



INTERNATIONAL
BEARDED VULTURE
MONITORING

4th Alpine Bearded Vulture Observation Days

October 10th-18th 2009

A co-operation within the International Bearded vulture Monitoring (IBM)

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&

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1 Introduction

In October 2009 the Bearded Vulture network organised the “Alpine Bearded Vulture Observation Days” for the fourth time. The days have become an integrated part of the International Bearded Vulture Monitoring. On the one hand it is a tool to raise public awareness and involve public into monitoring action. On the other hand the results are valuable to identify new territorial birds, differentiate between birds in close neighbourhood and census the population. Thanks to the coordination of local administrators the synchronous counts was planned in detail on the local/regional level.

Unfortunately the observers have been confronted with rather difficult weather conditions during this years monitoring period. Therefore the focal observation time has differed depending on the Alpine region. Whereas most of the local coordinators arranged the count on 10th and/or 11th of October, some where forced to shift the date and counted on 17th of October fianlly. For the Alpine summary only the focal observation period on 10th and 11th of October could be considered in order to avoid double count of birds.

A high number of observers (more than 313 people) could be mobilised this year. It seems that it was not possible to close well known monitoring gaps (e.g. Central Switzerland, North-Eastern Italy and some parts of Austria) which had already been identified in the last years.

2 Methods and Data

The aim of the “Alpine Bearded Vulture Observation Days” is an overall count of birds throughout the Alps. This can serve like kind of an index for the Alpine population size. A huge number of observers (scattered all over the Alps during a short time window) is necessary for such a large scale census. In total an area of approximately 188.000km² has to be covered.

Counting results strongly correlate with the weather conditions. The month of October usually has brought stable weather conditions and is well suited to locate new territories. In that season the birds start with nest building, copulations, synchronous flights etc. However, this years weather conditions complicated the monitoring efforts (see Figure 1 and Figure 2).

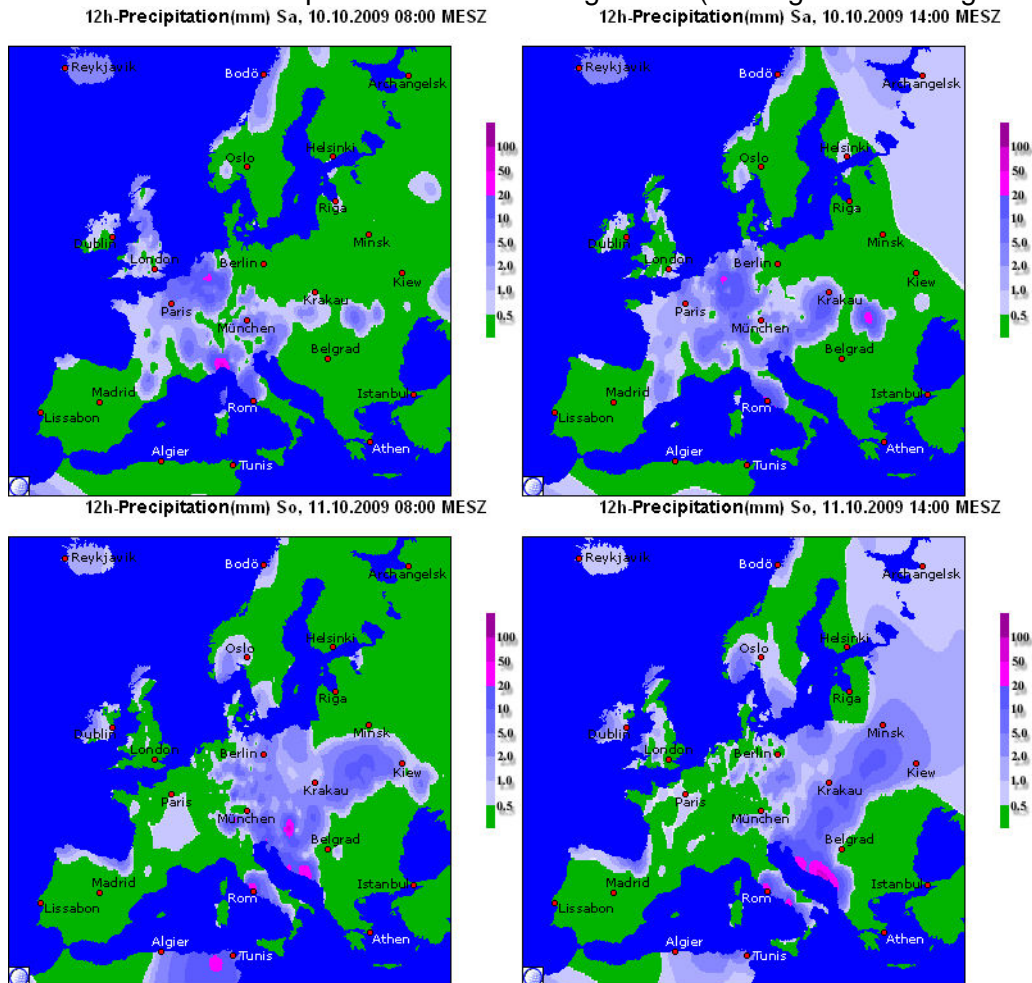


Figure 1: Precipitation in Europe during the weekend 10th-11th of October 2009 (Source: www.wetteronline.de).

