout the Alps, the Massif Central, close to the Pyrenees in the department "Aude", parts of Andalusia and Castilla y León (*Fig. 3 and Table 1*). The area covered by the observers during the IOD has increased over the years. However, it has not been possible to cover the complete Alpine range (~188.000 km2) simultaneously (*Fig. 3*).

As in the previous years, the Western regions of the Alps remain the most thoroughly surveyed areas together with the area of the Stelvio National Park in the North of Italy. With additional observation sites close to the Spanish border near the Pyrenees the IBM monitoring network plans to cover regions that might serve as a connection between the bearded vulture populations from the Alps and the Pyrenees.

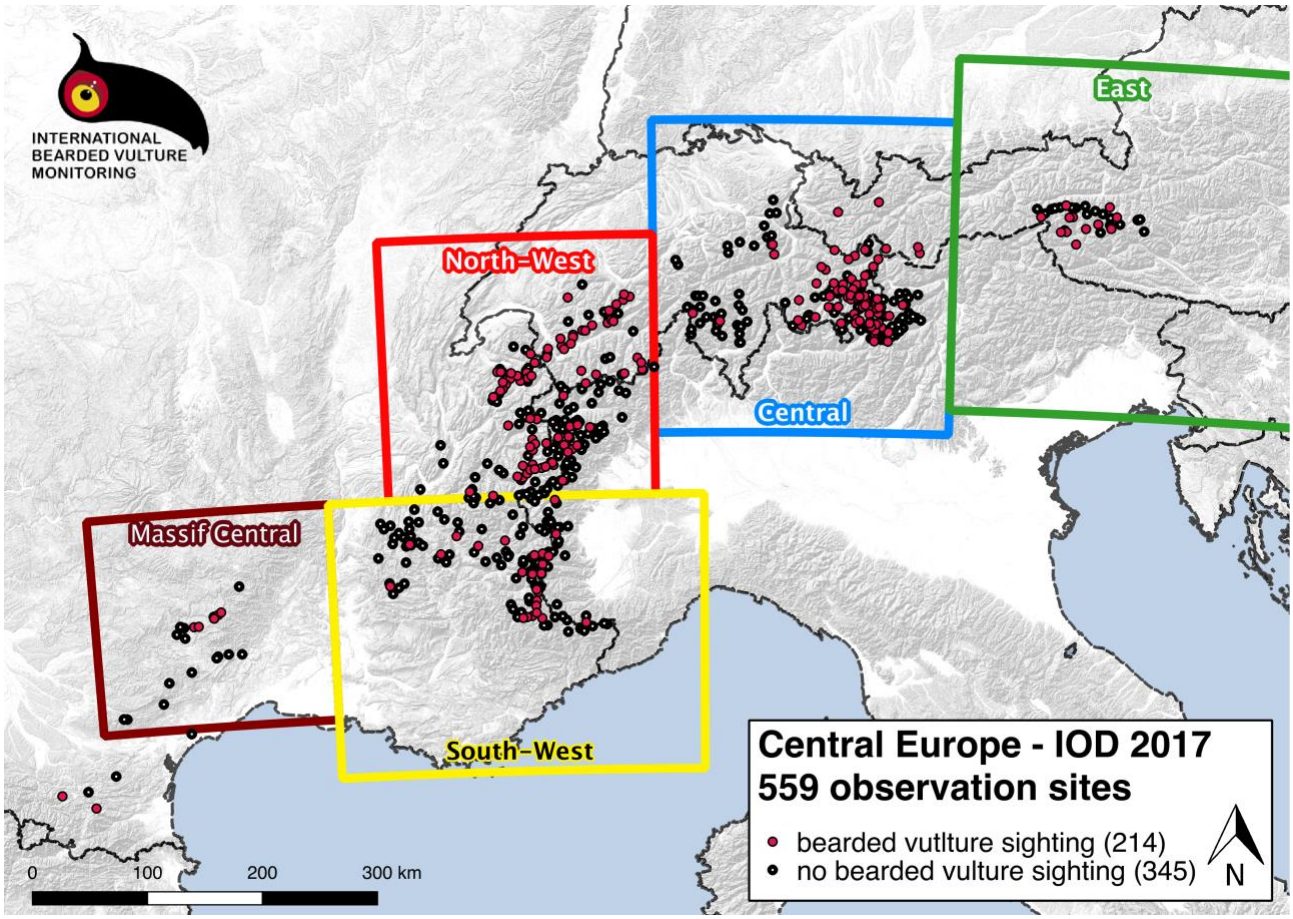

Figure 3: Map of the Alps, the Massif Central and parts of the Pyrenees and locations of all observation sites during the IOD 2017. Red dots depict those sites where bearded vultures have been observed at least once during the IOD period 7.-15. October 2017 while no observations have been reported from sites marked with black small circles. For details concering Spain see figure 11.

Table 1: Number of observation sites (sites) and observers for each region during the IOD 2017. In the bottom lines the results of the three previous years that highlight a continuous increase of monitoring effort.

	Sector	Country	Region	Sites	Observers
Alps	*Eastern*	Austria	Hohe Tauern NP	37*	34**
	Central	Italy	Stelvio NP	91	179
		Switzerland	Engadin	49	59
		Switzerland	Central Switzerland	16	28
		Switzerland	Ticino	29	42
	North-Western	Switzerland	Wallis & Berner Oberland	41	65
		France	Haute Savoie	28	57
		France	Savoie	38	60
		Italy	Valle d'Aosta & Gran Paradiso NP	51	51
	South-Western	France	Vercors NP	20	35
		France	Mercantour	39	77
		France	Dauphiné	41	98
		France	Baronnies	6	9
		Italy	Alpi Marittime - WAON	46	61
Massif Central		France	Grands Causses & Cevénnes	22	37
Pyrenees		France	Aude	5	10
Spain		Spain	Andalusia & Castilla y León	14	21
	Total 2017			**573**	**923**
	Results 2016			528	774
	Results 2015			496	708
	Results 2014			*415*	*634*
	Results 2013			*437*	*596*

** several observers occupied more than one site on different days during the IOD period*
*** simultaneous chamois survey with 400 hunters, which were also looking out for bearded vultures at the same time*

Table 2: Number of bearded vulture sightings for each region during the whole IOD period 2017. In the grey box the results for the focal day.

				October 2017									
	Sector	**Country**	**Region**	**7.**	**8.**	**9.**	**10.**	**11.**	**12.**	**13.**	**14.**	**15.**	**Total**
Alps	Eastern	A	Hohe Tauern NP	13		4	1	3	3	3	7	6	**40**
	Central	IT	Stelvio NP	146									**146**
		CH	Central Switzerland	7							2		**9**
		CH	Engadin	35	2	1	1						**39**
		CH	Ticino	2									**2**
	North-Western	CH	Wallis & Berner Oberland	39	5	5	8	2	1	3	1	4	**68**
		FR	Haut Savoie	75									**75**
		FR	Savoie	58									**58**
		IT	Valle d'Aosta & Gran Paradiso NP	5	1	2	2			1	1	5	**17**
	South-Western	FR	Vercors	1									**1**
		FR	Mercantour	17									**17**
		FR	Dauphiné	7									**7**
		FR	Baronnies	1									**1**
		IT	Alpi Marittime - WAON	5	1								**6**
	Massif Central & Pyrenees	FR	Grands Causses & Aude	9									**9**
	Andalusia	ES	Andalusia	18									**18**
			Total	**462**	**9**	**12**	**12**	**5**	**4**	**7**	**11**	**15**	**537**

Estimated number of bearded vultures

E_{foc} - Based on observations (focal day):

Although the total amount of observations gathered during the IOD can be used as an indicative of the presence of bearded vultures, it is not possible to use data from the whole week (IOD-Period) due to the high mobility of the species. In order to omit the possibility of double counting birds and to create a more accurate picture of the bearded vulture distribution, only observations from the focal day were used to determine the approximate number of birds (E_{foc} *= estimate based on observations (focal day) Table 3*). Furthermore, regional coordinators were requested to communicate with nearby partners to avoid double counting of bird individuals.

E_{hyp} - Hypothetically present birds:

During the focal day it is not possible to observe and identify every single bird that is known to be present in a specific region. A second estimate (E_{hyp} = *hypothetically present birds*) composed of the estimate based on observations (focal day) E_{foc} and the number of individuals that were missed during the survey but that should be present in the region (e.g. territorial breeding pairs) should therefore give a picture of the expected number of bearded vulture individuals on the regional level (*Table 3*).

However, as the number of counted birds during the IOD depends on multiple external factors (weather conditions, observer etc.), these estimates are best used as a proxy for population trends and to be compared between years rather than directly and solely as a population size estimation.

We estimate the total number of observed bearded vultures in the Alpine range (E_{foc}) to be between 152 and 182 individuals. Additionally, there are 11 (out of 29 tagged birds) which sent GPS data during the focal day and were not observed. Furthermore, in most regions information on resident, but not observed, birds are available. These three counts sum up to a minimum of 208 and maximum 251 birds (E_{hyp}) present in the Alpine range. These numbers are higher compared to the results obtained during the last two years, where the weather conditions have not been as favourable as in this year (*Table 4*).

These estimates of hypothetically present birds E_{hyp} represent 77% (conservative) or 92% (optimistic) of the total population that is predicted by the demographic model from Schaub et al. 2009 (predicted population size = 270, *see Fig. 5*) and are higher than the estimates from last year (70% resp. 89%) with poorer weather conditions. However, looking at the estimates based on observations only, it was possible to observe 57% or 69% respectively of the birds predicted by the model.

Table 3: Estimates of minimal (conservative) and the maximal (optimistic) number of bearded vulture individuals observed during the focal day (E_{foc}) and hypothetically present (E_{hyp} = observed and known not-observed birds) in each region during the IOD 2017.

				Based on observations (focal day) - E_{foc}		Total number of present birds - E_{hyp}	
	Sector	**Country**	**Region**	**min**	**max**	**min**	**max**
Alps	East	AUT	Hohe Tauern NP	**9**	**13**	**16**	**24**
	Central	CHE	Central Switzerland	3	3	3	3
		CHE	Engadin	35	40	45	51
		CHE	Ticino	1	2	1	2
		ITA	Stelvio NP	21	22	23	25
			Subtotal	**60**	**67**	**72**	**81**
	North-West	ITA	Valle d'Aosta & Gran Paradiso NP	5	5	13	16
		CHE	Wallis & Berner Oberland	17	20	25	29
		FRA	Haute Savoie	17	23	20	28
		FRA	Savoie	21	25	23	27
			Subtotal	**60**	**73**	**81**	**100**
	South-West	FRA	Baronnies	1	1	1	1
		FRA	Dauphiné	4	7	4	7
		FRA	Mercantour	12	14	15	17
		FRA	Vercors NP	1	1	1	1
		ITA	Alpi Marittime - WAON	5	6	7	9
			Subtotal	**23**	**29**	**28**	**35**
Grand Total				**152**	**182**	**197**	**240**
+11 GPS-tagged birds that have not been identified during the IOD						**208**	**251**
Massif Central		FRA	Grands Causses & Cevennes	**6**	**6**	**6**	**6**
Pyrenees		FRA	Aude	**5**	**6**	**5**	**6**
Andalusia[2]		ESP	Andalusia	**13**	**16**	**16**	**19**
+ max. 14 GPS-tagged birds[3] that have not been identified during the IOD						**22**	**33**

Table 4: Comparison of the estimated number of bearded vultures based on the survey during the IOD 2017 and the results from the last four years.

