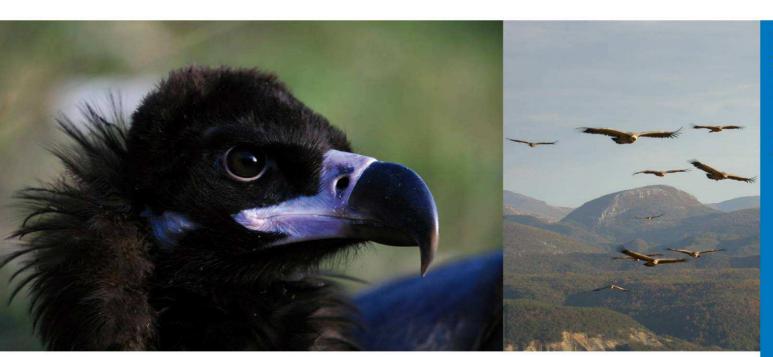


Reintroduction and conservation of vultures in the Verdon canyon

Monitoring report 2010













1. Black Vulture (Aegypius monachus)

The reintroduction of the European Black Vulture in the Verdon area began in 2005. This program is managed by LPO PACA in cooperation with the Black Vulture Conservation Foundation, the European zoological parks, the Spanish wild fauna recovery centres, the associations « Vautours en Baronnies » and « Vautours en Haute-Provence » and LPO's « Mission Rapaces ». It is part of the Black Vulture National Action Plan leaded by the French Ministry of Environment.

This program was funded in 2010 with a financial support from Europe (FEDER), the Provence Alpes Côte d'Azur Region and the Regional Direction of Environment (DREAL PACA).

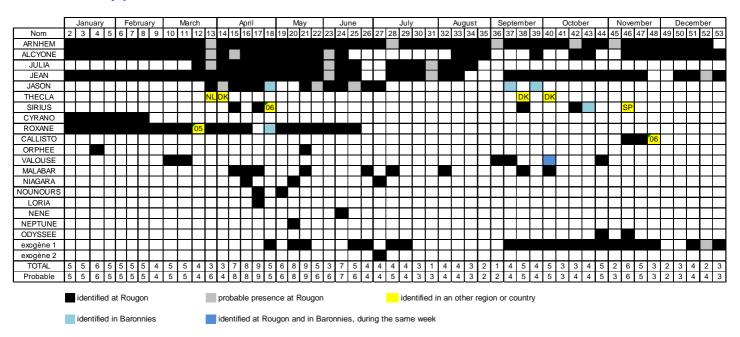
1.1. Releases results

	Black	Vultures r	eleasec	l in Verdon	Exoge			
	released	captured	dead	observed during the year	from Baronnies	from Causses	unmarked	Total
2004						1		1
2005	2		1	2	1			3
2006	2	1*		3	3			6
2007	3*			5	2	1	2/3	10 / 11
2008	5		1*	9	4		2/3	15 / 16
2009	4			11	4		2	17
2010	1		1	9	2	7	2	20
2004- 2010	16	1	3	16	11	9	8/10	44 / 46

^{*} Wupper was released in 2006 then captured, released in 2007, died in January 2008

1.2. Monitoring

1.2.1. Weekly presence table of Black Vultures of Verdon in 2010



1.2.2. Black Vultures released in the Verdon

Release of November 13th 2010

A nestling, born in the Alpenzoo of Innsbruck (Austria), was placed in the aviaries on September 2nd and released by the method of hacking in aviary on November 13th. DNA analyses revealed that the bird, named **CALLISTO**, is a female.

Even though her aviary got opened on the 13th, she only took flight early the next morning. On that day, her two flights took her 4km away from Rougon, where she spent her first night in the wild on the top of a pine. On Monday 15th in the morning, Callisto took off and, because of a strong South-East wind, ended up approximately 10km to the North–West of Rougon. On November 20th, she is observed on a house chimney in Mougins, near the city of Cannes, Alpes Maritimes (P Roque). Two days later, she is observed in Marie and Venanson, Tinée low valley Mercantour Massif (CH Traversier). Since that day, we have no news of Callisto.





Banding of Callisto (E Rowe)

Previous releases, from 2005 to 2009

- ARNHEM (released by hacking in 2005), is observed all year long in the Verdon.
- ALCYONE (released in 2007) is regularly observed on the site from January till June. On August 9th, after two months with no news from him, Alcyone is back in the Verdon, where he will spend the rest of the year. He lost all his faded feathers.
- STÉHÉLINE (released in 2007) was not contacted in the Verdon in 2010. She is in the Baronnies (Drôme) since November 2009, where she nested in 2010 but failed (C Tessier, J Traversier).