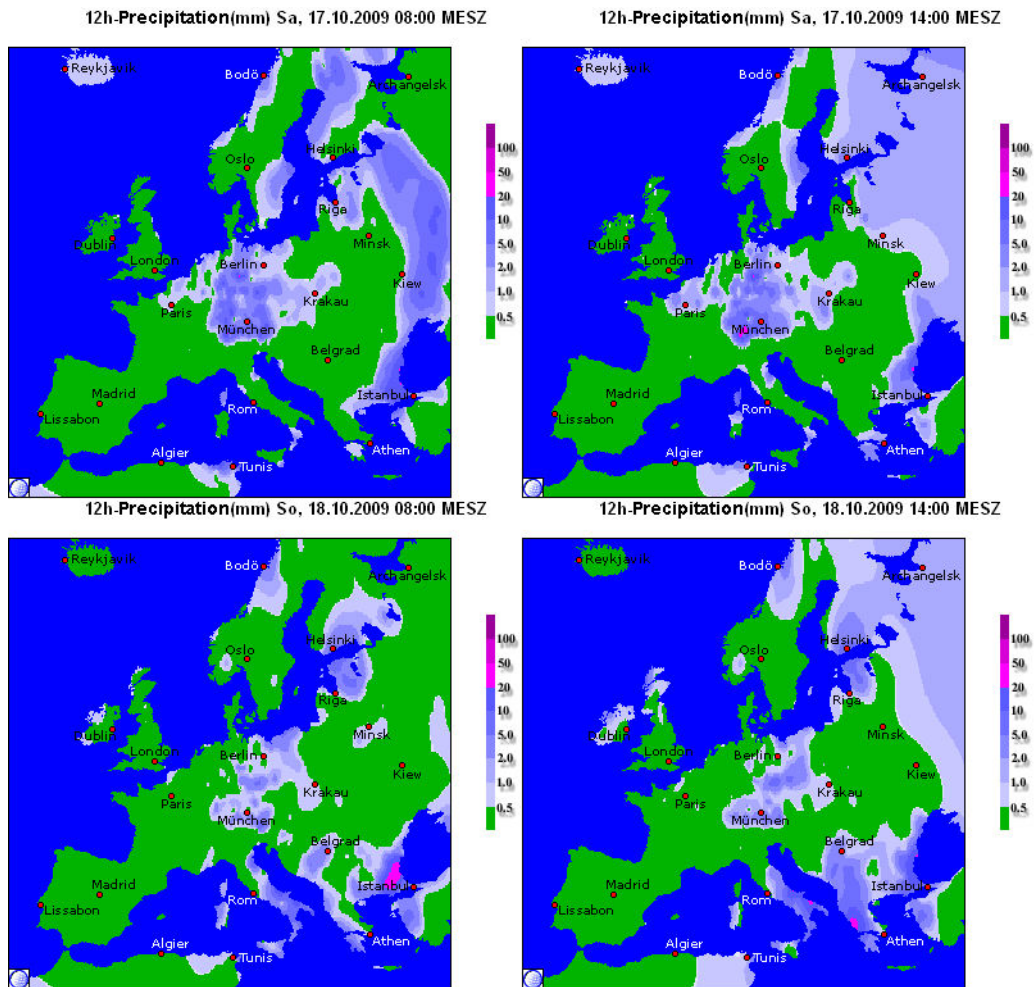


Figure 2: Precipitation in Europe during the weekend 17th-18th of October 2009 (Source: www.wetteronline.de).

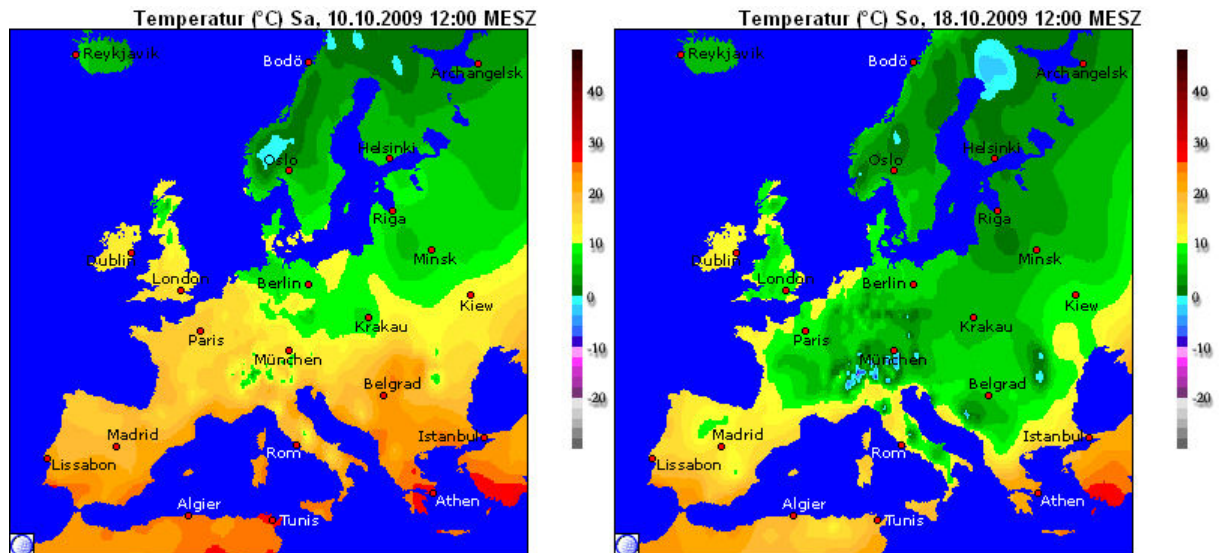


Figure 3: Rapid change of temperature in Europe in October 2009 (Source: www.wetteronline.de).

Since Bearded vultures (especially juvenile and immature birds) tend to shift their habitation rather quickly, the time window was chosen as short as possible to avoid double counts. Only observations made in the focal time have been used to get the maximum number of birds. Birds being part of well known couples have been considered for the count as well. Observations in the full puffer period helped to complete the picture of bird distribution.

Table 1 Time window for the simultaneous alpine Bearded vulture count 2008

Period	Date(s)
Focal time	10 th & 11 th October 2009
Puffer period	12 th -18 th of October 2009

In total a minimum of 237 observation sites could be covered between 10th and 18th of October (170 in the focal time). A considerable number of people (compare chapter 4) went into the mountains to look for the species.

For the next census it was recommended to collect also data of golden eagles (*Aquila chrysaetos*) as a monitoring reference. This would give an even better opportunity to differentiate between areas without bearded vultures and those with monitoring deficiency. However, no data about golden eagles have been collected this year.

The value of monitoring would even increase if the location of monitoring spots remains stable on the long-term. It should be also possible to fill identified monitoring gaps with new observation sites. In any case much attention should be drawn to data format presetting (see Table 3). This is essential to avoid mistakes while summing up results on the Alpine scale.

Table 2 Data presetting for the observations sites/observers

Team	Person	observation date	local position of observer		observation period	
			Latitude (decimal)	longitude (decimal)	From	To
ASTERS	R.Zink	11.10.2008	46,3242164	8,1254532	08:00	18:30

Table 3 Data presetting for the observations (observed birds)

Age	ID/Hypothesis	bird presence		local position of bird	
		from	to	latitude (decimal)	Longitude (decimal)
juv.	mysterybird1	12:30	12:35	46,3242164	8,1254532

2.1 Outlook for 2010

According to our previous experiences still it is recommended to repeat the Alpine Bearded Vulture Observation Day next year in the first half of October (e.g. **9th-10th or 16th – 17th of October 2010**).