	Based on observations (focal day) - E_{foc}		Total number of present birds - E_{hyp}	
	Minimum	Maximum	Minimum	Maximum
IOD 2017	**152**	**182**	**208**	**251**
IOD 2016	*149*	*178*	*172*	*218*
IOD 2015	*120*	*153*	*166*	*199*
IOD 2014	*87*	*95*	*112*	*130*
IOD 2013	*87*	*98*	*117*	*128*

[3] Bearded vultures migrate between Andalusia, Castilla y León and the Pyrenees

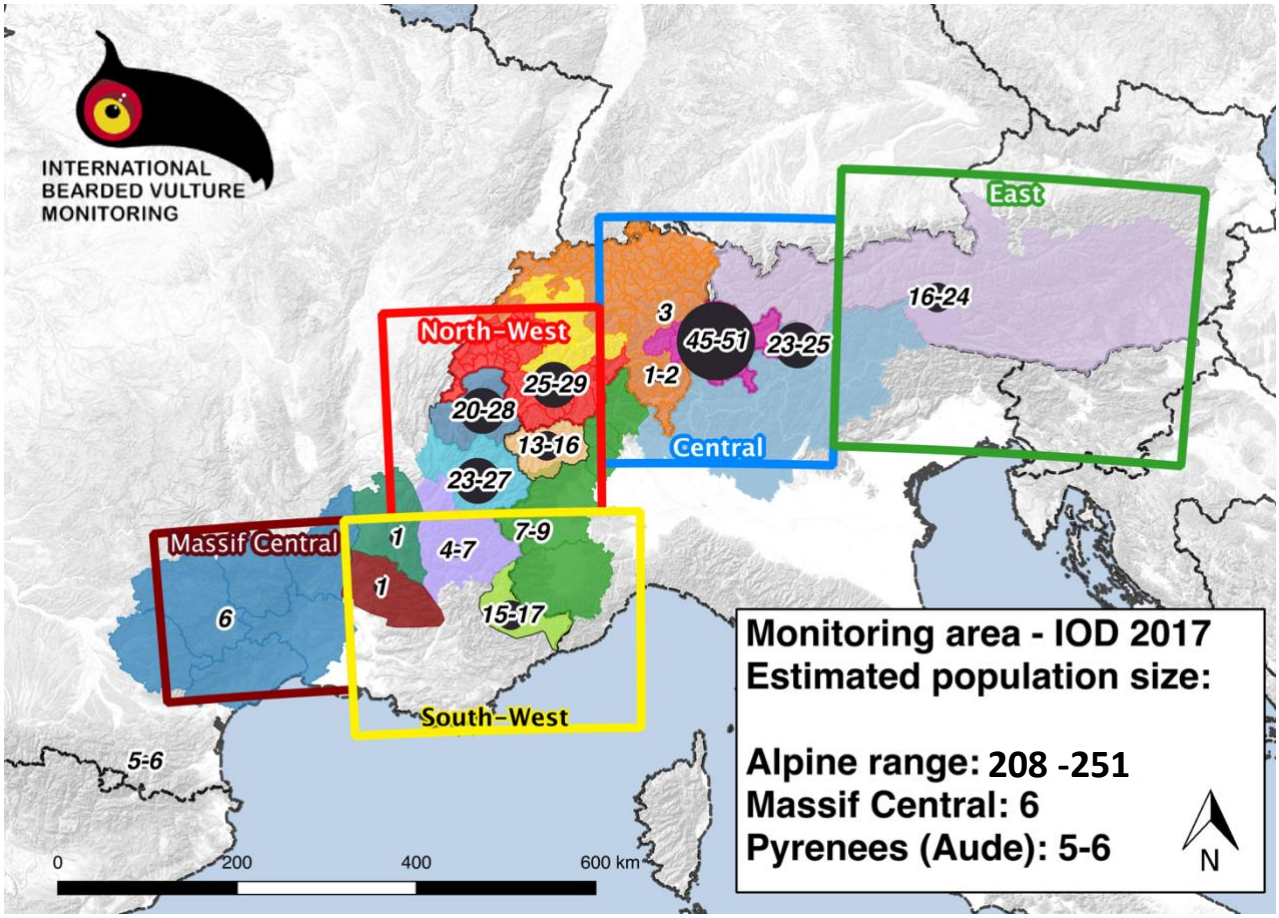

Figure 4: Overview of the estimated bearded vulture population size E_{hyp} on the regional level within the monitoring area of the IBM. Estimates of the populations size are based on estimates derived from observations during the focal day of the IOD 2017 E_{foc} and birds that were not observed but should be present in the region (territorial and GPS-tagged birds = hypothetically present birds). Estimated population size in Jaèn, Andalusia ranges between 22-33 individuals (not on this map).

Proportional distribution of age classes

By looking at the total number of observations during the IOD it is possible to get an overview of age class distribution, which should be representative of the general Alpine bearded vulture population. Per definition the IBM always uses calendar years (cy) for age specifications:

Table 5: IBM-standards age classification.

Entry in the IBM (life stage)	Calendar year (cy)	Real age (years) Jan-Feb | Mar-Dec		Life history event
juvenile (1. year)	**1**	-	0	*hatch*
immature (2. year)	**2**	0	1	*non-territorial*
immature (3. year)	**3**	1	2	*non-territorial*
subadult (4. year)	**4**	2	3	*non-territorial*
subadult (5. / 6. year)	**5**	3	4	*potential nesting*
adult (≥ 6. year)	**6**	4	5	*potential breeding*
adult (≥ 6. year)	**≥7**	5	≥6	*potential breeding*

Comparing the results from the absolute numbers of observations with the estimated number of individuals per age class indicates that even though there is some variation, observation data can be used as an estimate for the age class distribution.

Similar to the previous years, most of the birds observed during the focal day on the IOD 2017 were adults (58%) followed by the immatures (20%) and juveniles (13%) (*Table 6*). In fact, similarly to last year's results, the proportion of sighted birds aged in their 5th calendar year or older (subadults & adults - potentially in age to establish a territory) almost reaches 2/3 of the total number of observations.

Finally, the results were compared to the expected number of living individuals per age class derived by the demographic model designed by Schaub et al. (2009) (*Table 6, Fig. 5*). The results from figure 5 indicate that the percentage of juveniles, immatures and adults coincide quite well with the model predictions, while especially the number subadultes is understimated by the observations from the IOD. Generally, the number estimated based on observations is slightly lower than the number predicted by the model.

There are multiple and additive explanations for the observed discrepancies in the age class distribution (A) and total estimate of the population size (B):

A. More stable birds (adults) might be easier to recognise, detect and monitor as they settle into a region and are territorial. In addition, many observation sites were situated in the core area of known breeding units.
A. Juveniles are also easier to detect as they are easier to discern from the other age classes and often the parents have already been detected by rangers and the territory is therefore regulary visited. Additionaly, released birds up to 2 to 3 years can be identified individually thanks to the visible markings. Therefore, it is easier to identify birds of this age class.
A. In general it is considered difficult for non professional ornitologist to determine the age of young vultures (especially subadult and immature) and could therefore represent the number of observations under the category "unknown".
B. The model of Schaub et al. is based on survival rates over the whole Alpine area and does not take differences in regions into account.
B. The model of Schaub et al. (2009) is based on only two survival rates. One for juveniles (1.cy) and one for all older birds. The reality might be more complicated.

Table 6: Proportion of bearded vultures per age class based on observations reported during the focal day during the IOD 2017. Based on these observations the regional coordinators estimated a minimal and maximal number of bearded vultures per age class (estimated from observations E_{foc}). The estimate of the birds that are hypothetically present also includes territorial birds, the birds that are known to be present in the region as well as the GPS-tagged birds that have not been identified during the IOD-period (estimated hypothetically present E_{hyp}).

Age class	Observed 2017 absolute	Observed 2016 absolute	Observed 2015 absolute	E_{foc} 2017 mean (min/max)	E_{hyp} 2017 mean (min/max)
Adult	279 (59%)	274 (60%)	222 (53%)	97 (58%)	134 (56%)
Subadult	20 (4%)	20 (4%)	40 (10%)	8 (5%)	10 (4%)
Immature	73 (15%)	62 (14%)	59 (14%)	33 (20%)	49 (21%)
Juvenile	55 (12%)	53 (12%)	42 (10%)	21 (13%)	35 (15%)
unknown	46 (10%)	44 (10%)	54 (13%)	9 (<5%)	10 (4%)
Total	**473**	**453**	**417**	**168**	**238**

	Year	Juvenile	%	Immature	%	Subadult	%	Adult	%	Total
Prediction based on model[1]	*2017*	37	14	50	19	36	13	147	54	270
Estimate based on survey	***IOD 2017***	**35**	**15**	**49**	**21**	**10**	**4**	**134**	**56**	**228***