- JEAN (released by hacking on August 2nd 2008) is regularly observed all year long in Rougon. Jean lost his two faded primary flight feathers. We saw Jean several times with a small branch on the pick. He seems to be in pair with Julia.



- **JULIA** (released with Jean by hacking on August 2nd 2008) is in the Baronnies (Drôme) in the beginning 2010. She is

observed for the first time in Rougon on March 29th (M Gouyou Beauchamps). From that date until August 16th, she is not only faithful to the Verdon but also to Jean with whom she is often observed on the feeding ground. Julia is not contacted after August 16th.



Julia (JM Rossi)



- JASON (released on December 7th 2008) is a male native of Extremadura. In the beginning 2010, he is in the Baronnies and is back to Rougon on March 23rd (S Henriquet, M Gouyou Beauchamps). He is regularly observed in Rougon during the month of April (S Henriquet, M

Gouyou Beauchamps). On May the 1st, Jason is contacted in the Baronnies (C Tessier) before coming back to Rougon where he is observed on May 17th and June 19th (S Henriquet, M Gouyou Beauchamps, T Rosso). Since September 12th to the end of the year, Jason is in the Baronnies (C Tessier).

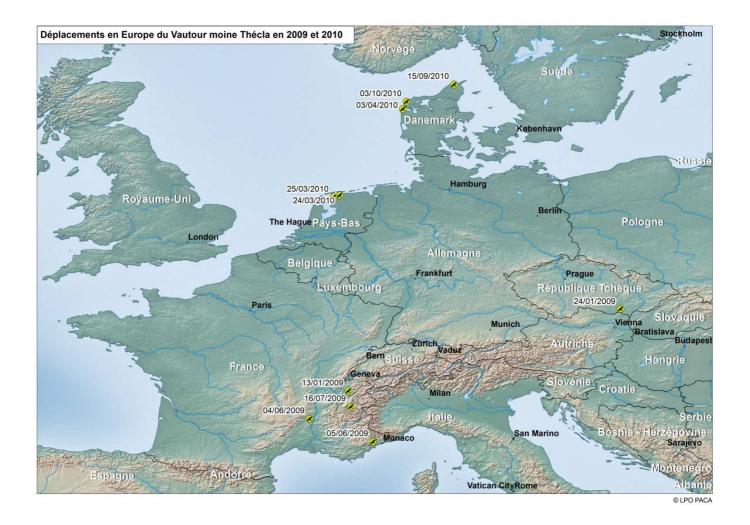


- THÉCLA is a female native of Extremadura, released on December 7th 2008. After 8 months with absolutely no news from her (since July 16th 2009), she is observed on March 24th in Hallum, on the North coast of the Netherlands (H Smedes).

The next day, she is contacted at 20km to the West, in Oosterbierum (R Houtsma). On April 5th, she is still in Danemark, observed in Harboøre (K A Bruun), more than 1400 km away from Rougon. More than 5 months later, on September 15th, Thécla is once again observed in Danemark, in Hjørring. This observation is confirmed the 3rd of October, when Thécla is contacted on Thisted, in the North of Danemark (AJ Joergen).



Thécla à Hallum, NL (H Smedes)





- Franc is a male, born on April 28th 2009 in Ostrava zoo (Czech Republic). He was released on October 18th 2009. Franc was last seen in the Verdon on October 28th 2009, and was not contacted since.



- SIRIUS was born on May 7th 2009 Bochum zoo (Germany). He was released with Franc on October 18th 2009.

Sirius was present in the Baronnies in the beginning of the year. He is contacted in Rougon from the 9th till the 23rd of April (4 observations, S Henriquet, M Gouyou Beauchamps). On April 29th, P Misiek took, a picture of Sirius at the "col de Vence", Alpes-Maritimes (see picture). After 5 months with no contact, Sirius is observed in the Verdon on September 17th (M Gouyou Beauchamps) and on October 12th (S Henriquet) before going back to the Baronnies where he will be seen on the 23rd of October (C Tessier). Sirius' last observation was on November 8th in Organya, in the Spanish Pyrenees (Millet Sargatal Aleix).