The collection of data in the year 2009 did not reach the quality and quantity of the year before. Luckily the position of observation sites has been reported in many cases again. Given the sites of observers it is possible to differentiate between observation spots with and without observations. Accordingly it is possible to evaluate the size of the area monitored and the effort being made. This is necessary to set up an indices such as observers/km². Compared with the efforts of the year 2008 (426 sites with observers) the observation intensity (237 occupied sites) was much lower this year.

To simplify identification and to harmonise age determination an identification booklet (produced by the Natural History Museum of Crete / University of Crete and the Hellenic Ornithological Society) was offered at the IBM homepage at www.gyp-monitoring.com. It is available in German, French and Italian language. On the same homepage the latest update of marking pattern used to mark juvenile/immature vultures is available.

Subadulto del 4^o anno (fase 2.2)



Fase	2.2
Descrizione	Subadulto 4 ^o anno
Iride	Bianco-giallastro
Muta delle piume di volo	Variabile
Testa	Bianca o rosata
Collo	Nero
Sagoma	Alli lunghe e sottili
Triangolo dorsale	No
Colorazione delle copritrici alaris	Marrone/beige

Figure 4: Clipping from the identification guide.

3 Results

Observations collected on the local and regional level have been transferred to the IBM office to fuse them on the entire Alpine scale. This information and additional data stored in the IBM data base have been the basis for this report.

3.1 Monitoring coverage - distribution of observation sites

This year a minimum of 237 monitoring sites has been covered (Figure 5). Especially the Western Alps have been covered very dense by trained observers. For this area a very effective observer network based on professionals has been developed in the past. In the contrary huge parts of the german spoken part of the Alps could not be covered with instructed personal. In these areas the monitoring quality relies on the good will of private people such as hunters, ornithologists etc. Public relation work has been focused on the monitoring event to motivate public for participation/observation. In two other areas (the French Dauphiné and the southern surroundings of Stelvio NP) a huge number of people covered the mountains; however their position (coordinates) has not been registered and/or transferred to the IBM (see redish ellipse in Figure 6). In the future it is recommended to close the gaps in the monitoring network (cf. Report 2008!) and – what is even more important – register each monitoring site especially those where no birds have been observed.

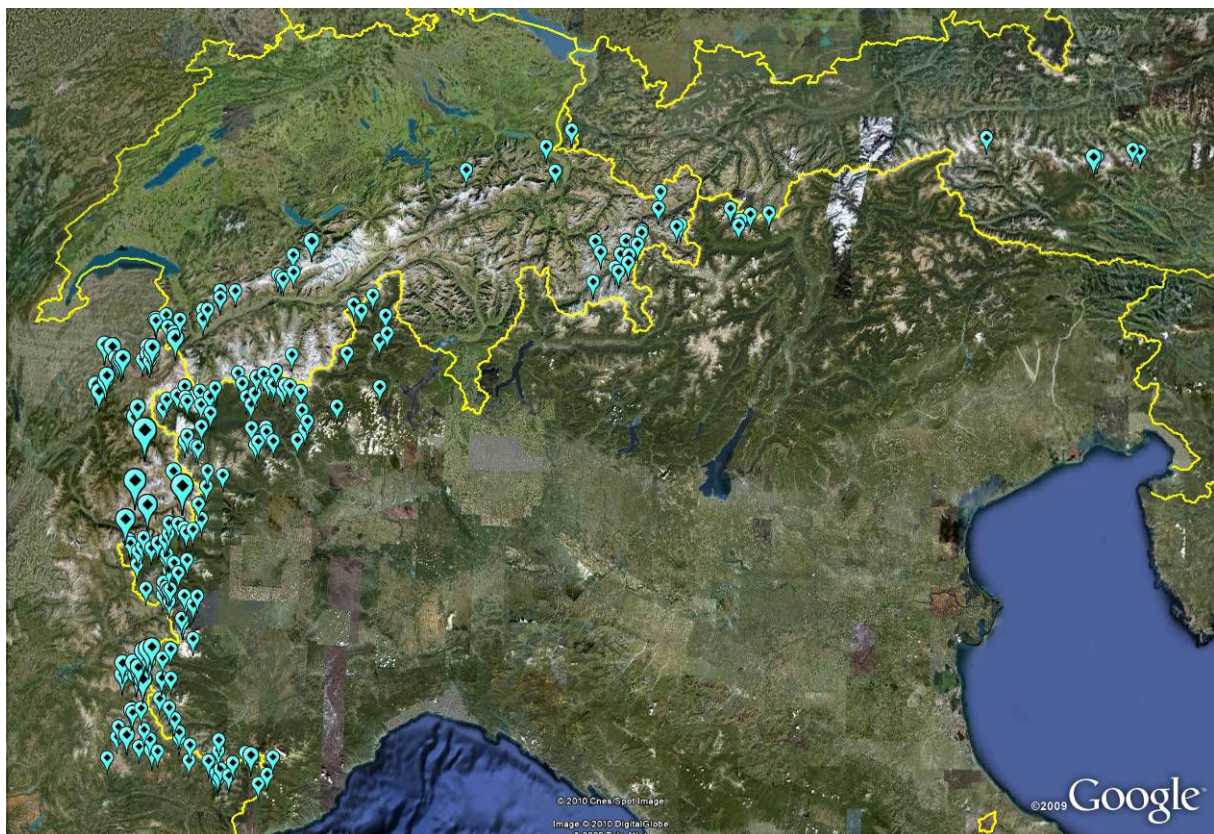


Figure 5: Distribution of observation sites between 10th and 18th of October (n>237).