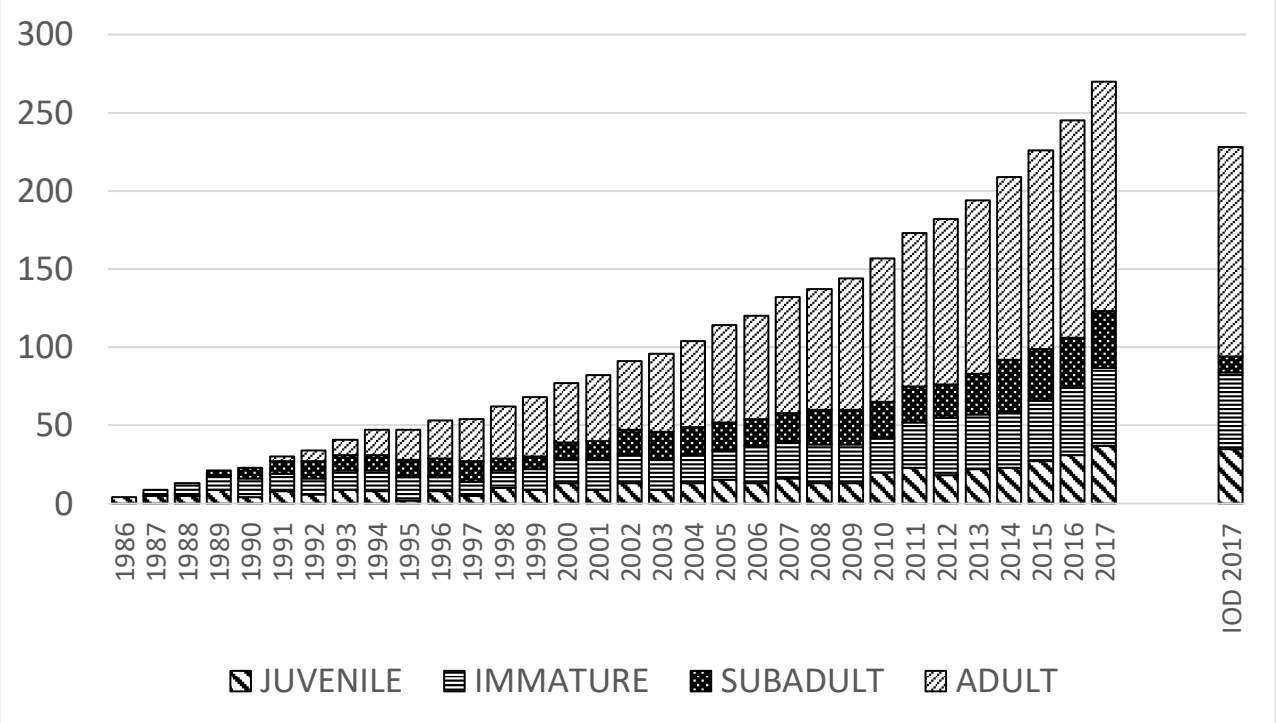

*Figure 5: Predicted number of bearded vultures per age class according to the demographic model by Schaub et al. 2009[1] in comparison to the estimated number of birds that should hypothetically be present based on observation data (IOD 2017) and expert knowledge from regional coordinators. (*mean of minimal = 208 and maximal = 251 estimated number of hypothetically present bearded vultures and the GPS-tagged birds that have not been identified during the IOD 2017; birds with unknown age are not included).*

Spatial distribution of age groups

From 573 sites 537 bearded vulture sightings have been recorded during the whole period, 462 during the focal day (*Table 2*).

In terms of reintroduction and resettlement of a species like the bearded vulture, it is of interest to gain a picture of the spatial distribution of different age classes. In particular, the presence of sexually mature adult birds can be an indicator for the formation of new reproductive units in the periphery of the species' distribution.

The following figures 6-11 show the presence of bearded vultures subdivided in the two age groups adult and non-adult (juvenile, immature, subadult) at the regional level and give a more detailed overview on the bearded vulture distribution during the whole observation period. Each symbol on the map represents the position of an observation site.

Alpine range

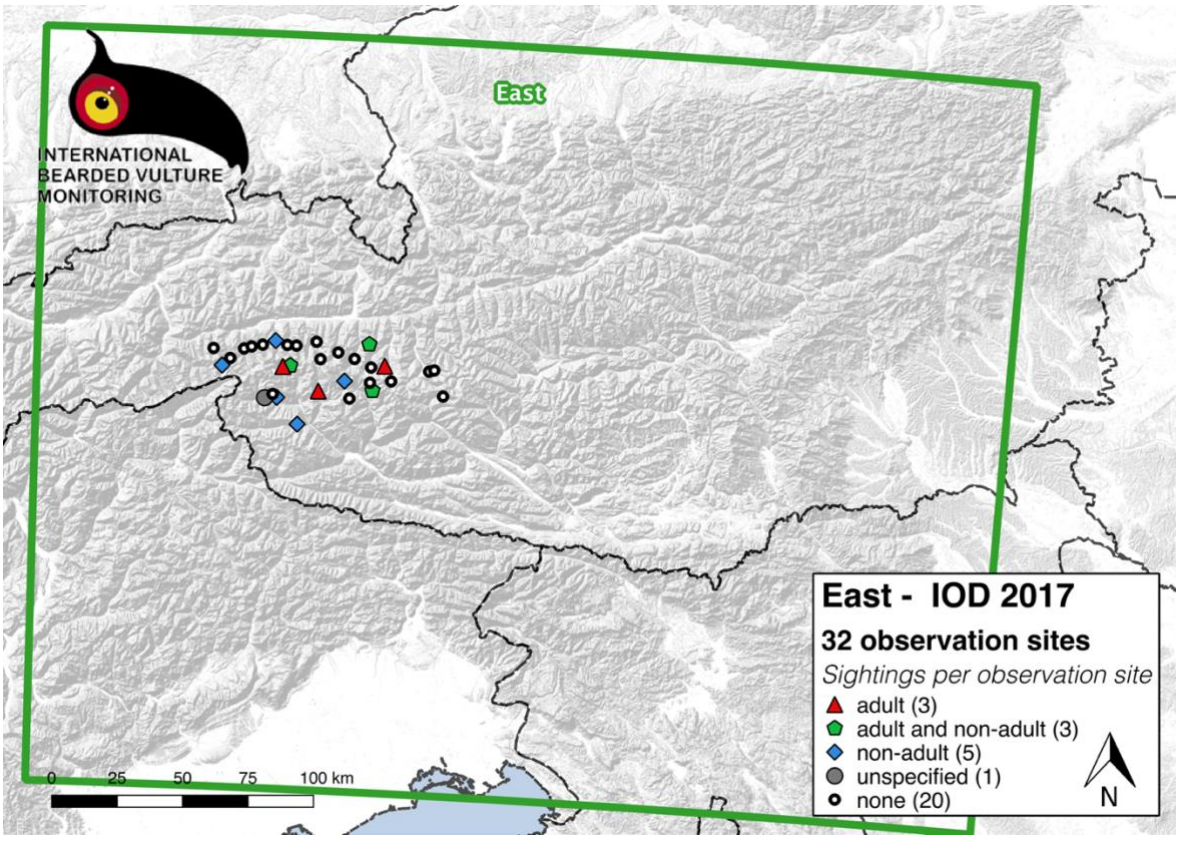

Figure 6: Eastern Alps, distribution by age groups adult and non-adult (juvenile, immature, subadult) that were reported on the 32 observation sites. Estimated number of bearded vulture individuals in this sector: 10-17 adult, ≤1 subadult, 2 immature, 1 juvenile and 2-3 unspecified birds. Total 16 – 24 bearded vultures.

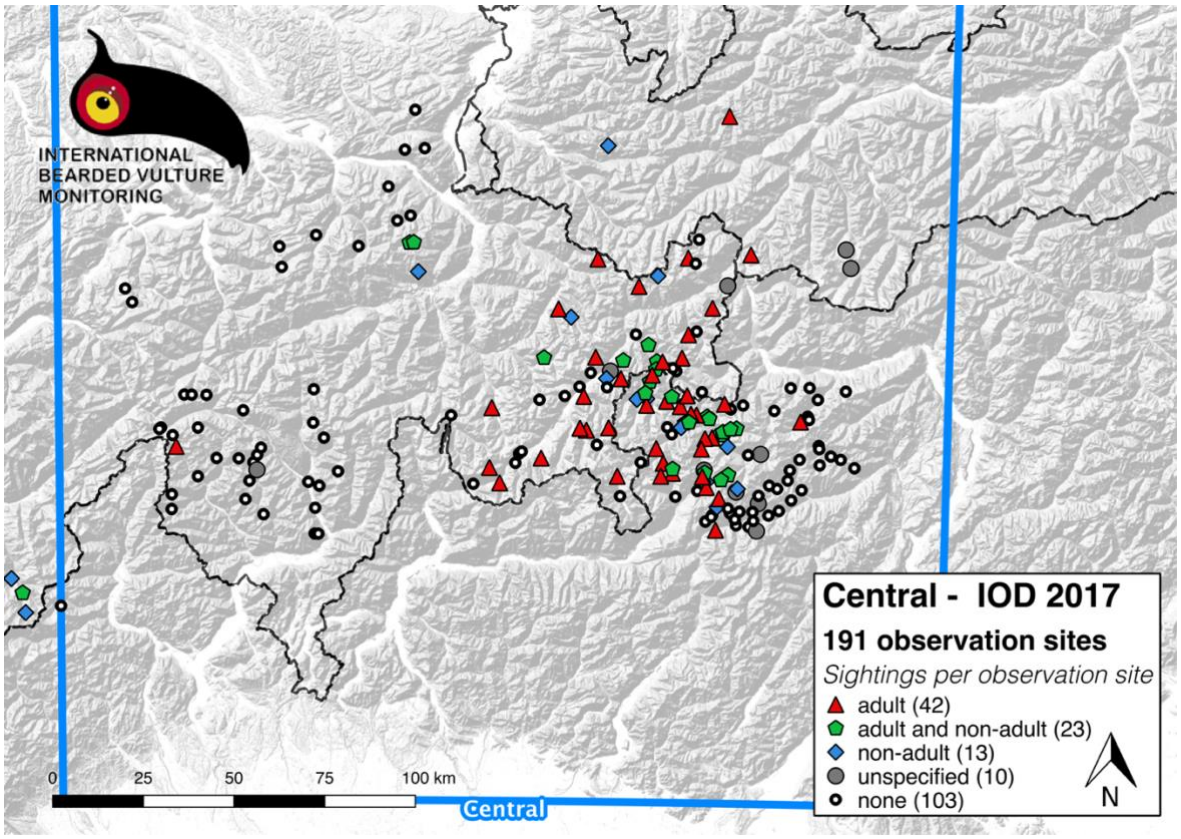

Figure 7: Central Alps, distribution by age groups adult and non-adult (juvenile, immature, subadult) that were reported on the 191 observation sites. Estimated number of bearded vulture individuals in this sector: 44-49 adult, 3 subadult, 6-7 immature, 15-17 juvenile and 4-5 unspecified birds. Total 72 – 81 bearded vultures.

