



Parc national  
de la Vanoise

Asters  
Conservatoire  
d'espaces naturels  
Haute-Savoie

# The Bearded Vulture



*Wildlife and connected habitats  
Admont, Austria, 11-12 december 2014*

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# The Bearded vulture : a sensitive species

- **Reproductive strategy**

- > Adult survival
- > K selection : late reproduction
- > philopatry

- **Top of the food chain =**

- \* **Sensitive to lead and intoxication**

- \* **Sensitive to changes and impact of the environment**



# The Bearded vulture : a sensitive species

- Feeding habits  
« Bone breaker »



# Extinction in the Alps & reintroduction programme

Last observation in the Alps (1913)

## REINTRODUCTION

### 1. Choice of reintroduction sites

(Hirzel et al. - 2004 - Ecological requirements of reintroduced species an)



**Preferential habitats** (depending on the age of the birds )

- **for immature birds** : most important variable explaining bearded vulture distribution was ibex biomass.
- **for maturing subadults and adults** : correlated essentially with limestone substrates, while food abundance becomes secondary.

### 2. Reintroduction sites

since **1986** : Rauris, Hohe Tauern (A)

**1987** : Barges, Haute Savoie (F)

**1991** : PN Suisse, Engadine (CH)

**1993** : PNM (F)/PN Alpi Marittime (I)

*As reintroduced bearded vultures tend to be philopatric.*

# Conservation - Connectivity at the alpine scale

- > European Endangered Species Programme : EEP (35 zoos et 5 breeding centers)
- > 198 released (1986 – 2014)
- > 127 wildborn (1997 – 2014)
- => Modelled population estimation currently reaches 197 individuals

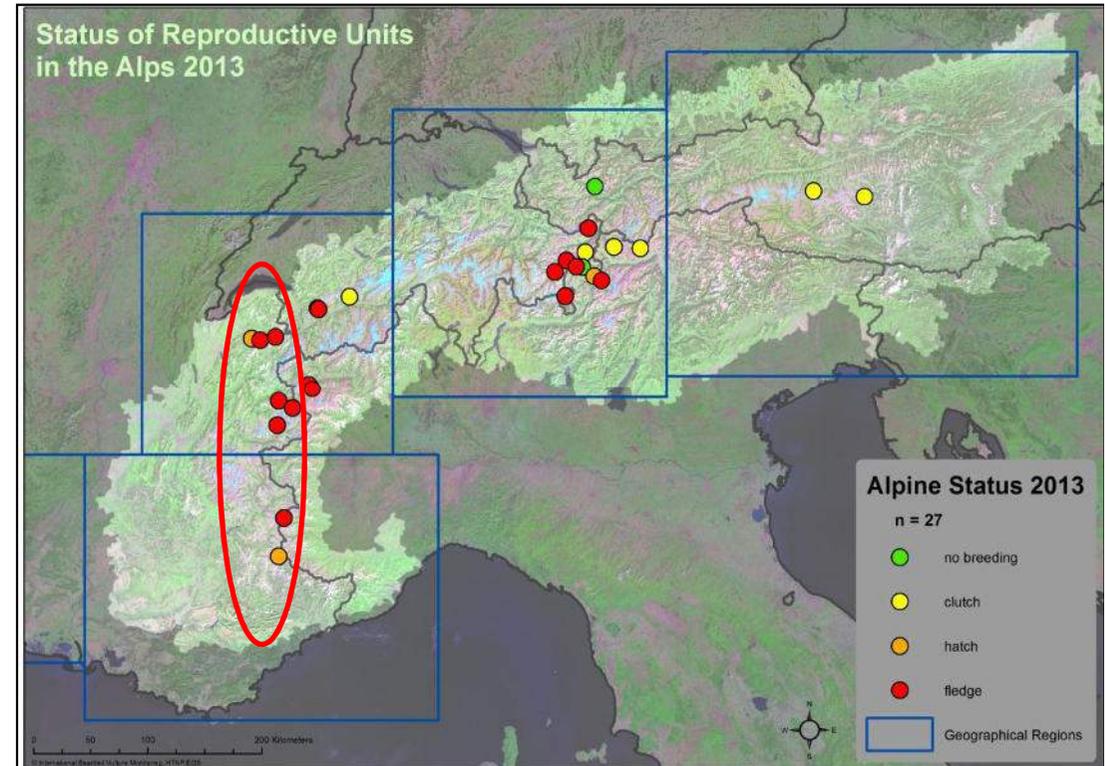


2013 : 27 mature pairs

(9 breeding pairs  
in the French Alps)