ROXANE is a female native of Estremadura (Centro de recuperación « Los Hornos » - Sierra

de Fuentes) born in 2006. She was released on December 9th 2009.

Roxane is regularly observed in Rougon until June 16th 2010. However, she will leave the Verdon twice before that day. First, she is contacted in Chanousse, Hautes-Alpes (E Dupland) on March 17th. Then she is observed on Baronnies' feeding ground on May 1st (C Tessier). She was not seen after June 16th.



Roxane (JM Rossi)



- **CYRANO** is a male native of Estremadura born in 2006, released with Roxane on December 9th 2009. During the month of January, he is regularly observed on Rougon's feeding ground (S Henriquet, P Monin). After January 29th, he is only contacted by radio tracking. He is found

dead near the feeding ground on February 16th (P Monin, M Gouyou Beauchamps). He weighed 4.1 kg at death; the cause of mortality is therefore thought to be denutrition.

1.2.3. Exogenous Black Vultures

At least 11 exogenous black vultures came to the Grand Canyon in 2010: 2 birds from the Baronnies, 7 from the Causses, and 2 immatures of unknown origins with no ring and no faded feathers. On April 20th, a record was set with 9 black vultures on Rougon's feeding ground (Arnhem, Jean, Julia, Jason, Sirius, Loria, Alcyone, Nounours and Malabar)



Quarry, April 20th 2010 (D Jacquemin)

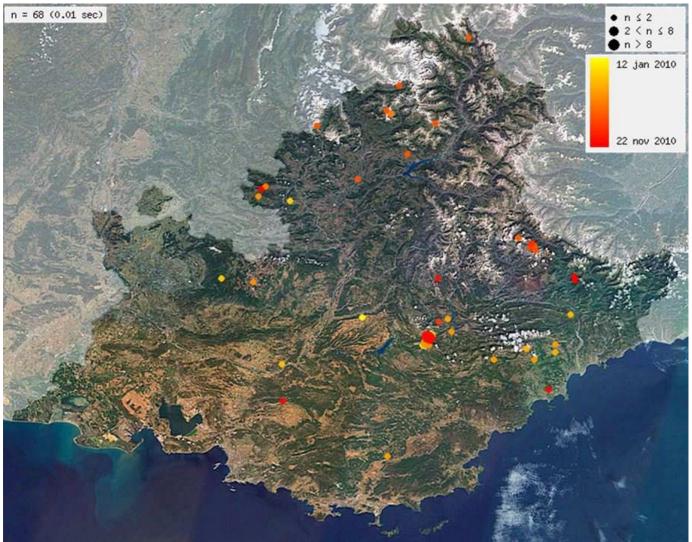
- **Orphée**, female born in 2006 released on July 22nd 2006 in the Baronnies. Observed in Rougon on January 19th and May 21st.
- **Valouse**, female born in Bochum zoo (Germany) in 2008, released on September 2nd in the Baronnies. She is observed in Rougon on March 2nd, 5th and 12th and during the months of September and October (4 observations).
- **Malabar**, ringed at the nest in 2008 in the Causses. He is observed in Rougon between the 9th and 23rd of April, and then on May 17th and 19th, June 25th, July 26th, August 3rd and finally September 14th and 28th.
- Niagara, ringed at the nest in 2009 in the Causses. He is seen in Rougon on April 16th, May 11th and July 2nd.
- Nène, ringed at the nest in 2009 in the Causses. He takes part in the quarry on June 8th.
- Neptune, ringed at the nest in 2009 in the Causses. He is observed in Rougon on May 11th.
- Loria, ringed at the nest in 2009 in the Causses. She is observed on April 20th and 23rd in the Verdon.
- **Nounours**, ringed at the nest in 2007 in the Causses. He is seen twice in Rougon, on April 20th and May 4th.
- **Odyssée**, ringed at the nest in 2010 in the Causses. He is observed in Rougon on October 29th, and November 12th and 13th.

An immature black vulture with no faded feathers nor ring but recognizable with a white feather on its left wing, is regularly observed in the Verdon from April 27th until July 13th, and from September 6th until the end of the year.

On July 2nd, another immature with no faded feathers nor ring is present on the feeding ground.

1.2.4. Regional movements

The following map presents the Black vulture observations in PACA region in 2010. These data were collected through the web site Faune-paca (www.faune-paca.org), administrated by the LPO PACA. The map shows the observations in Verdon, in Mercantour and in Grasse's Prealps. We also see the observations in the North of the region (Rosanais, Dévoluy, Ecrins), which are the result of the movement of birds from the Baronnies' colony.