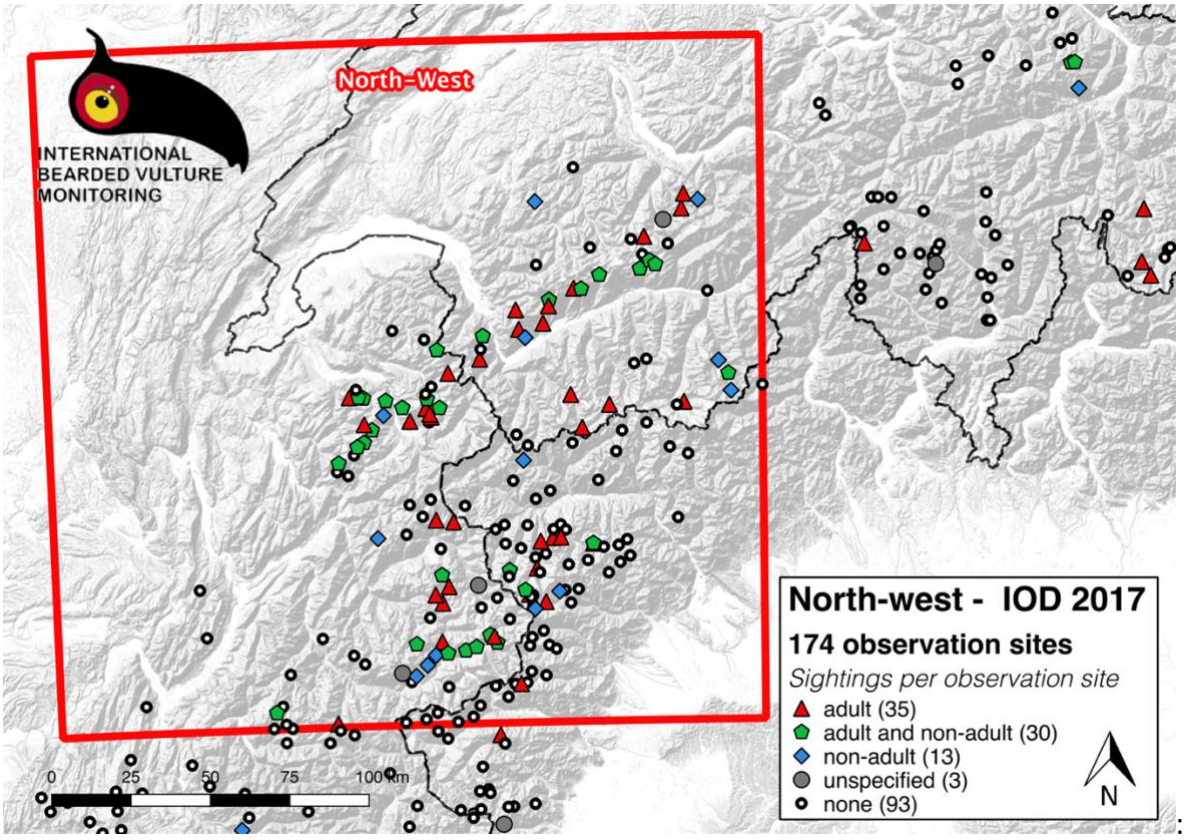

Figure 8: North-Western Alps, distribution by age groups adult and non-adult (juvenile, immature, subadult) that were reported on the 174 observation sites. Estimated number of bearded vulture individuals in this sector: 50-63 adult, 2 subadult, 17-21 immature, 12-14 juvenile. Total 81 – 100 bearded vultures.

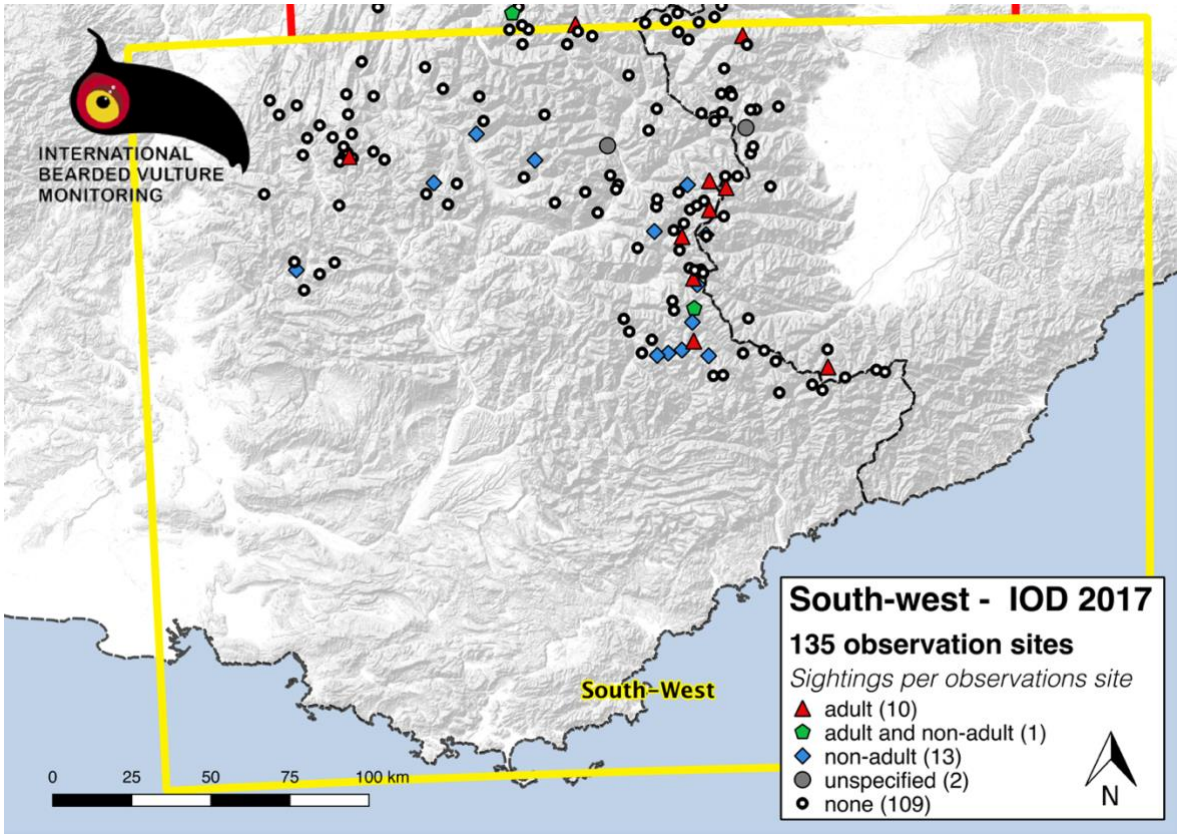

Figure 9: South-Western Alps, distribution by age groups adult and non-adult (juvenile, immature, subadult) that were reported on the 135 observation sites. Estimated number of bearded vulture individuals in this sector: 16-18 adult, 2 subadult, 3-7 immature, 3 juvenile and ≤ 2 unspecified bearded vultures. Total 28-35 bearded vultures.

Massif Central, Pyrenees and Spain

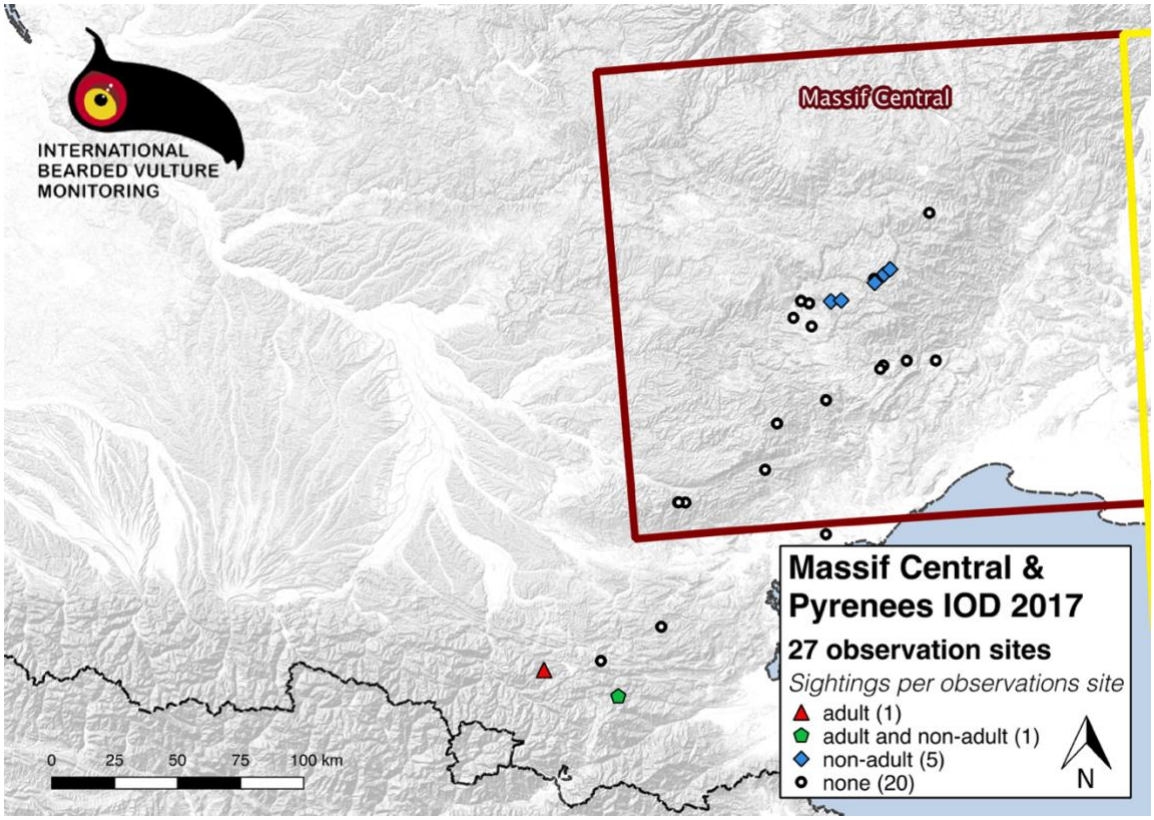

Figure 10: Grands Causses, south Massif Central and north-eastern Pyrenees (Aude), distribution by age groups adult and non-adult (juvenile, immature, subadult) that were reported on the 27 observation sites. Estimated number of bearded vulture individuals in this sector: 4 subadult, 2 subadult, 1 immature and 4 juvenile birds. Total around 11 bearded vultures.

