

MONITORING OF FOREST RAPTORS IN LOZÈRE AND
THE CÉVENNES NATIONAL PARK:
SHORT-TOED SNAKE EAGLE

Results of 2017

Jean-Pierre & Isabelle MALAFOSSE



The Cévennes National Park

**MONITORING OF FOREST RAPTORS IN LOZÈRE AND
THE CÉVENNES NATIONAL PARK:
SHORT-TOED SNAKE EAGLE**

Results of 2017

This year's weather quite favourable for the Short-toed Eagles in the Cévennes. Mild spring and warm summer, all perfect (two sentences without a verb, however, the feeling is what matters).

I) - Inventory:

This year, we recorded and categorized the breeding pairs separately as certain, probable and possible ones. The usual numbers of the report have changed. In the light of the numbers we know of any decrease or increase of the pairs. Although, the global population has not changed, 20 years of observations allow us to reevaluate the current situation of the species.

The table below contains the number of pairs and their density in the survey area in 2017.

Biogeographical regions	Certain	Probable	Possible	Total
Cévennes (CEV)	30	11	15	56
Causses (CAU)	31	16	16	63
Aigoual (AIG)	20	23	5	48
Mt Lozère (LOZ)	9	8	14	31
Aubrac (AUB)	2	14	-	16
All total	92	72	50	214

Table n° 1: Number of nesting pairs by regions in the survey area (certain, probable, possible pairs).

Biogeographical regions	certain pairs	probable pairs	possible pairs	total	area (ha)	number of pairs 100km ²	ha/number of pairs
Cévennes	30	11	15	56	60 000	9,33	1071
Causses	31	16	16	63	90 000	7	1429
Aigoual	20	23	5	48	45 000	10,67	937
Mt Lozère	9	8	14	31	70 000	4,43	2258
ZONE	90	58	50	198	265 000	7,47	1338

Table n° 2: number of pairs and their density in four biogeographical regions in the Cévennes National Park in 2017.

II) - Breeding:

The 81 checked territories comprise 49% percent of all known Short-toed Eagle pairs (164 pairs). Occupation rate grew to 90% in 2017, only six territories were abandoned. The occupation rate of breeding pairs fluctuates somewhat between 80 and 95% over the years.

A Table n°3 presents the breeding results broken down to biogeographic regions in relation to all observed pairs. The table contains egg laying, hatching and fledging rates. These results relate to three parameters: egg-laying, hatching and fledging. They specify, for the pairs monitored, the number of eggs laid, the number of chicks hatched and the number of fledglings as well as the average rate calculated for these three parameters.

Cévennes (14 pairs) - Egg-laying: 15 / 15 = 1 - Hatching: 13 / 13 = 1 - Fledging: 11 / 14 = 0,79	Causses (12 pairs) - Egg-laying: 12 / 12 = 1 - Hatching: 9 / 12 = 0,75 - Fledging: 7 / 12 = 0,58
Aigoual (9 pairs) - Egg-laying: 9 / 9 = 1 - Hatching: 8 / 9 = 0,89 - Fledging: 6 / 9 = 0,67	Mt Lozère (9 pairs) - Egg-laying: 8 / 9 = 0,88 - Hatching: 6 / 9 = 0,66 - Fledging: 5 / 7 = 0,66
	All areas (44 pairs) - Egg-laying: 44 / 45 = 0,98 - Hatching: 36 / 43 = 0,84 - Fledging: 30 / 44 = 0,68

Table n° 3: Details of breeding success of 44 pairs in 2017 in four biogeographical regions. For further details see the text above.

Breeding success in previous years:

1992 = 0,33 (N=15)	1998 = 0,64 (N=33)	2004 = 0,31 (N=64)	2010 = 0,22 (N=50)	2016 = 0,45 (N=44)
1993 = 0,66 (N=15)	1999 = 0,71 (N=38)	2005 = 0,54 (N=48)	2011 = 0,42 (N=50)	2017 = 0,68 (N=44)
1994 = 0,47 (N=17)	2000 = 0,58 (N=59)	2006 = 0,79 (N=42)	2012 = 0,23 (N=52)	
1995 = 0,78 (N=27)	2001 = 0,57 (N=67)	2007 = 0,56 (N=48)	2013 = 0,41 (N=49)	
1996 = 0,65 (N=37)	2002 = 0,52 (N=62)	2008 = 0,50 (N=56)	2014 = 0,69 (N=52)	
1997 = 0,40 (N=35)	2003 = 0,59 (N=61)	2009 = 0,41 (N=49)	2015 = 0,74 (N=38)	