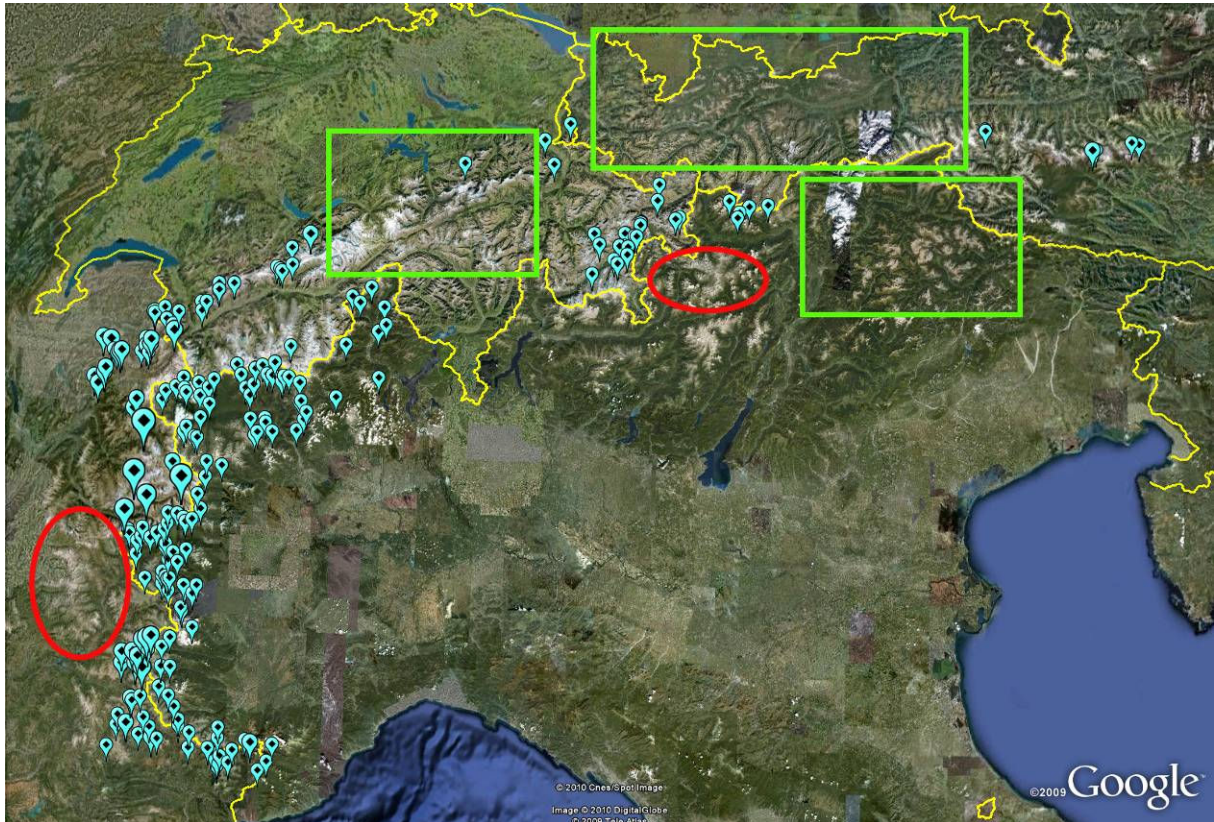


Figure 6: Areas with a lower monitoring intensity (green rectangles). Areas within the red ellipse have been monitored but the sites (coordinates) remained unknown.

In the future our attention shall be drawn to areas with lower monitoring intensity (see rectangles in Figure 6).

3.2 Distribution of birds

In total a number of 208 observations (birds) have been reported between 10th and 18th of October. Considering unfavourable weather conditions this is a very good result even though it is a minus of about 12% compared to the last count (08). It has to be underlined that 75% of the observations (n=156) were registered within the focal time of 36h (on 10th and 11th of October). The distribution of all observations compared with the ones gained only for the focal period reflects a similar but less dense distribution pattern (see Figure 7 and Figure 8).



Figure 7: Distribution of all birds observed between 10th and 18th of October (n=208) including double counts.

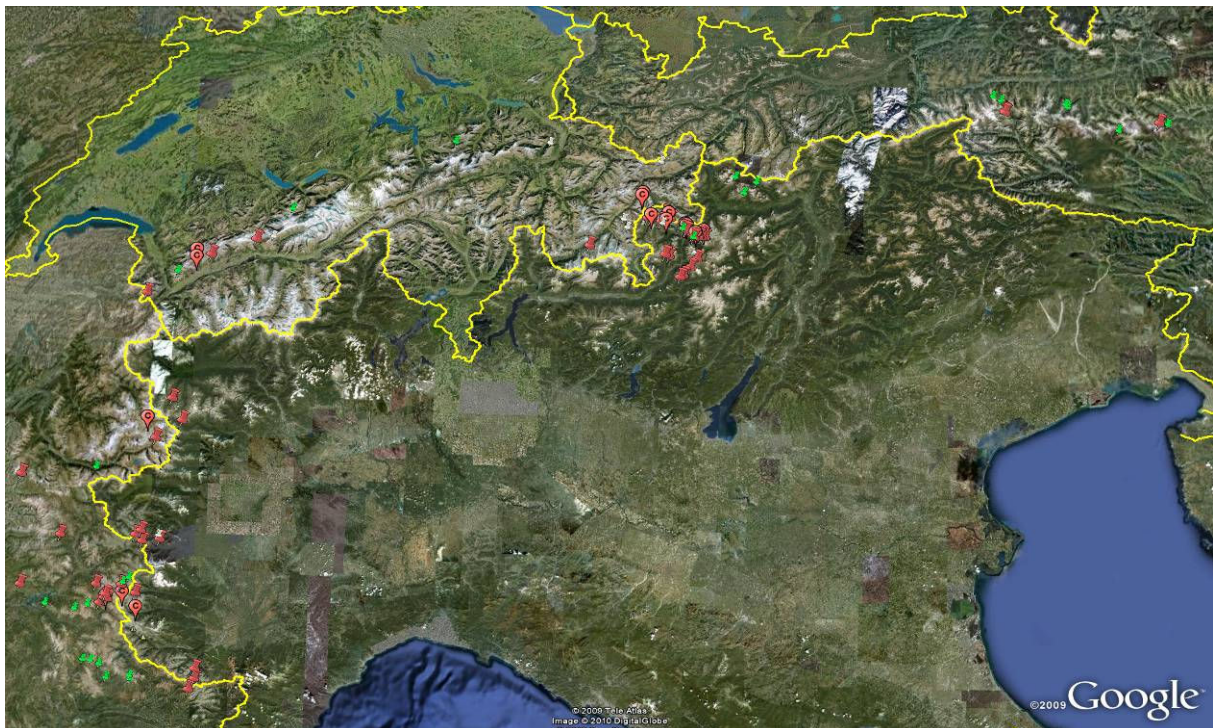


Figure 8: Distribution of all birds observed between 10th and 11th of October (n=156) including double counts.



Figure 9: Distribution of adults observed between (8th)10th and 18th of October (n=125) including double counts.



Figure 10: Distribution of adults observed between (8th)10th and 11th of October (n=97) including double counts.



Figure 11: Distribution of birds <6 years for the period 10th and 18th of October (n=63) including double counts.