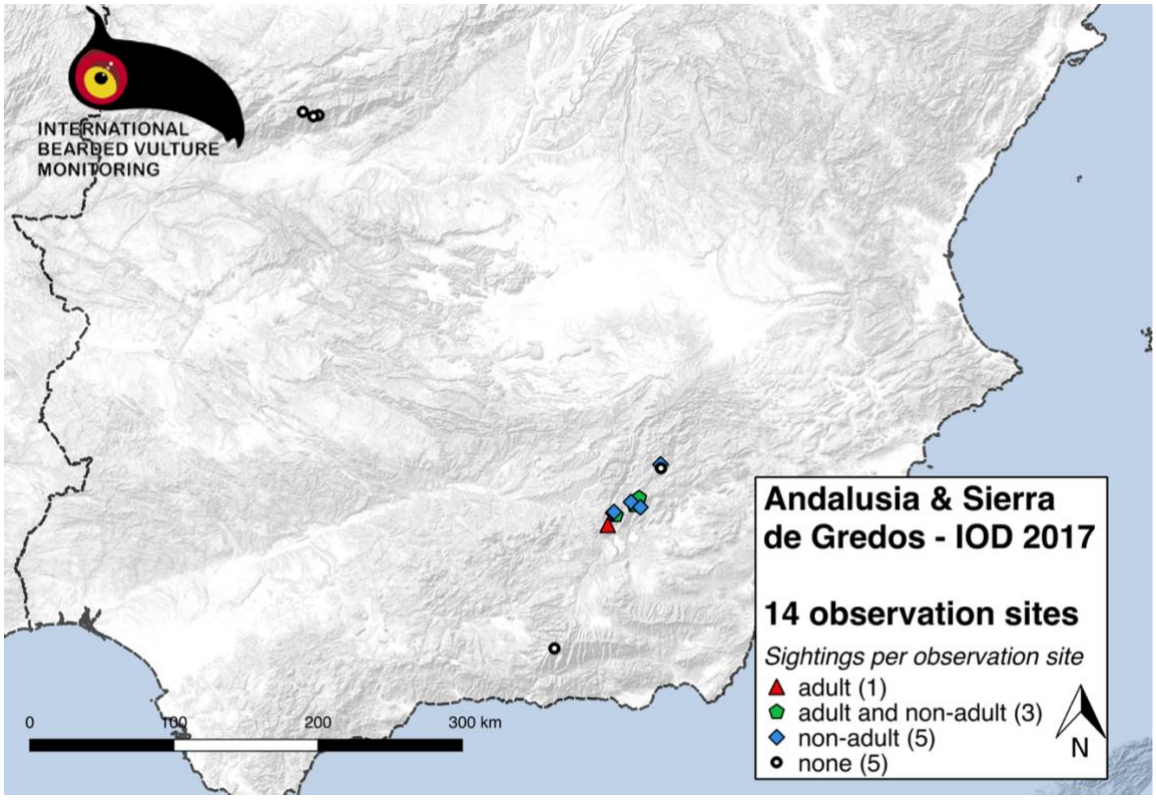

Figure 11: Andalusia and Sierra de Gredos (Castilla y León), distribution by age groups adult and non-adult (juvenile, immature, subadult) that were reported on the 14 observation sites. Estimated number of bearded vulture individuals: 4-6 subadult, 3-4 subadult, 1 immature and 5 juvenile birds. Total around 22-33 bearded vultures.

Telemetry data during the IOD

Alpine range

During this year's IOD GPS-data was available from 27 birds on the focal day (7.10.2017). Out of the 27 GPS-tagged birds 15 individuals could be sighted and identified, while 1 bird was identified with high probability by observers (more than 50% of the GPS-tagged birds have been sighted and identified). However, it is possible that some of the remaining 11 tagged birds have been observed but could not be identified (e.g. distance too big, no markings etc.).

During the observation period GPS-data of 27 out of 30 bearded vultures with satellite tags have been retrieved in the Alpine range, the Massif Central and the Pyrenees (*Fig. 11*), while three tags did not send data during this period (Adonis – BG794, Herculis – BG849, Ewolina – BG838). Although this data is not part of the IOD, this information is collected as representative of their positions and to detect areas of monitoring deficiencies. Some of these birds still show their individual marking patterns (bleached feathers) and can therefore be identified by observers. Exceptions are the wild-born birds (e.g. Gemapi, Neige and Gypsy, Roc Genèse) which have been GPS-tagged but not marked by bleaching their feathers.

GPS data can serve as an indicator to assess the risk of double counting of individuals. Especially in young bearded vultures which tend to fly long distances (e.g. Gypsy travelled more than 80km on the focal day 2017) and could therefore be counted in two distinct monitoring areas.

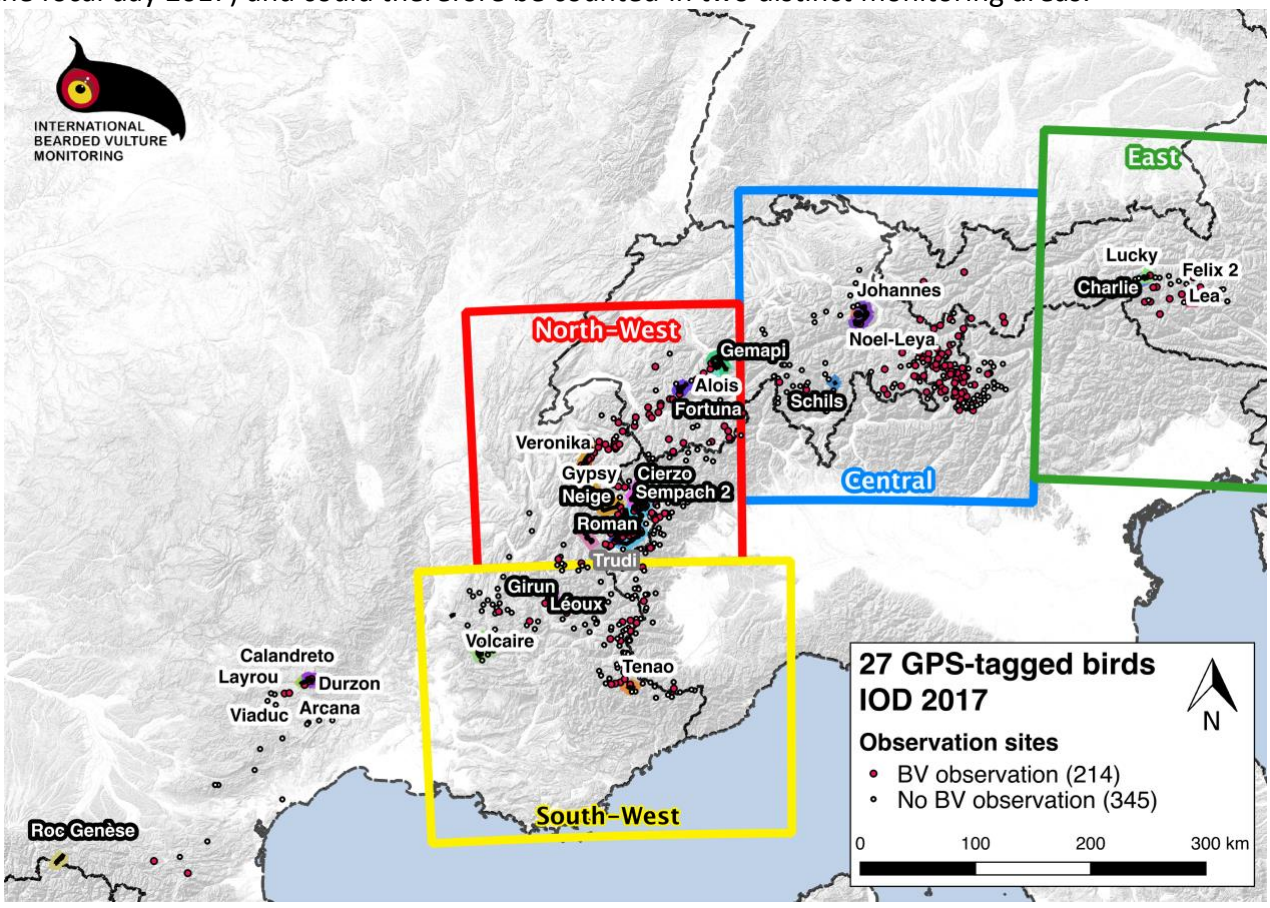

Figure 12: Positions of 27 bearded vultures tagged with GPS transmitters that were present in the monitoring area during the focal day (7.10.2018). During the IOD-Period 15 birds have been identified (white outline), 1 bird (Trudi BG842) has been identified with high probability (grey outline) and 11 birds couldn't be identified (black outline). The GPS-tags of Adonis (BG794), Herculis (BG849) and Ewolina (BG838) did not send data on the focal day and Mison (W230) was only released on the 12.10, and is therefore not visible on this overview.

Spain

This overview over the GPS-locations of 19 bearded vultures during the period from the 8th of September to the 9th of October 2017 indicates, that the birds are occasionally migrating between the monitored regions and the Pyrenees. During the focal day, location data from 4 different birds has been collected and 6 birds have been identified during the survey.

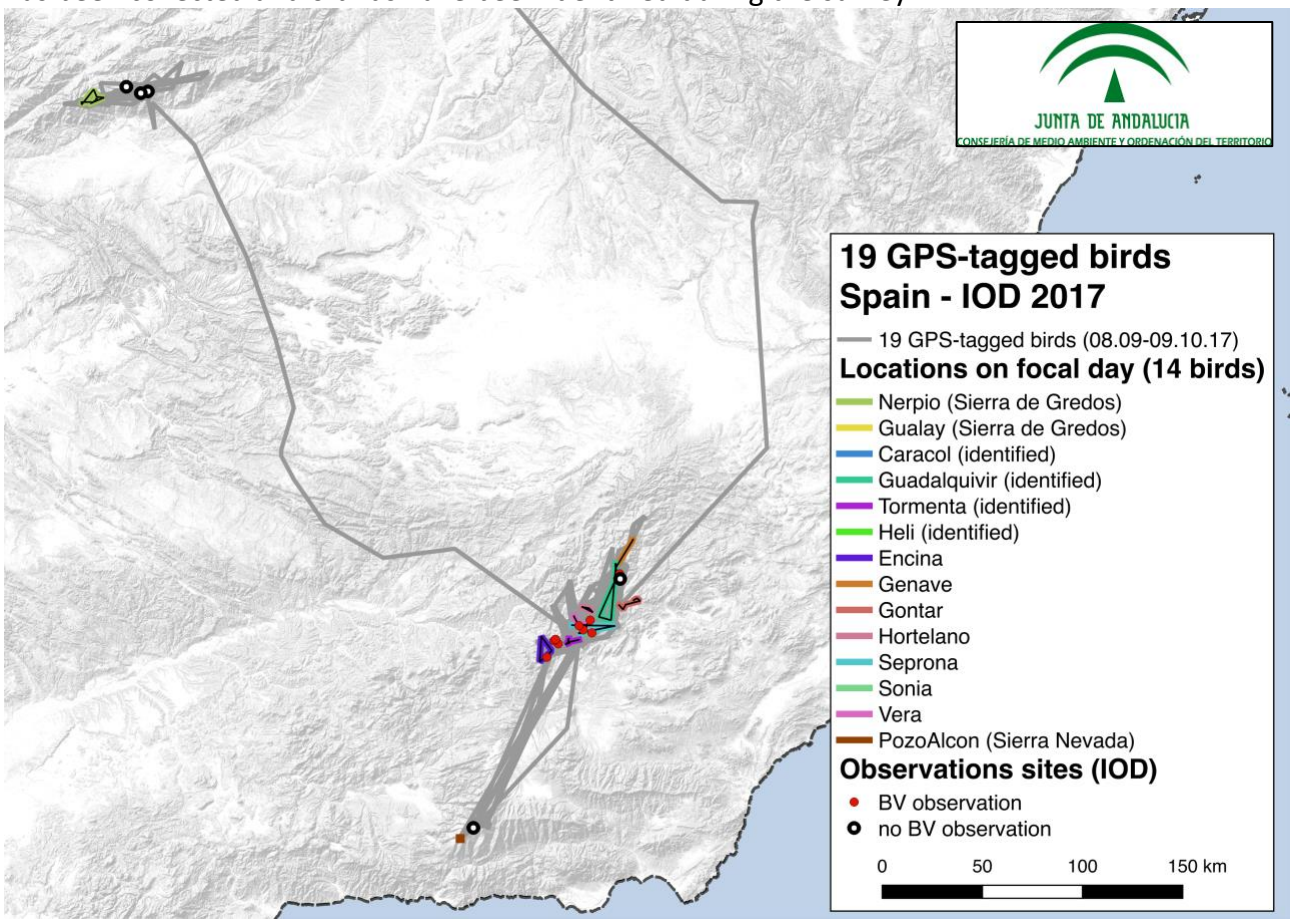

Figure 13: GPS locations of 19 GPS-tagged birds between the 8th of September and 9th of October 2017 in Spain (in grey) show that individuals occasionally migrate between the monitored regions, Sierra de Gredos, Picos de Europa and even the Pyrenees. GPS-locations of 14 different birds were collected during the focal day (07.10.2017) close to the observation sites in PN de Sierra Nevada, PN Sierras de Cazorla (Andalusia) and Sierra de Gredos (in colour). 6 GPS-tagged birds have been identified during the focal day, however GPS-data is only available from 4 of these birds (Gualay, Guadalquivir, Tormenta, Heli), while there is no data available from Ferguson and Estela. Red points indicate observation sites where bearded vultures have been observed during the focal day, while no bearded vultures have been reported from the observation sites marked in white.