Average breeding success over 26 years = 0,54 fledgling/pair (N=1152 breeding attempts)

We followed 44 pairs closely, as in 2016. When the birds arrived in March the weather was pleasant and the almost all pairs started to nest. The weather conditions have continued to be favourable with low precipitation and there were some scattered showers and fog only on a few days. 30 fledglings were reared, that gives 68% successfully breeding pairs in 2017.

The average egg-laying date in 2017: April 15 (N=22)

The evolution of the average egg-laying date

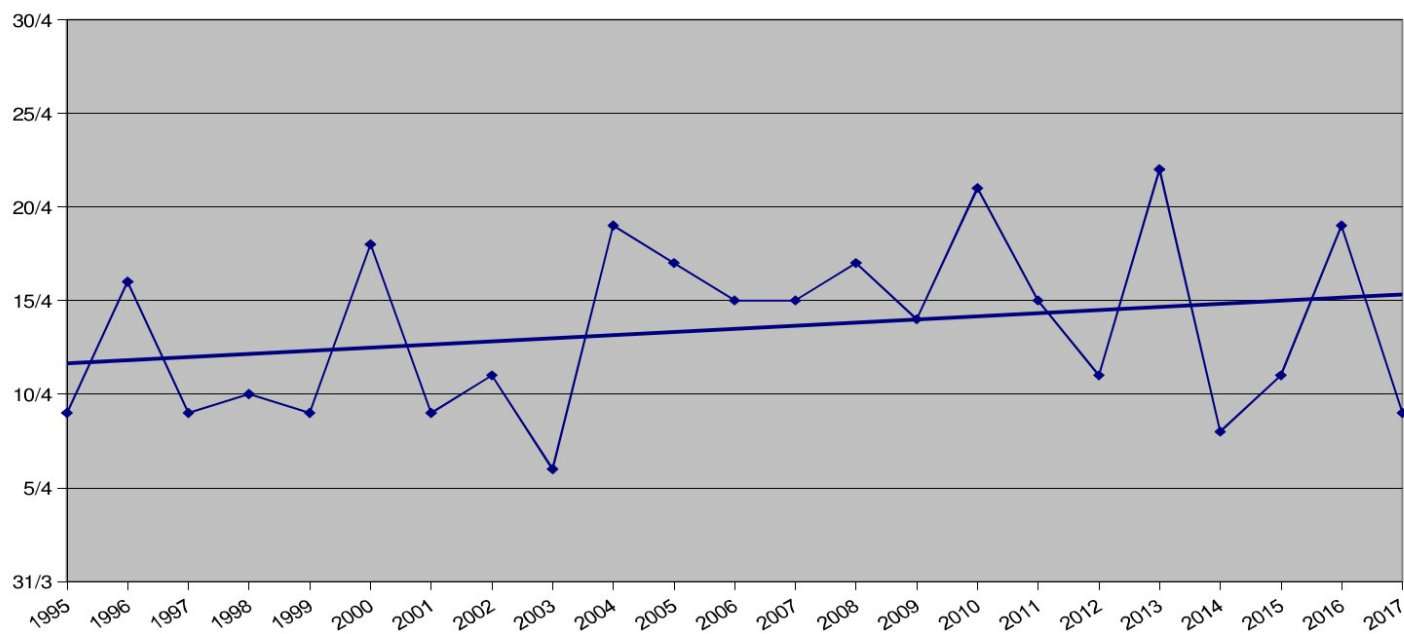


Chart n° 1: Changes of the average egg-laying date in the past 23 years. Overall average date is April 14 (N=498).