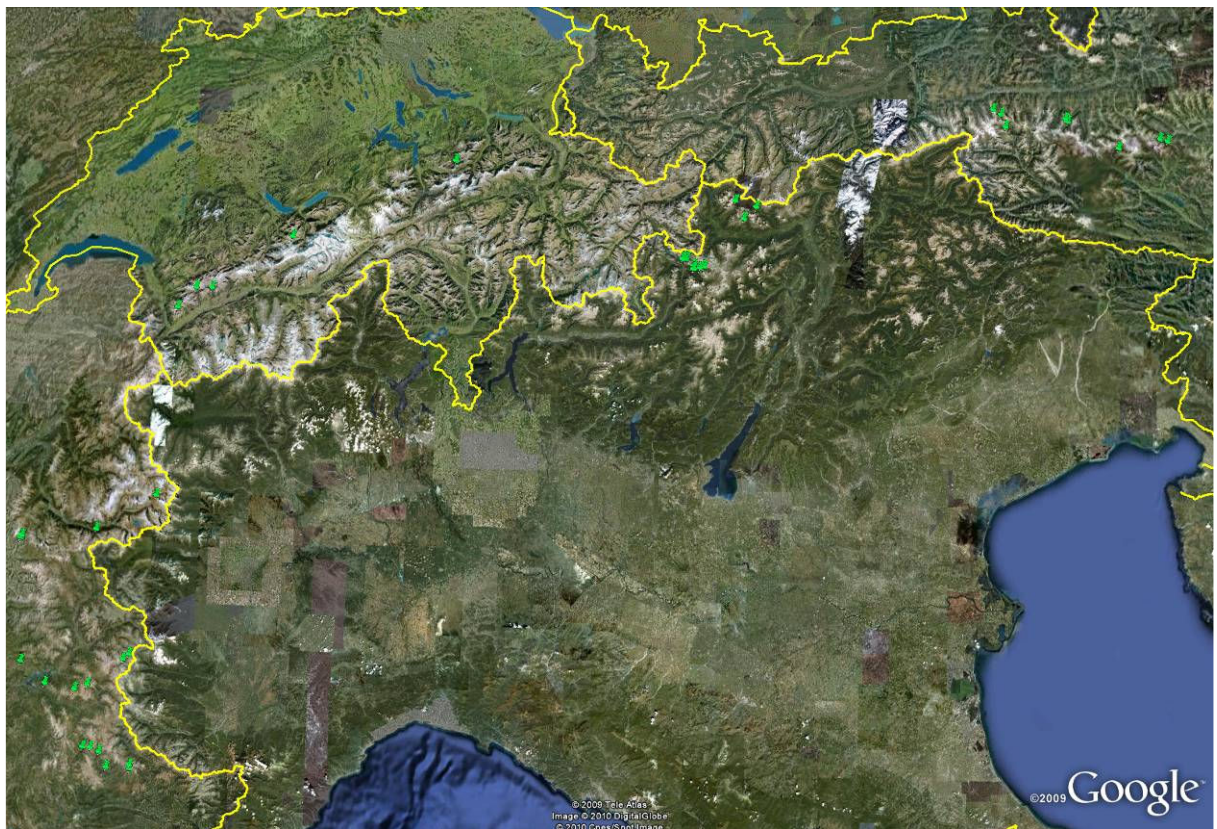


Figure 12: Distribution of birds <6 years for the period 10th and 11th of October (n=48) including double counts.



Figure 13: Distribution of observed couples for the period 10th and 18th of October (n=21 x 2 birds) including double counts.



Figure 14: Distribution of observed couples for the period 10th and 11th of October (n=15 x 2 birds) including double counts.

3.3 Proportion of age classes

Again a rather high proportion (~60%) of mature / adult birds was observed. An average of 20% of observed birds was part of a known couple. That means a high proportion of floaters. The average age of identified, paired birds was 11,73 year (mean 10,15 y, compare Table 7) with the oldest bird being almost 22 (!) years. The proportion of subadult, immature and juvenile birds is ~30%. The average age of identified birds in the group <6 years was only 1,25 years (mean 0,67). About 10% of the birds could not be (age-)identified mostly because of too long observation distances or other difficult circumstances (e.g back light) (see Table 4 and Table 5).

Table 4: Age classes of Bearded Vulture observed between 10th and 18th of October.

Age	Observations	
>6 years	83	40
2 ad. Birds / couple	42	20
<6 years	63	30
unknown	20	10
Total	208	100%

Table 5: Age classes of Bearded Vulture observed between 10th and 11th of October.

Age	Observations	
>6 years	67	43
2 ad. Birds / couple	30	19
<6 years	48	31
unknown	11	7
Total	156	100%

3.4 Counted Birds “Population Size”

Mainly data collected on 10th and 11th of October have been used for the census to avoid double counts. Birds being part of well known couples that could not be observed within the focal time have been counted as well. In case it was not possible to differentiate between two birds they were counted only once. The huge Alpine space was subdivided into four Sections to better geographically allocate the number birds (see Figure 15).