Observations of Black Vulture in PACA in 2010 (www.faune-paca.org)

2. Griffon Vulture (Gyps fulvus)

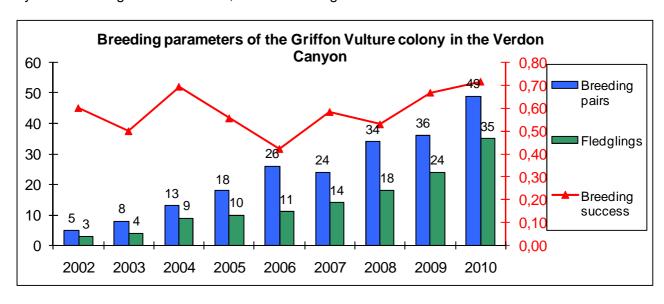
2.1. Breeding monitoring

The monitoring in 2010 allowed the identification of 49 breeding pairs. As every year, the number of breeding pairs increased compared with the previous years; 36% more eggs in 2010 than in 2009. Clutches occurred from the end of January to the end of March. At least 10 breeding vultures were born in the colony: Vooutour (2002), Zaou (2003), Yèble (2004), Yucca (2004), Xénolite (2005), Xilidine (2005), Xylocope (2005), Xénarthre (2005), Xérus (2005) et Xérophile (2005). The colonization of the Var bank of the Grand Canyon continues with 5 breeding pairs and 4 fledglings.

35 fledglings took flight this year, which means 128 vultures born in the Grand Canyon since 2002. Twenty-one chicks were ringed in the nest, and 18 of them were observed in Rougon during the autumn.

Year	Breeding pairs (b)	Productive pairs (c)	Fledglings (d)	Breeding success (d/b)	Fledgling rate (d/c)	
2002	5	3	3	0,60	1,00	
2003	8	5	4	0,50	0,80	
2004	13	10	9	0,69	0,90	
2005	18	14	10	0,56	0,71	
2006	26	17	11	0,42	0,65	
2007	24	19	14	0,58	0,74	
2008	34	26	18	0,53	0,69	
2009	36	28	24	0,67	0,86	
2010	49	42	35	0,71	0,83	

This year's breeding success is 0.71, which is the highest since 2002.



2.2. Colony effectives

Counting the vultures during the quarries on the main feeding ground in Rougon is the most reliable way of studying the demography of the colony. In January, the average number of vulture observed per quarries was around 90. In February this number decreased to 70 birds per quarry, marking the beginning of the breeding cycle. In April, the number of birds observed progressively rose up to reach 130 birds per quarry in the beginning of the month of July. From July to December, the number of birds remained at a high level, fluctuating between 70 and 190 birds per quarry. A new record is set on October 5th when a total of 190 griffon vultures were observed at the feeding ground. This record is almost reached on December 1st with 185 vultures on the feeding ground.

2.3. Origin and exogenous vultures

Quarries monitoring in Rougon allowed us to read 3670 rings (Darvic and metal) and to identify 179 Griffon Vultures in 2010 (ring reading ratio=40%, n=83 quarries). A total of 373 vultures have been identified since 1999 (35 717 rings identified). For the first time since the beginning of the reintroduction program, the number of vultures born in the wild in Verdon is higher than the number of released vultures.

		Verdon	Verdon	Baronnies	Diois	Causses	Pyrénées	Espagne	Italie	Croatie	Total
		(released)	(born in								
			the wild)								
-											
	2010	43	63	17	9	16	1	28	1	1	179
Ī	Total	91	87	44	26	35	6	74	5	5	373