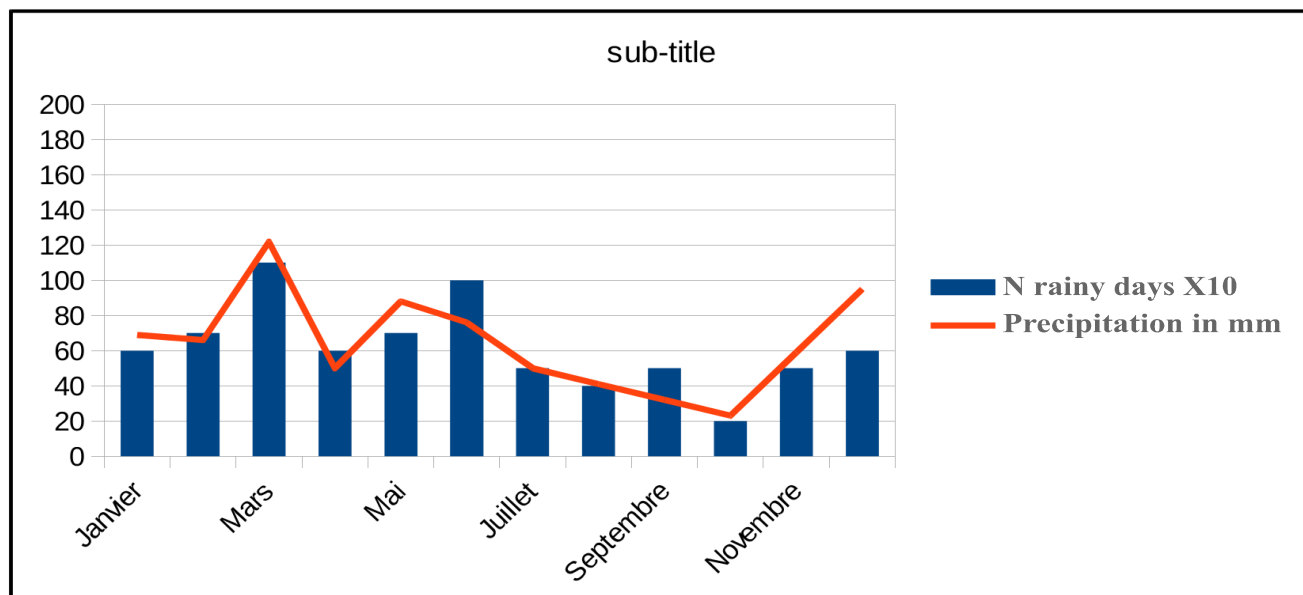


Chart n° 2: Precipitation (mm) and number of rainy days (multiplied by 10) in 2017 (Saint Étienne du Valdonnez 48).