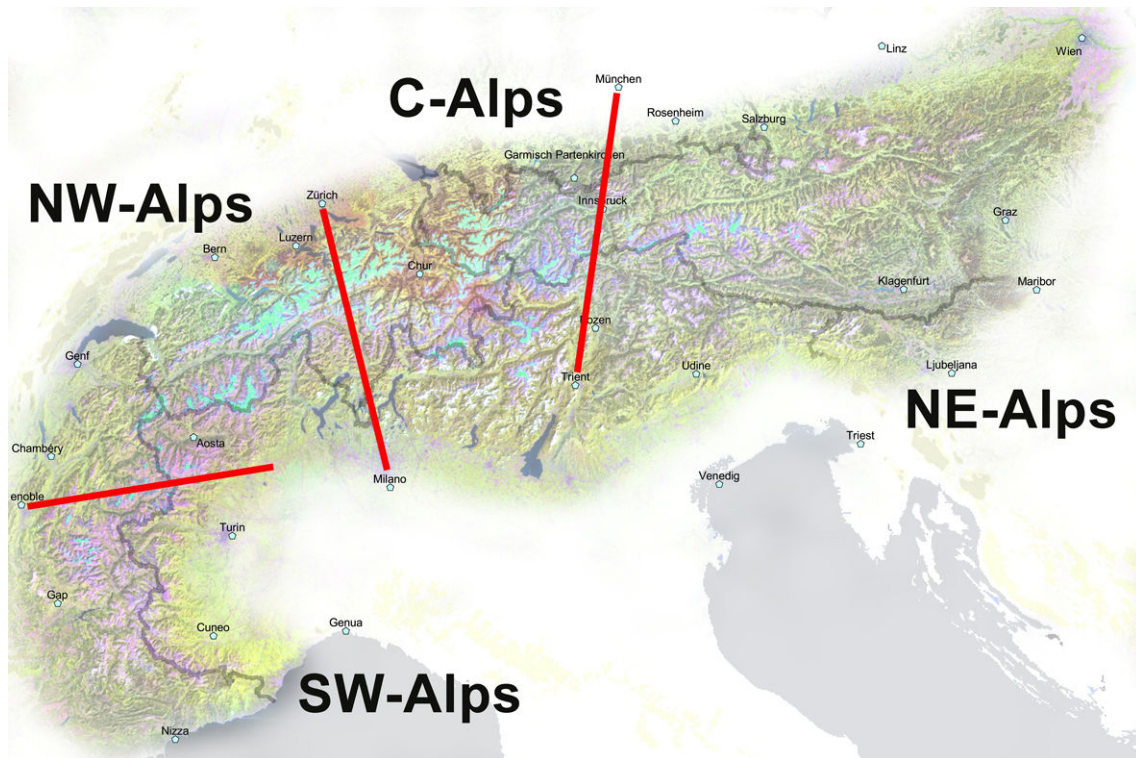


Figure 15: Sub-division of the Alps into South-Western, North-Western, Central and North-Eastern Alps.

3.4.1 South-Western Alps

Within the focal time a total of 12-14 adult birds (including the couple of Terminon which was not observed), 1 subadult and 6-7 immature birds including “Condamine” and “Nonno Bob” have been verified.

Transborder areas of special monitoring concern

1. Between Saint-Martin de Vésubie (FRA) and Entracque (ITA) at least two adult birds used to stay in the past. Even nest building was observed! After the death of Blangiar in spring 2009 one of these birds is missing. But still there are single observations of adult birds on both sides of the border. The question is whether there are one or two adults in the area. For the birds observed on the Italian side Luca Giraudo has good pictures.

Juvenile / Immature	Sub-adult	Adult	Total
6-7	1	12-14	19-22

3.4.2 North-Western Alps

In the North-Western Alps the summary of observations was more difficult this year. This is because of unfavourable weather conditions during the monitoring period. The count had to be shifted in some parts to the 17th of October. Thus several observations could not be attributed to a certain bird and double counts can not be excluded. In respect to these difficult

situation a total of 16-17 adult birds (including 6 couples), at least 2 juveniles (including W67 “Sixt”), 3 immatures (including “Romaris”) as well as 2-3 subadult birds have been verified only within the focal time.

Transborder areas of special monitoring concern

1. Adult birds have been observed since many years in the area of Emosson (CHE). This place is situated between the couples of Sixt (FRA) and Derborence (CHE). During the Annual Observation Days an adult could be verified again on the eastern side of the artificial lake. Moreover a subadult-adult bird was seen 13th and 14th of October in the same area. Unfortunately the area is rather inaccessible. The question is if the area hosts a potential territory.
2. It is recommended to carry out a special census in the border area between the couple of Val d’Isere (FRA), Bonneval (FRA), Ceresole (ITA) and Val di Rhemes (ITA) to clarify whether the adults from the French side use also the Italian slopes or if there are additional sedentary adults on the Italian side (another territory?).
3. On the 18th of October an adult was accompanied by a subadult bird close to Les Chapieux (FRA). The area is close to the territory “Courmayeur” on the Italian side.
4. An adult bird was seen in Ayas (AO, ITA). Would be good to know if it can be seen also on the Swiss side e.g. in Zermatt.

Juvenile	Immature	Sub-adult	Adult	Total
2	3	2-3	16-17	23-25

3.4.3 Central Alps

Also in the Central Alps the observations are more time scattered and summarizing was not that easy this year. Due to numerous data from Engadina and Stelvio NP the sum of adult birds is quite promising. In total 16 but more likely 20 adult birds could be identified. In 2-3 cases pair formation can be expected. This number contains the couples Albula, Tantamozza, Livigno, Ofenpass, Braulio and Zebra. The number of juvenile and immature remained below our expectations. Only 2 juvenile birds (Darwin and Zebrusius) and 2 immature birds (Ikarus and Blick) have been verified. Unfortunately there are no observations from western Austria during the focal period. However, according to Gunther Gressmann 3 birds (1 juvenile, 1 immature and 1 adult) have been observed soon after the Alpine observation period in the outermost norther part of the Central Alps (in the Lech valley). These birds have not been counted!

Transborder areas of special monitoring concern

1. Lately different adult birds have been observed in the border area between Austria and Switzerland close to Val Sinestra, Samnaun (both CHE) and Pfunds (AUT). Only in some case two adult birds have been seen together. Can we expect a new territory in that area?
2. Another interesting area is between the valleys from Naturns (ITA) and Ötztal/Sölden (AUT) where one subadult and an adult (lately maybe two adults!?) use to fly together since more than a year. Let us cross fingers that soon this will be another pair in the Central Alps.

Juvenile	Immature	Sub-adult	Adult	Total
2	2	(1-2)	(16)-20	(21)-26

3.4.4 North-Eastern Alps

For the North-Eastern Alps observations have been reported only for the Hohe Tauern National Park during the focal observation time. A minimum of 9 different birds has been observed there. The total number includes 4-5 adult birds forming the couples of Gastein and Katschberg as well as 3 immature birds (Pinzgarus, Maseta and Eustachius) and a subadult bird.

Juvenile	Immature	Sub-adult	Adult	Total
0	3	1-2	4-5	8-10

Again the highest number of birds was counted in the two well established population nuclei a) Rhône Alpes / Valais and b) Graubünden / Lombardia. A summary of all Alpine birds observed and their age distribution can be seen in the Table 6.

Table 6: Number of identified birds during the Alpine Observation Days 2009.

Alpine Section	adult	Sub-adult	immature	Juvenile	total
South-Western Alpes	12-14	1		6-7	19-22
North-Western Alpes	16-17	2-3	3	2	23-25
Central Alpes	16-20	1-2	2	2	21-26
North-Eastern Alpes	4-5	1-2	3	0	8-10
sum	48-56	5-8		18-19	71-83

The overall number of birds could not reach the numbers of the previous count in the year 2009. Most probably the proportion of juvenile/immature birds was underestimated this year. Thus we expect a higher number of birds for the total Alpine population. This assumption is supported by the numbers calculated based on the model of Schaub et al. 2009 which predicts a total of ~135 birds for the end of the year 2009.