Identified individuals

During the IOD 2017 period 70 individuals (56 in the Alpine range) have been identified with high probability, while another 3 birds could not have been identified with certainty (marked with an asterisk (*) in *Table 7*). For the Alpine range, the 56 identified birds account for 20% of the total estimated population size predicted by the demographic model by Schaub et al. 2009 (270 individuals). The identified birds are mostly territorial birds and their chicks or recently released birds.

Table 7: List of bearded vultures that were identified during the IOD 2017 grouped by the region where they have been observed. 22 individuals were tagged with GPS, however there is no telemetry data available from Adonis (BG794), Herculis (BG849), Estela (BG746) and Ferguso (W242) during IOD-period[1]. Three individuals that could not be identified with certainity are marked with an asterisk (*).

Nr.	Bird	ID	Sex	Age (cy)	Territory	Region	Zone
1	Andreas Hofer	260	m	22	Gastein/Rauris	**Hohe Tauern**	**East**
2	Pinzgarus	558	m	10	Gschlöß		
3	Glocknerlady	718	f	6	Gschlöß		
4	Felix2 (GPS)	793	m	4			
5	Lea (GPS)	840	m	3			
6	Lucky (GPS)	909	m	2			
7	Noel-Leya (GPS)	797	m	4		**Central Switzerland**	**Central**
8	Johannes (GPS)	964	m	1			
9	Diana-Stelvio	W07	f	18	Albula	**South-eastern Grisons**	
10	Bergün2017	W229	u	1	Bergün		
11	Folio	463	f	13	Maloja		
12	Rurese	559	m	10	Maloja		
13	Livigno	W08	m	18	Ofenpass		
14	Ortler	439	f	14	Ofenpass		
15	Ofenpass2017	W231	u	1	Ofenpass		
16	Moische-Livigno	W11	f	16	Sinestra		
17	Spöl2017	W212	u	1	Spöl		
18	Martell	395	f	16	Tantermozza		
19	Zebru	W12	m	16	Tantermozza		
20	Moische	146	f	27	Livigno	**Stelvio NP, Trentino & Sondrio**	
21	Cic	186	m	25	Livigno		
22	Astrid-Livigno	W235	u	1	Livigno		
23	Bergl	W236	u	1	Ortler		
24	Temperatio	495	f	12	Val Martello		
25	Tell	283	m	21	Valle del Braulio		
26	Stift	393	f	16	Valle del Braulio		
27	Dànilo-Braulio	W233	u	1	Valle del Braulio		
28	Felice	375	f	17	Zebru		
29	Heinz-Serraglio	W45	u	11	Zebru		
30	Talat Deger-Zebrù	W234	u	1	Zebru		

Nr.	Bird	ID	Sex	Age (cy)	Territory	Region	Zone
31	Jalouvre	W218	u	1	Bargy	**Haut Savoie**	**North-west**
32	Veronika (GPS)	321	f	19	Sixt Fiz		
33	Nonno Bob	548	m	10	Andagne	**Savoie**	
34	Beaugosse				Andagne		
35	Gypsy (GPS)	W209	u	1	Aravis		
36	Paynavala	W238	u	1	Peisey-Nancroix		
37	Trudi (GPS) *	842	f	3			
38	Herculis *[1]	849	m	3			
39	Michegabri	488	m	12	Chamoussière	**Valle d'Aosta & Gran Paradiso NP**	
40	Swaro	459	m	13	Derborence_down	**Wallis & Bernese Oberland**	
41	Pablo	359	m	18	Derborence_Vérouet		
42	Guillaumes	411	f	15	Derborence_Vérouet		
43	Diablon-Vérouet	W217	u	1	Derborence_Vérouet		
44	Tantermozza2017	W225	u	1	Tantermozza		
45	Alois (GPS)	900	m	2			
46	Volcaire (GPS)	905	m	2		**Baronnies**	**South-west**
47	Bellemotte	708	f	6	Bonette	**Mercantour**	
48	Cuneobirding	491	f	12	Chambeyron-Ubayette		
49	Stephan	616	m	8	Chambeyron-Ubayette		
50	Rocca	516	m	11	Source de la Tinée		
51	Girasole	549	f	10	Source de la Tinée		
52	Sirius *	W224	u	1	Source de l'Ubaye		
53	Tenao (GPS)	755	m	5			
54	Paolo Peila	388	m	16		**Piemont & Alpi Marittime**	
55	Palanfre	435	f	14			
56	Kirsi	764	m	5		**Vercors**	
57	Layrou (GPS)	761	m	5		**Grands Causses**	**Massif central**
58	Arcana (GPS)	954	f	1			
59	Calandreto (GPS)	948	m	1			
60	Durzon (GPS)	945	m	1			
61	Viaduc (GPS)	946	m	1			

...

Nr.	Bird	ID	Sex	Age (cy)	Territory	Region	Zone
62	Tono	486	m	13	Guadalentín	Jaén	Andalusia
63	Blimunda	633	f	9	Guadalentín		
64	Caracol (GPS)	965	m	2			
65	Estela (GPS) [1]	746	f	6			
66	Félix-Cazorla	W241	u	2			
67	Ferguson (GPS) [1]	W242	m	1			
68	Guadalquivir (GPS)	751	m	6			
69	Heli (GPS)	955	m	2			
70	Sansón	767	m	6			
71	Bigup	856	m	4			
72	Tormenta (GPS	963	f	2			
73	Viola	707	f	7			

OUTLOOK 2018

The IBM steering committee fixed the date for the next International Observation Day:

Period 6th - 14th of October 2018

Focal Day is the 6th of October 2018.

Even though a period of one week was chosen for public communication, we would like to stress the importance of focused observation intensity. Observations can be cumulated only within the core period. Therefore, **the count by specialists and volunteers on observation posts shall be carried out only during the focal day.**

The focal time for the count starts at 10 am to at least 3 pm.

ACKNOWLEDGEMENTS

SPECIAL THANKS GO TO THE IBM MEMBERS FOR THE ORGANISATION OF THE CENSUS ON THE REGIONAL LEVEL AND TO ALL PARTICIPANTS OF THE OBSERVATION DAYS:

- Agentes de Medio Ambiente *(Ana Moreno, Antonio Perona)*
- ALEPE
- Alpi Marittime Nature Park *(Luca Giraudo)*
- Western Italian Observation Network WAON including the Parco Naturale Alpi Cozie, Gruppo Aquile e Avvoltoi delle Valli di Lanzo and the Comunità Montana Valle Pellice
- Amt für Jagd und Fischerei Graubünden *(Hannes Jenny, Georg Brosi)* and game keeper
- Aosta Valley Region with Corpo forestale della Valle d'Aosta *(Christian Chioso)*
- Association Le Rougegorge
- Asters *(Etienne Marlé)*
- Carabinieri Forestali CTA Bormio *(Riccardo Ghilotti and wardens)*
- Co-Gard
- Conseil Départemental de la Drôme
- Delegación Territorial de Ávila, Servicio Territorial de Media Ambiente. Agentes de Medio Ambiente y Celadores *(Nicolás González, Sergio Rastrero)*
- Envergures Alpines *(Cathy Ribot & Christian Couloumy)*
- ERSAF Lombardia Direzione Parco Nazionale dello Stelvio, Bormio *(Enrico Bassi)*
- Fundación Gypaetus *(Pakillo Rodríguez y Ana Isabel García)* and the volunteers
- Goupil Connection
- Gran Paradiso National Park *(Martino Nicolino)*
- Guardie ecologiche Volontarie Valle Camonica *(Mauro Speziari)*
- Les équipes du Parc national du Mercantour, et l'ensemble du réseau d'observateurs bénévoles Mercantour
- LPO *(Daniel Thonon, Corinne Meizenc, Yves Zabardi, Paul Boudin)*
- LPO Aude
- LPO Aveyron
- LPO Drôme
- LPO Grands Causses
- LPO Herault
- LPO Savoie
- MUSE di Trento *(Paolo Pedrini)*
- National Park Hohe Tauern
- ONF 12
- Ost-Tiroler Jägerschaft
- Parc National de la Vanoise

- Parc National des Ecrins
- Parc Naturel Régional des Baronnies Provençales
- Parco Nazionale dello Stelvio/Stilfserjoch (*Enrico Bassi, Andrea Buffa, Federico Capelli, Cristian Pentori, Franco Rizzolli and Andrea Roverselli, Meinardi Alessandro and Gunsch Hans Peter)*
- Parque Nacional de Sierra Nevada *(Blanca Ramos, Agentes de Medio Ambiente)*
- Parque Natural de Castril *(José María Montoro)*
- Parque Natural de Cazorla, Segura y Las Villas *(Teresa Moro)*
- Plan de Recuperación y Conservación de Aves Necrófagas Team *(Rafael Arenas, José Ramón Benítez, Enrique Ávila)*
- PNRVercors : *(Cuerva Bruno, Betton Benoit)*
- Provincia di Brescia *(Carlo Caromani, Dario Saleri, Giacomo Trotti and wardens)*
- Provincia di Lecco *(Raffaella Forni, Roberto Facoetti and wardens)*
- Provincia di Sondrio *(Graziano Simonini, Folatti Maria Grazia, Hunting office and wardens)*
- Réseau Gypaète Suisse Occidentale
- Schilthornbahn AG
- Schweizerischer Nationalpark *(Thomas Rempfler, Fadri Bott, Andri Cuonz, Reto Strimer) and park rangers*
- Station ornithologique suisse / Schweizeriche Vogelwarte
- Stiftung Pro Bartgeier *(David Jenny-Mettler, Franziska Lörcher & Daniel Hegglin)* and the Western Swiss Observer Network RGSO *(François Biollaz & Michael Schaad)*
- University of Bern
- Vautours en Baronnies *(Julien Traversier)*

Numerous people participated and supported the International Bearded Vulture Monitoring event in 2017. Some of them could not be mentioned or remained unknown to the IBM office. We acknowledge them just as much as those observers mentioned in the long list that follows.