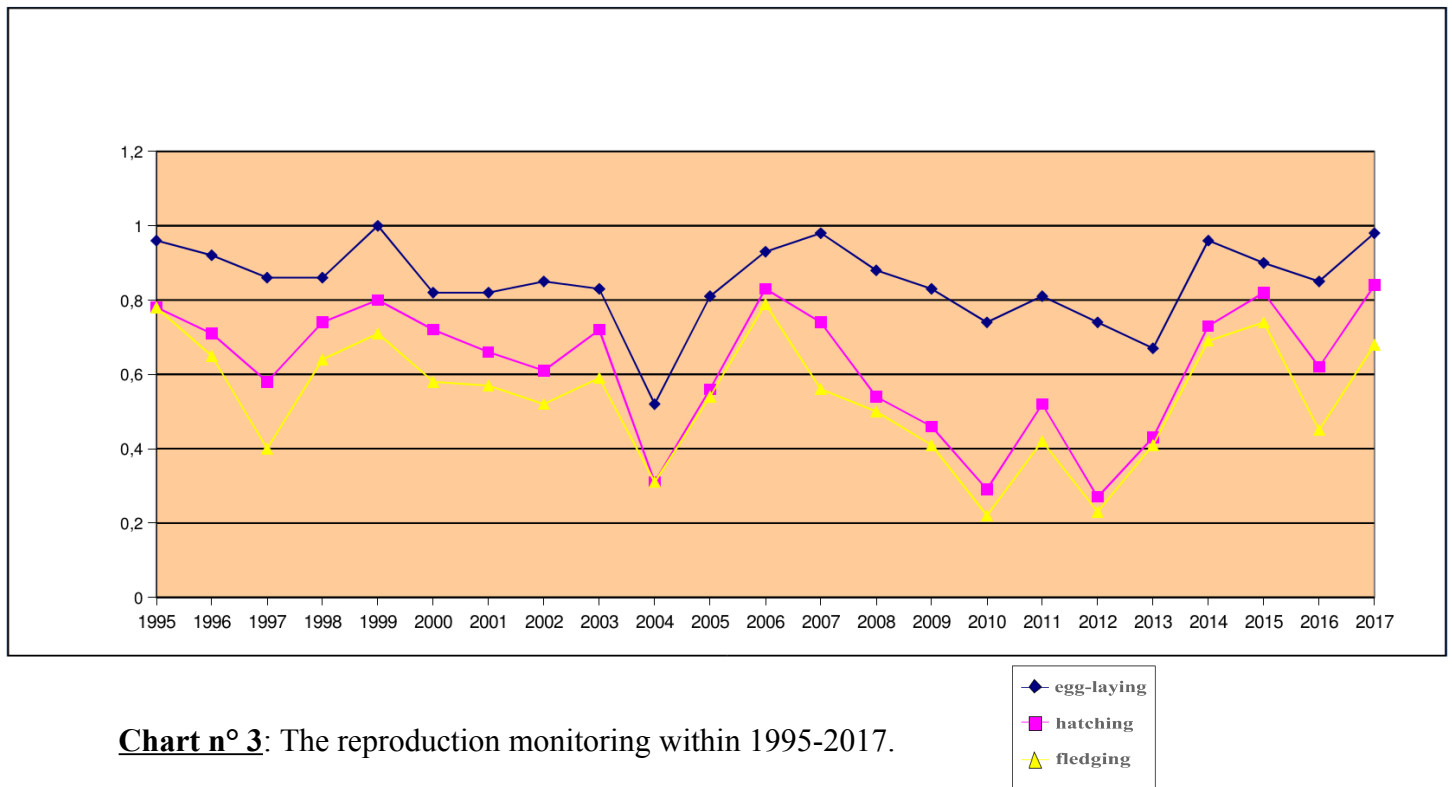
Egg-laying usually takes place in April, somewhere between 2 and 29. In 2017, we recorded one late egg-laying attempt on May 10, however, none in late March.

This late breeding failed eventually, the chick did not fledge, most likely was killed by a predator. This particular pair consisted of two males and a female (two males displayed to a single female in the beginning of the breeding season) which may lead to the late egg-laying. At another site we also observed a trio of two males and a female and where the

outcome was similar. In two cases we recorded predation, by Goshawk in one case and either Golden Eagle or Eagle Owl in another case. In this latter, we believe that the chick was close to fledging being about eight weeks old judged by the feathers found nearby, however, it had no chance against the attacker.

14 pairs were unsuccessful laying-eggs in 2017. Five cases were unidentified while the reasons in the other nine cases were as follows:

- Not breeding : 1
- Pair related : 1
- Nest desertion : 1
- Disturbance : 1
- Predation : 4
- Infertility : 1