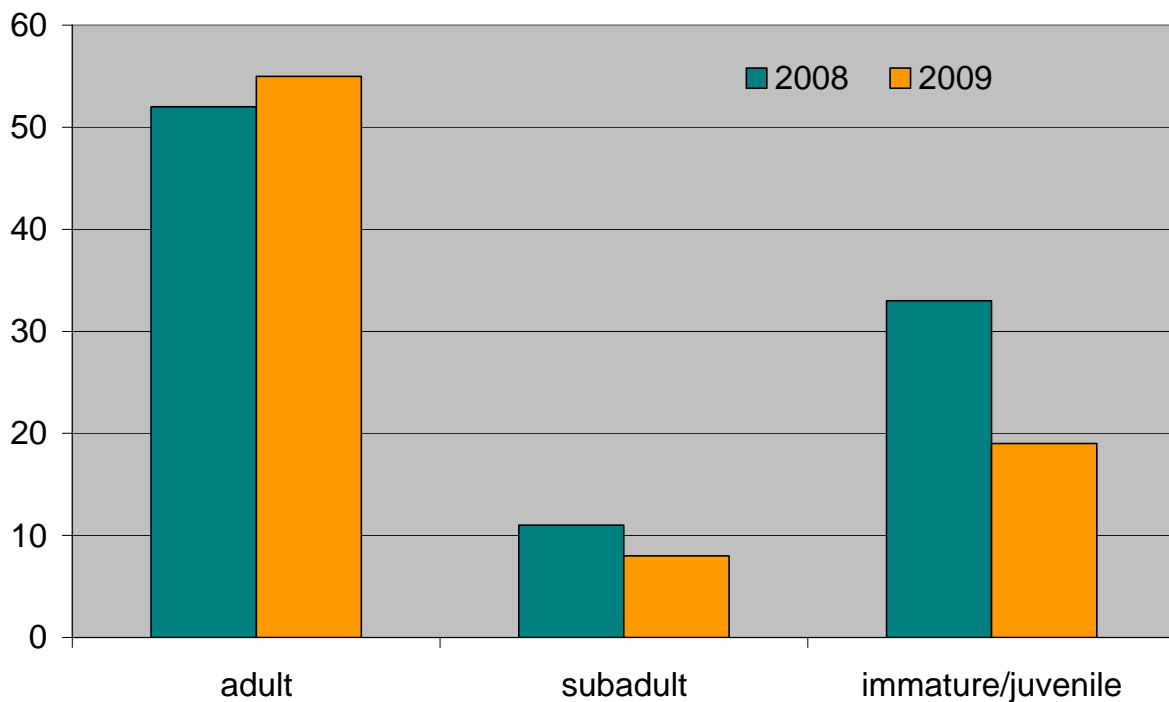


Figure 16: Proportion of age classes between the two Alpine counts in the years 2008 & 2009.

3.5 Identified Birds

At least 23 different birds (~28-33% of all birds) could be identified in the period of the Alpine Observation Days 2009 (Table 7). Even though that number is rather equal to the one of the previous year the proportion is higher because of a decrease in total numbers.

Table 7: Birds identified in the period of October 10th-18th (n=23)

	n1	n2	Name	ID	Birth	Age (d)	Age (y)	
birds with an age <6 years	1	1	Zebrusius	W65	26.03.2009	201		
	2	2	Sixt	W67	25.03.2009	213		
	3	3	Darwin	W69	11.03.2009	215		
	4	4	Condamine	586	28.02.2009	224		
	5	5	Eustachius	587	02.03.2009	243		
	6	6	Maseta	585	28.02.2009	244		
	7	7	Ikarus	557	05.03.2008	599		
	8	8	Pinzgarus	558	05.03.2008	606		
	9	9	Nonno Bob	548	12.02.2008	607		
	10	10	Romaris	528	07.04.2007	924		
	11	11	Blick	524	28.02.2007	959		
					Average	458	1,25	
					Mean	244	0,67	
birds that are part of a couple	12	1	Zebru	W12	18.03.2002	2780	7,62	
	13	2	Martell	395	08.03.2002	2789		
	14	3	Louis	364	09.04.2000	3490		
	15	4	Pablo	359	04.03.2000	3512		
	16	5	Haute Savoie Mont Blanc	361	12.03.2000	3512		
	17	6	Diana-Stelvio	W07	16.03.2000	3513		
	18	7	Veronika	321	22.02.1999	3895		
	19	8	GT028	GT028	01.01.1999	3946		
	20	9	Gilde	299	23.02.1998	4253		
	21	10	Republic 11	288	20.02.1998	4260		
	22	11	Assignat	111	01.04.1989	7505		
	23	12	Balthazar	99	17.02.1988	7915	21,68	
					Average	4281	11,73	
					Mean	3704	10,15	
23	Total					Average	2452	6,72
					Mean	2780	7,62	

Compared to the list of identified birds last year 4 birds (<6 years = Pinzgarus, Nonno Bob, Romaris and Blick) and 7 birds being part of a mature couple (Zebru, Louis, Mont-Blanc, Diana-Selvio, Veronika, Assignat and Baltahazar) have been re-identified.

4 Acknowledgment

Special thanks go to the IBM members for their cooperation and for the organisation of the Alpine census on the regional level. From the south-west to the north-east of the Alps special thanks shall go to the following people and institutions:

- Mercantour National Park (Alain Morand, Monique Perfus and Francois Breton)
- Alpi Marittime Nature Park (Luca Giraudo and Laura Martinelli) and the Western Italian Observer Network
- Ecrins National Park, Dauphiné observer network (Richard Bonet & Christian Couloumy)
- Regione Valle d'Aosta (Christian Chioso, Nicole Vesan)
- Natural Park Mont Avic (Massimo Bocca)
- The Gran Paradiso National Park (Archaz van Hardenberg, Martino Nicolino & Ramona Viterbi)
- The Vanoise National Park (Jean Pierre Martinot & Henri Suret and many others)
- ASTERS (Marie Zimmermann and Etienne Marle)
- The western Swiss Observer Network (Francois Biollaz & Michal Schaad)
- The Stelvio National Park (Enrico Bassi, Luca Pedrotti, Francesca Sotti & Hans-Peter Gunsch)
- The Stiftung Pro Bartgeier (Daniel Heggin, David Jenny-Mettler & Christian Buchli)
- The Hohe Tauern National Park (Ferdinand Lainer, Gunther Gressmann & Michael Knollseisen)

The Vulture Conservation Foundation and ALPARC shall be acknowledged for scientific supervision and for setting the framework of the unique Alpine collaboration. Last but not least thanks to the lead partner of the International Bearded Vulture Monitoring the Hohe Tauern National Park. It has financed a major part of the IBM since many years.