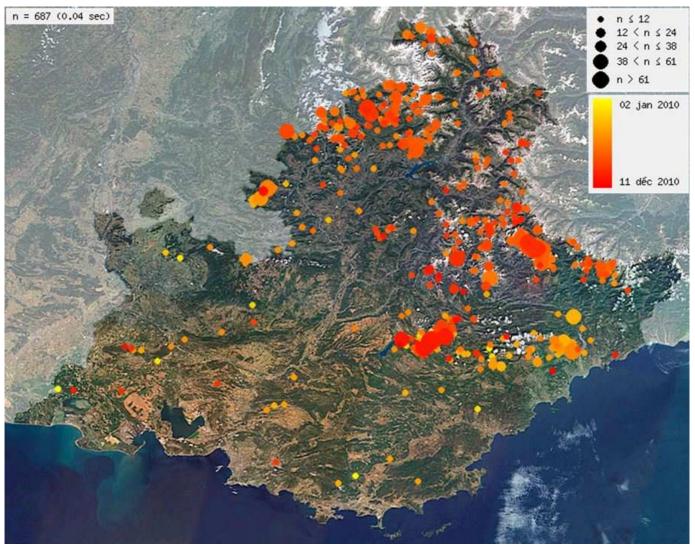
2.4. Movements and vital area

687 observations of Griffon Vultures have been collected through the web site Faune-paca (www.faune-paca.org), run by LPO PACA. These data reveal the continuum between the Eastern part of the vital domain of the Baronnies' colony and that of the Verdon's colony (approx. 530 000 Ha).

On february 21st, the first movements of vultures are observed, with 6 birds in Mons, Var (G Pullino). These movements go on during the months of April and May. The largest observations are made on April 19th, 24 vultures in Bézaudun-les-Alpes, Alpes Maritimes (M Belaud), 23 on May 15th in Vence, Alpes Maritimes (T Corveler) and 29 on May 22nd in Coursegoules, Alpes Maritimes (M Boucherot).

In June, several observations in the Mercantour attest of the following of sheep flocks in mountain pasture by griffon vultures. During summer, it appears that griffon vultures are contacted all over Southern Alps with major concentrations in the Mercantour and the Ecrins. The main observations were on August 9th, 70 vultures in Isola, Alpes Maritimes (JC Piques), on August 21st, 53 vultures in Réallon, Hautes-Alpes (T Joubert), and on August 25th with 52 birds in Saint Etienne de Tinée, Alpes Maritimes (JC Piques). Baronnies and Verdon colonies' vital domains are now continuous. Moreover the number of birds summering in these mountains is higher than the total number of birds in the Baronnies and the Verdon.

On August 15th, a simultanous count organized by D Demontoux for Mercantour National Park and the LPO PACA for the Verdon, revealed that more than 300 vultures were present in the Mercantour while 100 were in the Verdon. The same operation was repeated on September 14th, and revealed the presence of 120 vultures in the Mercantour and 90 in the Verdon.



Observations of Griffon Vulture in PACA in 2010 (www.faune-paca.org)

During the year 2010, 3 griffons from Verdon were observed abroad.

On January 31st, Prof. Sarà, skillful Italian naturalist, is observing a wild quarry in Fadial, Senegal. Amongst a hundred vultures of 5 different species, he spots a bird with the ring DMY. The information travels back up to the French vulture network, and it turns out that DMY, alias "Trionyx", was born in 2009 in the "Barre de l'Aigle" in Rougon. It was ringed at the nest on June 16th and took its first flight between July 30th and August 7th. It was observed during a quarry in Rougon on September 21st and October 2nd. These observations confirm that this bird flew over 4000 km between Verdon and Senegal in a little bit less than 4 months!

On June 21st, "Turbine", a Griffon Vulture born in the cliffs of Verdon in 2009 and ringed DMU, is observed in the North-East of Italy, on a feeding ground in Friuli (F Genero). DMU was last observed in Verdon on May 11th 2010 (M Gouyou Beauchamps) and will be back the 22nd of October (S Henriquet, M Gouyou Beauchamps).



On October 15th, a griffon vulture wearing the ring DOO is captured in Monte Velino Reserve's aviaries, in Abruzzi region in Italy (M Posillico, see picture to the side). This bird, named "Urous" was ringed at the nest in Verdon in 2008. Its last observation was on April 23rd in Rougon (S Henriquet, M Gouyou Beauchamps). Urous is back to the Verdon on December 20th, 2 months after its capture in Italy (S Henriquet, M Gouyou Beauchamps).

2.5. Mortality

In 2010, two cases of mortality have been recorded:

- April 17th, a Spanish vulture born in 2005, ringed 493 (right) is found dead on the side of the road D952, below the "Barre de l'Aigle" (Rougon). The cause of death is still unknown. This bird first came to Verdon during the summer of 2006 and then came back every summer for a few days or a few months. "493" was regularly observed in Rougon from mid-July 2009 till the end of the February 2010.
- December 8th, "Destourbes", a vulture ringed AYY and TY 0540 is found dead right at the foot of an electric post in the "Plan de Châteauneuf" (Palud-sur-Verdon). The bird is probably deéad from electrocution or collision with the subtransmission line. Since its release on September 28th 2033, Destourbes has always been in Verdon. It was last observed in Rougon, during a quarry on November 26th 2010.