PARTICIPANTS / OBSERVERS 2017

Adriano Caldera
Agnes Dijaux
Agnès Moulin
Agneta Heuman
Agostino Parisi
Alain Bloc
Alain Chastin
Alain Girodon
Alain Lefébvre
Alain Vincent
Albert Casartelli
Albert Delannoy
Albert Good
Albert Thon
Alberto Cellerino
Albin Liborio
Aldo Fasoli
Alessandro Bergamo
Alessandro Biondelli
Alessandro Corgatelli
Alessandro Mucciolo
Alessandro Voulaz
Alex Hölzl
Alexis Trappier
Alfonso Cirolo
Amélie Desiré
Amélie Rieu
Ana Belén Gacia Martin
Ana Isabel García
Ana Moreno
Anaïs
Andi Kofler
Andrè Bortolameolli
André Foulu
André Pichard
Andrea Buffa
Andréa Chattellier
Andrea Ferrari
Andrea Leccese
Andrea Mosso
Andrea Nicoli
Andrea Roverselli
Andrea Vendramin
Andrea Vignetta
Andrea Zanoli
Andreas Gantenbein
Andrew Hargreaves
Andri Cuonz
Angela Schenatti
Angélique Gardet
Angelo Dan
Angelo Pasqua
Anna Boschiazzo
Anna Corti
Anna Funaro
Anna Peccile
Anne-Laure Bonato
Anne-Marie Lanquetuit
Anne-Marie Trahin
Annette Kiel
Annick Lauth
Annick Obert
Anouk Athanasiades
Anouk Taucher
Anthony Turpaud
Antoine Reynaud
Antoine Rezer
Antonella Cordedda
Antonio Atienza
Antonio Lingua
Antonio Perona
Ariane Goerens
Arianna Aceti
Armand Dussex
Armin Lutz
Arturo Gargioni
Arturo Plozza
Astrid Oehl
Augusto Fontana
Augusto Rivelli
Aurel Salamin
Aurélie Chauvin
Aurelio Lubini
Aurore Seignemartin
Azzurra Attanasio
Barbara Schwierin
Barbara Zwinggi
Bassano Riboni
Bastien Pascal
Battista Silvestri
Bea Pozzi
Bea Stucki
Bénédicte Chomel
Benjamin Chanut
Benjamin Griffoul
Benoît Cony
Benoit Deffrennes
Bernard Claude
Bernard Fourgous
Bernard Michellod
Bernard Moniez
Bettina Wolfgramm
Bigorne Jean-Luc
Bogna Sudolska
Brice Palhec
Brigitte Kuhn
Brigitte Marcoz
Brigitte Sarlin

Brigitte Wolf
Bruno Cuerva
Bruno Descaves
Bruno Diemoz
Bruno Frache
Bruno Gruber
Bruno Perlotti
Bruno Usseglio
Cabrera José
Camille Montegu Camille
Carolann Briqueler
Carole Ray-Barman
Caroline Druesne
Caroline Winkler
Catherine Beciu
Catherine Maugendre
Cathy Ribot
Caty Vincent
Cécile Bobin
Cécile Laurençot
Cécile Valembois
Cecilia Tambone
Cédric Avignon
Cedric Command
Cédric Lardanchet
Célestin Luisier
Céline Bacca
Cesare Dell'acqua
Chamaillard Patricia
Charles Cherrier
Chaud Pierre
Chiara Andreola
Chiara Caminada
Chiara Scandolara
Chretien Mailis
Christian Brunet
Christian Couloumy
Christian Guillaume
Christian Haslinger
Christian Schwoerer
Christian Tschenett
Christian Wirz
Christine Geanty-Varlet
Christoph Platzer
Christoph Vogel
Christophe Gerrer
Christophe Gotti
Christophe Pasini
Christophe Thomas
Cinzia Fornero
Clair Landry
Claire Oddou
Claire Rameaux
Clara Arnaud
Clara Petazzi
Clarisse Pellet
Claude Gouron
Claude Lavigne
Claude Pfau
Claudia Müller
Claudia Spiess
Claudio Crespi
Claudio Foletti
Claudio Gilardi
Claudio Pozzi
Claudio Schorta
Clément Chalmin
Clément Maury
Corbier Jean-Michel
Corinne Binet
Corinne Meizenc
Cornelia Hürzeler
Cornet Fiona
Corrado Fosson
Cristian De Lorenzi
Cristian Pentori
Cristina Giosele
Cristina Nencini
Crovi Vincent
Curdin Florineth
Cuypers Thomas
Cyndie Morand
Cyr Piaton
Cyril Borel
Cyrille Dommergues
Dada Oreiller
Damian Ibañez
Daniel Demontoux
Daniel Fougeray
Daniel Godli
Daniel Kühler
Daniel Künzle
Daniel Thonon
Daniela Praolini
Daniela Rüegsegger
Daniela Scacchi
Danièle Bonnevie
Daniele Reteuna
Daniele Spigoli
Daniele Vezzoli
Daniele Zonari
Danio Miserocchi
Dany Chiardola
Dario Crinari
Dario Favre
Dario Galli
Dario Gerbelle
Dario Saleri

David Jenny
David Leroy
David Thierry
David Ulrich
Davide Giuliano
Davide Keller
Davide Zubiani
Delphine Edel
Dement De Mont Emmanuel
Demis Massoni
Denis André
Denis Attinault
Descleves Lucie
Destre Remis
Didier Freychet
Diego Franchini
Domenico Albano
Domenico Chiminelli
Domenico Rosselli
Dominique Berder
Dominique Draperi
Dominique Jacquemin
Dominique Michellod
Dominique Mouchené
Dominique Robin
Dominique Secondi
Edi Busana
Egon Humbs
Elena Grasso
Elena Piano
Eleonora Monte
Elfriede Oberndorfer-Wuggenig
Elie Monin
Elio Polla
Elio Vigna
Elisabeth Kalbermatten
Elisabeth Lecompte
Elisabeth Siegel
Elise Et
Ely Mordasini
Emanuel Egger
Emanuela Marzoli
Emanuele Forlani
Emanuele Manzi
Emil Kühn
Emilie Robert
Emilien Molave
Emmanelle Tuillier
Emmanuel Blanchet
Emmanuel Jean-Jean
Encinas José Luis
Endrich Silvestri
Enrico Bassi
Enrico Boetto
Enrico Fiore
Enrique Ávila
Eraldo Vuillermoz
Eric Belleau
Eric Charron
Eric Tuillier
Eric Vimercati
Erige De Thiersant
Etienne Chabrier
Etienne Marlé
Eugen Jenal
Eugenio Audibusso
Eugenio Osele
Fabienne Berthollet
Fabio Dartora
Fabio Lepori
Fabrizio Plebani
Famille Allée
Fanny Hecq
Fanny Moreau
Fausto Gianera
Fedele Airoldi
Federico Capelli
Federico Peretti
Federico Pino
Ferdinand Lainer
Fernando Diaz
Fiore Cao
Fiorenza Trione
Flavia Paoletti
Florence Bovio
Florian Egger
Flurin Schur
Francesco Campra
Francesco Panuello
Francesco Rossi
Francesco Sottile
Francesco Vender
Francesco Viglia
Francisco Rodriguez
Franck Parchoux
Franco Lavezzi
Franco Rizzolli
Franco Traverso
François Biollaz
François Breton
François Chesnay
François Claude
Françoise Chevalier
Françoise Jucker
Françoise Nolibois
Françoise Rossi
Françoise Tabardel
Frank Miramand

Franziska Lörcher
Freddy Pierrehumbert
Friedrich Fliri
Fritz Hochfilzer
Fritz Suter
Fulvio Zanardini
Gabriele Attanasio
Gabriele Gianatti
Gabriele Piotti
Gabriele Simonini
Gaëtan Tisseron
Galric Gérard
Geneviève Coupez
Geni Ballat
Gerhard Rümmele
Gerhard Toferer
Germano Balestrieri
Giacomo Righettini
Giampaolo Brignoli
Gianni Lardgiader
Gianni Marcolli
Gianni Tamiozzo
Gigi Attanasio
Gilbert David
Ginette Metthez
Gino Delpero
Giordano Mosconi
Giorgio Bonomi
Giorgio Mangili
Giorgio Ottin
Giovanna Cabri
Giovanni Natale
Giovanni Teghillo
Giovanni Vairos
Giraud Léa
Giulia Zanetti
Giuseppe Bongiolatti
Giuseppe Castelli
Giuseppe Ferrero
Giuseppe Marianini
Giuseppe Roux Poignant
Giuseppe Speranza
Gloria Bertelli
Gorfer Florian
Graziano Borello
Grégory Satiat
Guido Andry
Guido De Monte Faginto
Guido Meeus
Guido Moreschini
Guido Pinoli
Guillaume Boute
Guillaume Canova
Guillaume Racloz
Guillaume Ruesh
Guillaume Saintherant
Günther Jakober
Guolf Denoth
Guy Rebattu
Hadrien Cambazard
Hannes Eberharter
Hannes Klopfenstein
Hannes Muhr
Hannes Rass
Hans Ifanger
Hanspeter Clausen
Hansruedi Weyrich
Heidi Henzelin
Helen Wiesinger
Hélène Berder
Hélène Claveau
Hélène Maria
Hélène Marseille
Héloïse Granier
Henning Werth
Henri Suret
Henry Ripert
Hermann Muigg
Hervé Blanchin
Hervé Brosius
Hervé Cortot
Hervé Picq
Hervé Tournier
Ilda Barus
Ingrind Chapel
Ionne Piazzi
Irma Botta
Irma Siegwart
Isabelle Caffin
Isabelle Desbiolles
Isabelle Epp-Nicolino
Isabelle Lhommedet
Isabelle Malafosse
Isabelle Mira
Isabelle Montagnier
Isabelle Saintherant
Italo Armanasco
Ivan Albertini
Jacob Laure
Jacqueline Chiardola
Jason Protheroe
Jean Deschatres
Jean Draperi
Jean Revollat
Jean-Baptiste Portier
Jean-Christian Piques
Jean-Claude Coupez
Jean-Claude Varay