**Variation of the annual reproduction rate of STE in Cévennes
(N=1156 attempts)**

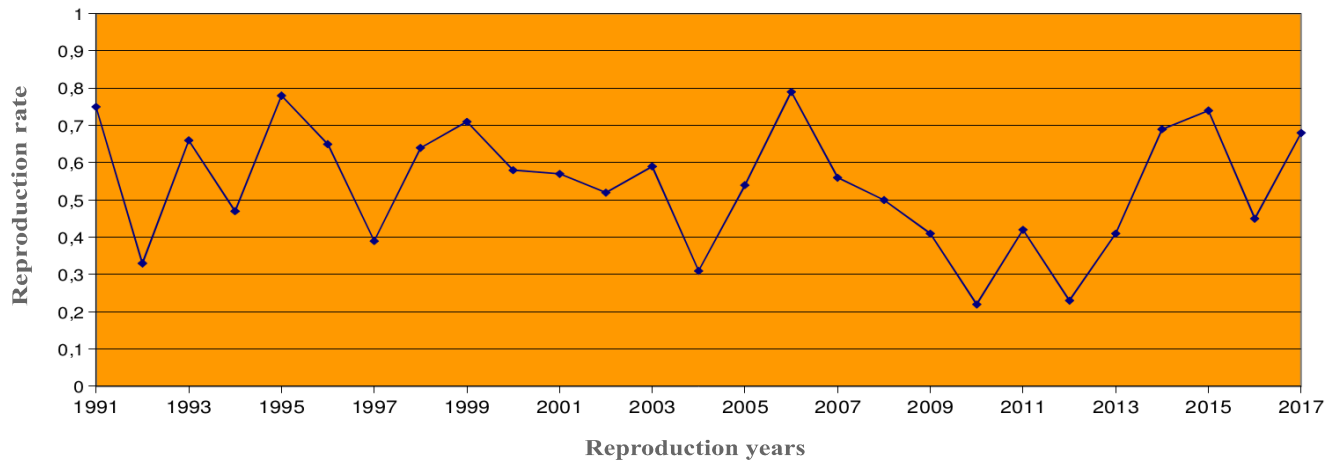


Chart n° 4: Variation of the annual reproduction rate of STEs in Cévennes within 1991-2017.

III) – Diet of juveniles in the area:

This year, we found remains of only a few prey animals and we did not set up hides for making such observations. Only six additional prey items could be added to the list we published last year.

Colubridae	276	
Aesculapian Snake	53	
Green Whip Snake	85	(3)
Grass Snake	16	(1)
Montpellier Snake	36	(1)
Vperine Snake	3	
Southern Smooth Snake	1	
Smooth Snake	3	
Snake. (spp)	79	
Aspic Viper	36	
Ophidia (sp)	18	(1)
European Green Lizard	21	
Slow Worm	21	
Hedgehog	7	
European Mole	1	
Vole (spp)	5	
European Water Vole?	3	
European Hare (young)	1	
European Rabbit (young)	1	
Rodentia (spp)	13	
European fire-bellied toad	3	
Toad	4	
Aves	7	
Total	417	(6)

Table n° 4: Food remains within 1991-2017 (N=417). Prey remains found in 2017 are in parentheses.

IV) Monitoring of ringed birds:

Since our ringing scheme has ended, no chicks were ringed this year.

Observation of ringed birds in 2017

This year, we observed seven ringed individuals in our study area. We could identify six of them and we could age the remaining one. Four birds were observed already at least once but the other three were new ones that have never been observed according to our database.

- Live identified birds which were observed already in the past:

-The well-known 21 years old male (22cy) that has been followed since 2006 was observed again near its nest site at dusk on May 19. His breeding was successful this year.

-The other well-known ringed male is 18 years old (19cy). Jean-Michel TISNE found his nest at the end of the year in the steep canon of Tarn not too far from the place where we saw the bird in 2006 and we suspected him to nest nearby. His nest is 5.5 kilometres from his birthplace. Unfortunately, his chick was predated by either a Golden Eagle or an Eagle Owl.

-Our third male is 17 years old (18cy) and probably nests in Vallée Borgne. Michel REYNE took an amazing picture of him while hunting. He lost his colour ring, however, we could identify him by plumage marks. His nest could not be found (see the photo below).

-The fourth male was left unidentified, but at least we know his age: seven years old (8cy). We took picture of him during hunt at the same place we did in 2015, and we believe that he nests somewhere close.



Photo n° 1: 17 years old male.

- Live birds, which has never been observed before:

-The first one, a three years old (4cy) female, was seen in Haut-Loire near Les Estables. Christophe CHAIZE obtained some shots of her in June 2017, Haut-Loire, Les Estables-ban. Photographed by Christophe CHAIZE in June 2017, she was born 97 kilometres SW in the Causse Méjean. Moulting pattern can be seen well on this bird (see photo 2). A

ringed third year old male we observed, fledged in the Southeastern part of the Méjean Plateau near Fraissinet de Forques. Renaud NADAL photographed him in Gard County near Revels about 25 kilometres from his natal ground.

-The third newly recorded bird was a seven year old (8cy) female. Serge COLIN took pictures of her near Roucabies, and she most likely nests somewhere close (see photos 3-4). It is to confirm in 2018 at a site not far from a known pair.



Photo n° 2: Three years old female (Michel CHAIZE).