"Destourbes", dead below a subtransmission line. (M Gouyou Beauchamps)

Since 2009, ERDF Méditerranée is leading a project to secure the subtransmission lines on Rougon. In 2010, anti-collision beacons called "Firefly" were installed on over 700 m of lines where 2 vultures were found dead in 2006 and 2008. In 2011, this effort will be carried on to secure first priority subtransmission lines in Castellane and Palud-sur-Verdon.







"Firefly" beacons and installation on a subtransmission line in Rougon (ERDF)

3. Egyptian Vulture (Neophron percnopterus)

Like in 2009, Egyptian Vulture did not breed in Verdon in 2010. The first Egyptian Vulture was observed on April 3rd (N Delelis). Two adults have been regularly observed together through summer.

- Adult 1: observed from April 14th till the end of June, has only one metal ring (Museum) on its right tarsus (S Henriquet, M Gouyou Beauchamps, T Rosso), which could match with the male observed in 2007-2008 which lost its rings. This information can only be checked by reading the metal ring.



Adult 2, Rougon (JM Rossi)

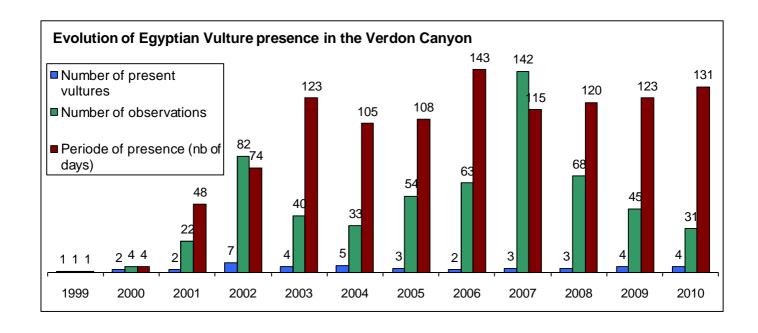
- Adult 2: no rings, identified thanks to the black markings under its eyes. This bird is observed from April 30th till June 7th.

This couple has regularly frequented breeding cavity, notably the nest used in 2007 and 2008.

On June 5th, 3 adults Egyptian Vultures are observed simultaneously while flying over Rougon (V Roustang).

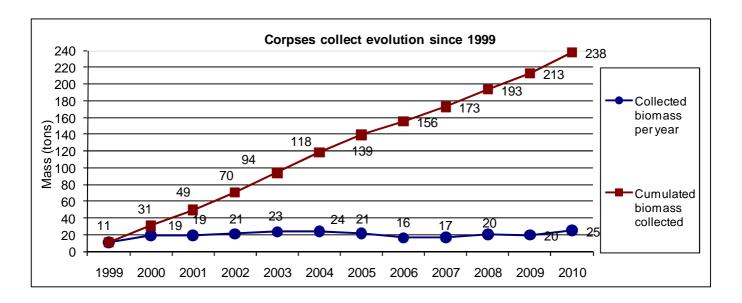
An immature (2nd year) is observed on July 2nd, 8th and 9th (S Henriquet, V Roustang, T Rosso, A Burle). This bird had no ring.

In total, a minimum of 4 Egyptian Vultures came to Verdon this year, from April 3rd till August 12th.



4. Natural quartering

Griffon and Black Vultures are necrophagous birds, which play a role of scavengers by eliminating ungulate corpses in the alpine meadows in Haute-Provence. Their presence is closely linked to Humans and to pastoralism. The feeding ground and the aviaries are supplied by ovine and caprine corpses (breeding losses) collected in a refrigerated container located in Saint-André-les-Alpes, and directly at certain breeders. Since 1999, more than 238 tons of corpses have been eliminated by these natural scavengers.



The collect of breeding losses permitted to provide to the vultures 25 tons of ovine (518 sheep and 355 lambs) and caprine (60 goats) corpses which make this year's collect the largest since the beginning of the reintroduction program in 1999.

At the same time, 6 feeding places have been provided by the breeders. Two individual feeding places were built this year, and two other projects are planned for 2011.

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