Numerous people participated and supported the Alpine Bearded vulture monitoring event in the year 2009. Many of them could not be mentioned or remained unknown to the IBM office. They should be acknowledged just as much as those observers mentioned in the long list which follows.

4.1 Participants/Observers 2009

Abgottspon, B.&R.; Alberti, Silvia; Anselmet, Roselyne; Antonio; Arlaud, Clara; Arlettaz, R.; Arsac, Thierry; Attinà, Salvatore; AUBIN, Eglantine; Avignon, Cédric; Balais, Christian; Basso, N.; BAUDIN, Etienne; Baumann, Corsin; Beauchamp, James; BENSA, Marion; Benyoub, Abdelbaki; Bergese, Franco; BERNARD, Marc; Bertelli, Marco; Bertero, Luigi; Berthet, Aline; Berthillot, Emile; Bertin, R.; Beurier, Mathieu; Bidat, Mathieu; Biollaz, F.; Blanchin, Hervé; Bliem, Klaus; Boetto, Enrico; Bonnevie, Danièle; Borello, Graziano; Borney, Stefano; Borrel, Michel; Boulanger, Isabelle; Bourdat, Frederic; Bourlot, Marcello; BRETON, François; Calco, Claudio; Cambensy, Jürg; Careddu, Gianfranco; CATY, Jean-François; CATY, Nadine; CEVASCO, Jean-Marie; Charrière, Pascal; Chastin, Alain; Chaulet, ; Chesaux, M.; Chevrier-Comte, R.; Chiereghin, Maurizio; Chiola, Margherita; Chomel, Bénédicte; Cibonfa, ; ClaFeuerstein, Gian; Collombet, Guillaume; Corbet, Thomas; Costantino, V; Critelli, Ennio; Dalix, Jean-François; DEMONTOUX, Daniel; Denis, S.; Desfrennes, Benoît; Deteix, AlainetChristiane; diPietro, Mauro; Diebold, Marianne; Dietrich, B.; Divano, Alessandro; Dogliotti, Marco; Doreau, Nadège; DUBROCCA, Patrick; DUBRULLE, Yannick; Duc, Chantal; Dumaine, Olivier; Duvillard, Jonathan; Egger, E.; Empereur, Caroline; Epardeau, Odile; Fabre, Rémi; Falconnet, Marlène; Fantini, Paolo; Fappani, Alessandro; Fasce, Paolo; FavaleCFS, Kurskinski; Favre, R.-P.; Fernex, Jean; FERRARI, Valentin; Ferrero, Giuseppe; Ferrier, Massimo; FERRY, Pierre; Ficetto, Giorgio; FLITTI, Amine; FLITTI, Stéphanie; Florineth, JachenAndri; Foltzer, Hugues; FORMANOIR,

Bruno; Fornero, Cinzia; FOUCART, Erik; FREYCHET, Didier; Gabbud, B.; Gaillard, Louis; GARAUD, Chantal; GASPARD, Olivier; Gaydou, F.; Genero, F.; Geneve, Sylvie; Genin, André; GIORDANO, Rémo; Giordano, Michelangelo; Girardi; GIRARDON, Christophe; Giraud, Luca; GIROUX, Thierry; Giuliano, Elio; Giunti, L.; Godli, Daniel; Gonin, M.; Good, Albert; Götsch; Gotti, Christophe; GUERIN, Remy; GUIGO, Franck; Gur, Christine; Hegglin, D.; Hembert, Hélène; Heuret, Jules; Hingant, Carole; Houot, Suzanne; ICARDO, Emmanuel; Ilenia, Quercia; Inaudi, Simona; ISOARDI, Christine; ISOARDI, Dominique; JARDIN, Jean-Luc; JAUBERT, Morgan; Jenny, David; Jourdan, Jérémie; Juarez, Nicolas; Kneissl, E.; Koller, R.; Konareff, Marc; Lacosse, Pierre; Lapia, Sergio; Laurençot, Cécile; LAURENT, Olivier; LEBARS, Thomas; Lecocq, Erick; LIBORIO, Albin; LIBORIO, Arthur; LoicTerray, Nicolas; Long, Astrid; LONG, Pierre; Lörcher, M.; LUCAS, Stéphane; Lucini, Osvaldo; Lussiana, Mauro; Mahaut, Aurélien; Malrat, Didier; Manoni, Fabrizio; MARTIN DHERMONT, Laurent; Mélot, Denise; Mercier, Mathias; Mermier, Martin; Meyer, Christoph; Micard, Emilie; Michaud, Claire; Micheli, Carlo; Miravalle, Raffaella; Mogeny, Emile; Molin, C.; MOLTO, Jérôme; Mondon, S.; MONTIGNY, Olivier; Moritz, Santer; Mornieux, Guy; Motta, Gabriella; Moussiegt, Karine; Oehl, A.; ORMEA, Patrick; Padredii, Tiziana; Pane, Andrea; Pe, Roberto; Peirolo; Pellet, Clarisse; Perello, Giorgio; PERFUS, Monique; Perron,; Pettavino, Massimo; Pierretti, Alice; PIQUES, Jean-Christian; Plozza, Arturo; Plumecoq, Benjamain; Pochon, P.-A.; POIRIER, Frédéric; Pons, M.; RAYNAUD, François; REBATTU, Guy; Rebecchi, Annalisa; Reteuna, Daniele; Reverdy, Jean-Claude; Rezer, Antoine; Riboni, Giacomo; RIFFLET, François; Robert, Mathieu; Rodriguez, Daniel; ROPARS, Cédric; Rossetti,; RouxPoignant, G.; Rutten, Céline; SAGOT, Clothilde; SANDOZ, André; SANNA, Emmanuelle; Sannier, David; Santo, Fabio; Sauthier, M.; Scarsetti, Alberto; Schmid, Christian; Schmutz, Martin; Schoop, J.; Schucan, Conradin; SCHWAB, Thierry; Stanga, S.; Streitmaier, D.; Stricker, S.; Suret, Henri; Susy, Pascal; Tabardel, Françoise; Tabeaud, Danile; Taffi, Paolo; TAHINDRO, Jean-Paul; Tambone; THAMIN, Stéphane; Tinguely, S.; Tissot, Nathalie; Tordella, Paolo; TORDJMAN, Patrice; TRON, Lucien; Usseglio, Bruno; Vairoli, Paolo; Valter, Primela; Varetti, D.Varetti; vonHarsteln, Edith; Wassmer, Stefan; Wehrli, Thomas; Weisenhorn, Ulrich; Winkler, K.; Zimmermann, Marie