Photo n° 3: Seven years old female (Serge COLIN).



Photo n° 4: Seven years old female (Serge COLIN).

V) – Behaviour and stories:

Falling out of the nest over and over. The saga of the pair near Chausserans continued. It seems they should take a course how to build a sturdy nest. We reported in 2014 that the chick had to be saved after falling out of the nest (see the summary of 2014). They did not build a nest in 2015. In 2016, they chose another tree but the nest was too weak and fell off the tree with the egg in it. This year, they found a new place and started to build a new home as well. It seemed that finally everything would be just fine.

Or maybe not! Upon our visit to there on June 24, we could not find the nest despite thorough search, but the female flew over us with a snake in her beak. We made another try on June 27, and we found the nest on the ground, as „usual” we might say. The chick, aged about four weeks old, was below the tree and apparently in good shape. The parents not only fed it well but also brought green leaves (pine, oak, maple) around the chick as well. The forest here was quite dense, the parents could have a hard time flying in but they kept on visiting their offspring.

As in 2014, we decided to build a nest. Since we could not place it as high as the eagles’ nest was, we put it up 1.5 metres high as we did in 2014.

We visited the place a month later to see if the chick survived or not, and we heard its voice 10-20 metres from the nest signalling the parents arrival with food. We froze and could detect that everything is fine. The parent leaves just a mere few metres from us manoeuvring through the dense foliage. It did not notice us! We went closer and found the chick in the gift nest. We found two large snakes next to it, one is a 116 cm and 170 gram Green Whip Snake while the other is a 92 cm long and 195 grams heavy Grass Snake proving that the chick was fed well. Another Green Whip Snake was found on the ground rotten. We picked it up so that ground predators do not find it. We also weighed the chick, it was 1600 grams and fixed the nest just to be sure everything will be fine afterwards. This particular chick fledged but we hope no such assistance will be necessary next year.

Short-toed Eagles are very much attached to their offspring and do not leave them if they fall off the nest. In our area, which is quite windy and the trees are usually short and flexible, we encountered this behaviour a few times already. The parents tried their best in every occasion, however, sometimes the chick dies due to the fall or predators find it.



Photo n° 5: The chick was found on the ground with fresh green leaves around it.



Photo n° 6: The makeshift nest with Thérèse and Florestan.



Photo n° 7: Eight week old chick with a snake.

Farewell, Christian:

December 2017 brought us great sadness, our beloved friend Christian Aussaguel left us. The nature lovers' society lost an avid guardian of the case of nature conservation and an exceptional photographer. We have been honoured to use his film negatives and were speechless seeing his marvellous pictures.

During our short visits, he always had a good word to the other and a smile with a twinkle in his eyes when discussing Short-toed Eagles. And finally, he always smuggled some of his famous „aussaguel” pâté which we tasted at home and joyfully revived our encounter till we met again.

He leaves great emptiness in our hearts, however, not in our mind since he will always be there when nature conservation is being discussed...

I would like to dedicate this poem to him illustrated with his pictures. We think a lot of his family and friends.



blanc et brun
un léger hochement
de la tête
Jean le blanc
es - tu resté
des heures
dans la fumée
et la couronne
de plumes
où se fixe
doré
un regard
parallèle et glacé
déshabillant l'adret
où se joue
le mystère
du reflet
d'un serpent !?

Jean Bonnet





The monitoring in 2017 was carried out with the collaboration of:

- for Causse : L. **CAUSSADE**, B. **LAMARCHE**, E. **MARTIN**, H. **PIC**, J.M. **TISNE**.
- for Aigoual : N. **BRUCE**, G. **COSTES**, B. **DESCAVES**, G. **KARCZEWSKI**, J.L. **PINNA**,
B. **RICAU**.
- for Cévennes : J. **BOYER**, R. **BARRAUD**, I. **HENRY**, E. **HERAULT**, T. **NORE**, V. **QUILLARD**.
- for Mont Lozère : A. **AVESQUE**, B. **DEFRESNES**, D. **HENNEBAUT**.

Tel: 04-66-48-05-47

Mail: malafossejeanpierre@orange.fr

Jean-Pierre & Isabelle MALAFOSSE

Route de Bassy

48 000 St Etienne du Valdonnez