Jean-Fançois Lombard
Jean-François Caty
Jean-François Desmet
Jean-François Siegel
Jean-Laurent Jordaney
Jean-Louis Carlo
Jean-Luc Pardi
Jean-Luc Pinel
Jean-Marc Fasmeyer
Jean-Marie Geffrin
Jean-Marie Marslen
Jean-Noël Loireau
Jean-Paul Coulomb
Jean-Pierre Choisy
Jean-Pierre Richaud
Jean-Yves Ployer
Jennifer Moullet
Jens-Peter Kiel
Jérémy Savioz
Jérôme Chaumontet
Jérôme Gruit
Jéromine Clairet
Jesús Olivares
Jo Lombard
Joaquín Pérez
Johannes Tomaschett
Jon Gross
Jonathan Clack
José María Montoro
José Ramón Benítez
Juan López Sosa
Jules Heuret
Julie Carlier
Julien Leuenberger
Julien Mazenauer
Julien Traversier
Jürgen Petrikat
Karoly Zombori
Kathi Märki
Katia Asensio
Katja Rauchenstein
Kenny Staneck
Kevin Vega
Kurt Obrist
Lara Ghiraldini
Laura Pommier
Laure-Anne Cerman
Laurent Colombet
Laurent Majorel
Laurent Martin-Dhermont
Laurent Puch
Laurent Ripert
Laurent Théophile
Laurent Zimmermann
Lazennec Yves
Le Martelot Céline
Leopold Hasenauer
Letizia Fortini
Liana Nicoli
Lily Dunyach
Linda Feichtinger
Lino Ambrosini
Livia Curti
Livia Panada
Livio Costa
Loïc Cheilan
Loïc Gruit
Lorenzo Colombo
Lorenzo Costanzo
Lorenzo Rapa
Luana Attanasio
Luc Lemmenmeier
Luc Wauters
Luca Colato
Luca Dacanal
Luca Fornari
Luca Fumagalli
Luca Giraudo
Luca Petrin
Lucas Pitsch
Lucas Weill
Lucia Stella
Luciano Heidempergher
Luciano Piazzi
Luciano Ramires
Lucie Rousselot
Lucien Tron
Ludivine Lasserre
Ludovic Klein
Luigi Bertero
Luigi Bionaz
Luigi Pedri
M.Grazia Carpi
Magali Battais
Magali Nuyts
Maja Suter
Marc Bernard
Marc Bethmont
Marc Eichenberger
Marc-Henry Biollay
Marcel Pra
Marco Bertelli
Marco Dallavalle
Marco Dellanoce
Marco Ghisolfi
Marco Gobbini
Marco Meneguz
Marco Ranaglia

Marco Rastelli
Marco Rolando
Marco Salvioni
Marco Sozzi
Marco Tasin
Mariagrazia Folatti
Marianne Küffer
Marianne Lörcher
Marianne Mequignon
Mariarosa Mombelli
Marie Heuret
Marie Madeleine Mouchet
Marie Pagès
Marie-Antoinette Bianco
Marie-Cécile Moisson
Marie-Hélène Lambert
Marie-Laure Uginet-Ulliel
Marie-Paule De Thiersant
Marie-Paule Piérini
Marina Nova
Marine Rutili
Marine Scarpari
Mario Bizel
Mario Dotto
Mario Gandini
Mario Pedrelli
Mario Taddei
Marion Bensa
Marion Michellod
Markus Heiniger
Markus Hofmann
Markus Lackner
Marlène Sauthier
Marlies Taucher
Marsaudin Valérie
Martin Mermier
Martin Schmutz
Martin Wettstein
Martine Sonnenwyl
Martino Nicolino
Massimo Balducci
Massimo Benazzo
Massimo Cerrato
Massimo Ferrier
Massimo Pettavino
Mathias Schaffner
Mathieu Krammer
Mathieu Robert
Matteo Collimedaglia
Matteo Cuna
Matteo Franchini
Matthias Granitzer
Mattia Delpero
Mattia Parmesani
Maura Cattaneo
Maurice Metthez
Maurizio Azzolini
Maurizio Chiereghin
Maurizio Giugni
Mauro Belardi
Mauro Benvenuti
Mauro Stella
Max Baumann
Maxence Desoutter
Maxime Gay
Maya Fahrni
Menga Parpan
Michael Gähwiler
Michael Schaad
Michel Bailly Maitre
Michel Chesaux
Michel Duranti
Michel Maire
Michel Metayer
Michel Morin
Michel Rocher
Michel Thomas
Michela Marchetti
Michelangelo Giordano
Michele Antonioli
Michele Barbieri
Michele Battoraro
Michele Braghini
Michèle Marslen
Michelle De Coster
Michelle Royer
Milena Béthaz
Mirco Lauper
Mireille Coulon
Mirko Micheletti
Mollar Maxime
Monique Clerc
Monique Eymard
Monique Perfus
Montjaux Liliane
Morgan Grivaud
Mouet Yoann
Muriel Frier-Quris
Myriam Jullien
Nadia Severgnini
Nans Denis
Nathalie Tissot
Nicola Ferrari
Nicolas Bertrand
Nicolas Gomez
Nicolas Morisset
Nicolas Tenoux
Nicole Erard

Nicole Petitpierre
Nils Schwoerer
Nino Basso
Nives Rolando
Norbert Jordan
Not Pua
Numa Rondelli
Olivier Caffin
Olivier Glaizot
Olivier Laurent
Olivier Montigny
Olivier Trompette
Ollivier Daeye
Omar Bonazzi
Oriana Brandolese
Orlando Ostinelli
Osvaldo Empereur
Otto Zanetti
Ouvrard Etinne
Pablo Dobado
Pablo Martínez
Paola Antonelli
Paola Casale
Paola Chiudinelli
Paola Ricceri
Paolo Biscontini
Paolo Bracco
Paolo Faifer
Paolo Laffranchi
Paolo Massara
Paolo Valiati
Pascal Charrière
Pascal Gomes
Pascal Labbé
Pascal Pini
Patrice Duraffort
Patrice Le Guilcher
Patrick Damiano
Patrick Orméa
Patrick Ruckli
Patrizia Moretti
Paul Boudin
Pauline Fouda
Pauline Grosbéty
Pedro J Niantuña
Philipp Bertagnolli
Philippe Archimbaud
Philippe Badin
Philippe Christe
Philippe Fortini
Philippe Maret
Philippe Munier
Philippe Piérini
Phillippe Badin
Pier Ettore Gabrielli
Piero Bonvicini
Piero Borre
Piero Chabod
Piero Del Bondio
Piero Lutzu
Pierre Bernard
Pierre Boissier
Pierre Ferry
Pierre Yves Oddone
Pierre-Guy Joandel
Pierre-Henri Peyret
Pietro Belotti
Pinna Jean-Louis
Puech Marie-Pierre
Quentin Martinez
Rachele Della Putta
Radames Bionda
Rafael Arenas
Raffael Soldano
Raffaele Spocci
Raimund Pichler
Ralf Vanscheidt
Raphaël Arlettaz
Raymond Ulliel
Rebekka Gather
Regina Brendel
Régine Praile
Régis Bortollotti
Reinhard Ganahl
Reinhard Mangweth
Rémi Fabre
Rémi Maison
Remo Basso
Remo Giordano
Rémy Henzelin
Rémy Turpin
Renato Chevrère
Renato Gonnet
Renato Guitti
Renato Roganti
Res Flückiger
Reto Menzi
Reto Strimer
Rey Denis
Riccardo Del Togno
Riccardo Nardelli
Richard Mazagg
Riols Christian
Rita Pellegrini
Roberta Iemmi
Roberto Bertoli
Roberto Bressanelli
Roberto Chaulet

Roberto Cibonfa
Roberto Facoetti
Roberto Ferrari
Roberto Fontana
Roberto Lardelli
Roberto Maio
Roberto Maistri
Roberto Permunian
Robi Janavel
Robin Séchaud
Rocco Leo
Rodolphe Papet
Roland De Coster
Romain Wunegffelen
Romano Salis
Rosanna Bertelli
Rosanna Pedrini
Rose Ranieri
Rosito Vaudan
Rosmarie Schwarz
Roulaud Claudine
Roulaud Yves
Rudolf Hummel
Rudy Vallet
Sabrina Bianchetti
Salgado Hugo
Salvatore Contarino
Samuel
Sandra Cuna
Sandrine Barbe
Sara Canclini
Sarah Burg
Sauvan Mélodie
Seb Dellepiane
Sébastien Bossan
Sébastien Sayer
Sepantona Bergamin
Sepp Rattensberger
Serge Beuchat
Serge Denis
Sergio Fasano
Séverine Haberer
Séverine Magnolon
Severino Moranduzzo
Sibyll Bachmann
Silvan Stöckli
Silvano Togni
Silvia Alberti
Silvia De Martino
Silvia Salomoni
Silvio Colaone
Simon Hohl
Simon Jäger
Simona Danielli
Simone Minessi
Simone Roveyaz
Sonia Joss
Sophie Durant
Sophie Pincenat
Sophie Roux
Stefan Lerch
Stefan Loitfellner
Stefan Rauch
Stefan Sprenger
Stefania Capelli
Stefania Marazia
Stefano Andretta
Stefano Barus
Stefano Borney
Stefano Manini
Stefano Marcolli
Stefano Nicolodi
Steffen Carmin
Stéphane Combeaud
Stéphane Lucas
Stéphane Mélé
Stéphane Mettaz
Stéphane Pénochet
Stéphane Thiébaud
Steve Pervier
Straugan Robert
Susanna Rossi
Susanne Bäbler
Susanne Egger
Susy Pascal
Suzanne Houot
Sylvain Chapuis
Sylvie Argoud-Puy
Sylvie Genève
Tamara Emmenegger
Teresa Spanò
Théo Bonnet
Theo Mazet
Thierry Arsac
Thierry Bosson
Thierry Schwab
Thierry Vincent
Thomas Bachofner
Thomas Jucker
Thomas Montesinos
Thomas Ruckli
Thomas Sesrpari
Thomas Wehrli
Tim Geiges
Tiziana Odelli
Tiziano Quey
Tiziano Ruatti
Toni Mingozzi

Toni Reinstadler
Trille Magali
Ubaldo Ricci
Ugo Parolini
Ursina Wüst
Valentin Meg
Valentina Gusberti
Valeria Cusini
Valeria Moris
Valérie Hagry
Valerio Bertoglio
Van Der Streich Philippe
Vaslin Matthieu
Veronica Soppelsa
Vincent Bridet
Vincent Mugnier Merlin
Vincent Sarlin
Vincenzo Ragaglia
Violetta Fontana
Vittorio Saccoletto
Viviana Verthuy
Voisin Emmanuelle
Walter Borney
Walter Palfrader
Walter Puchner
Walter Valentini
Werner Ruinelli
Werner Schuh
William Guffroy
Wolfgang Buder
Wolfgang Grimm
Xavier Bonnet
Xavier Fribourg
Yan Smit
Yannick Lenoir
Yoann Caillot
Yoé Chetboun
Yves Bötsch
Yves Hodoul
Yves Jacquemoud
Yves Jorand
Yves Zabardi
Yvo Weidmann
Yvonne Merki
Yvonne Reisner
Ziletti Noémie