Productivity 1997-2013 : 0,502

		Productivity				
		S-Western	N-Western	Center	Eastern	Alps
C2	Reproductive units	17	104	78	18	217
D	Clutch	7	87	67	16	177
E	Hatching	6	66	58	7	137
F	Fledglings	4	53	49	3	109
F/C2	Productivity	0,235	0,510	0,653	0,167	0,502
D/C2	% breeding	0,412	0,837	0,867	0,889	0,816
F/D	% success	0,571	0,609	0,754	0,188	0,616



(Schwarzenberger and Zink, 2013)

# Significance of Genetic mixing

**Corridors = Provide genetic flow and diversity to the Alpine population**

The current population was founded by 37 individuals

The three most successful founders contributed 18.3% to the captive birds and 29.4% to the wild individuals

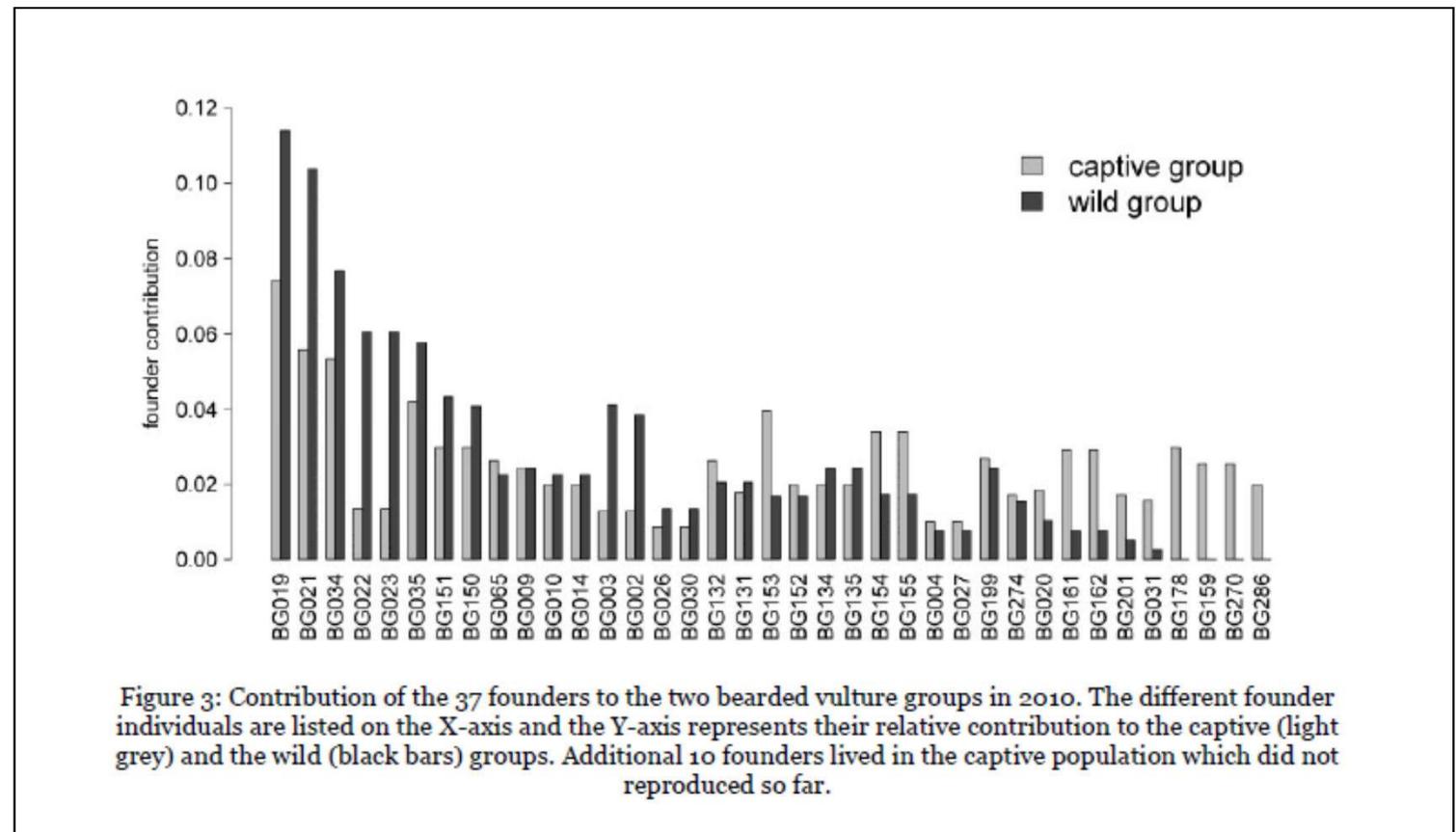


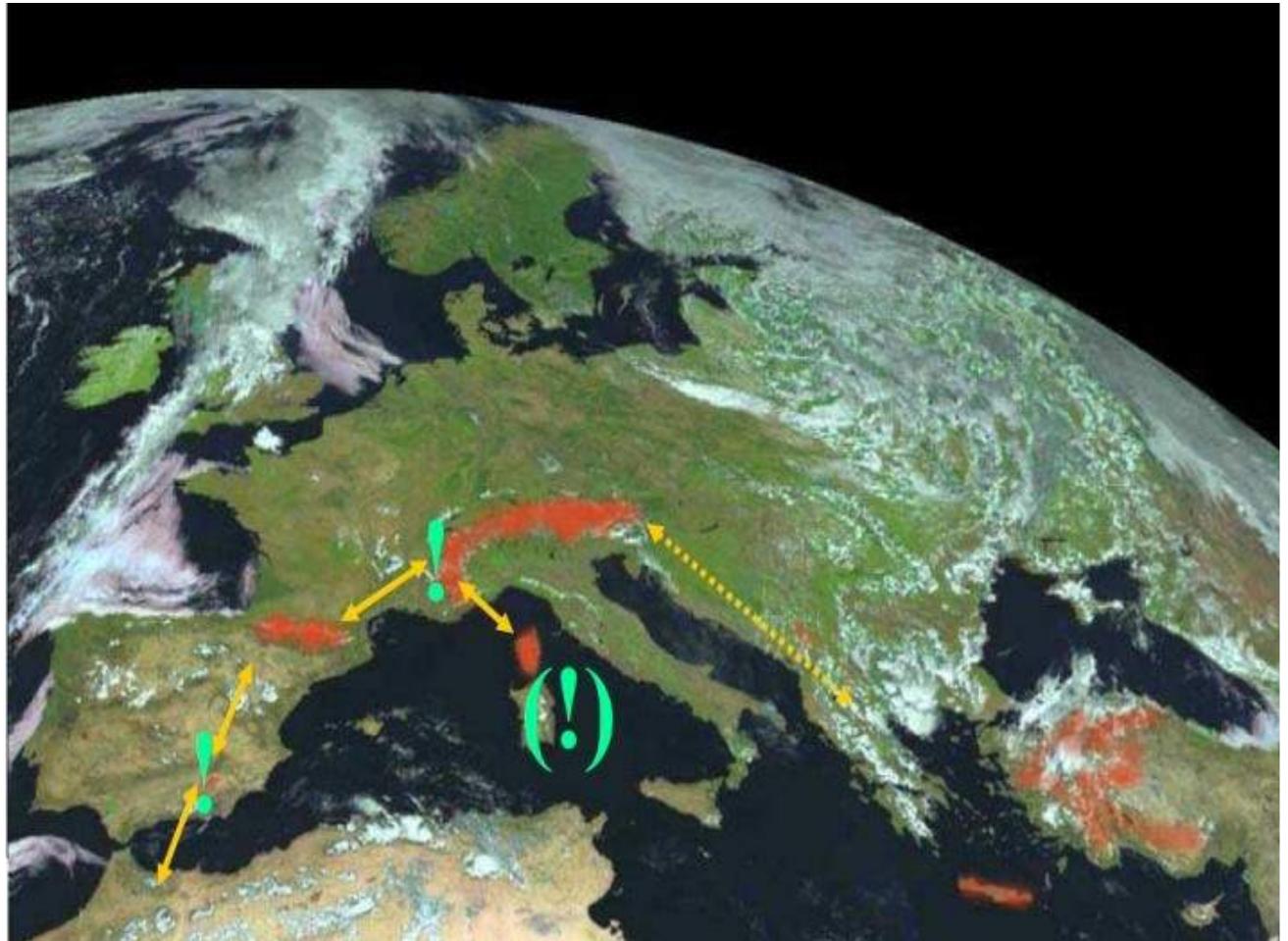
Figure 3: Contribution of the 37 founders to the two bearded vulture groups in 2010. The different founder individuals are listed on the X-axis and the Y-axis represents their relative contribution to the captive (light grey) and the wild (black bars) groups. Additional 10 founders lived in the captive population which did not reproduced so far.

# European strategy of the Vulture Conservation Foundation

« Managers and ecologists face common “metapopulation” scenarios in which it is necessary to counteract the detrimental effects of genetic, demography and environment. »



**=> Aim: to have an autonomous and genetically functional population from North africa, Turkey, mediterranean basin until the Alps.**



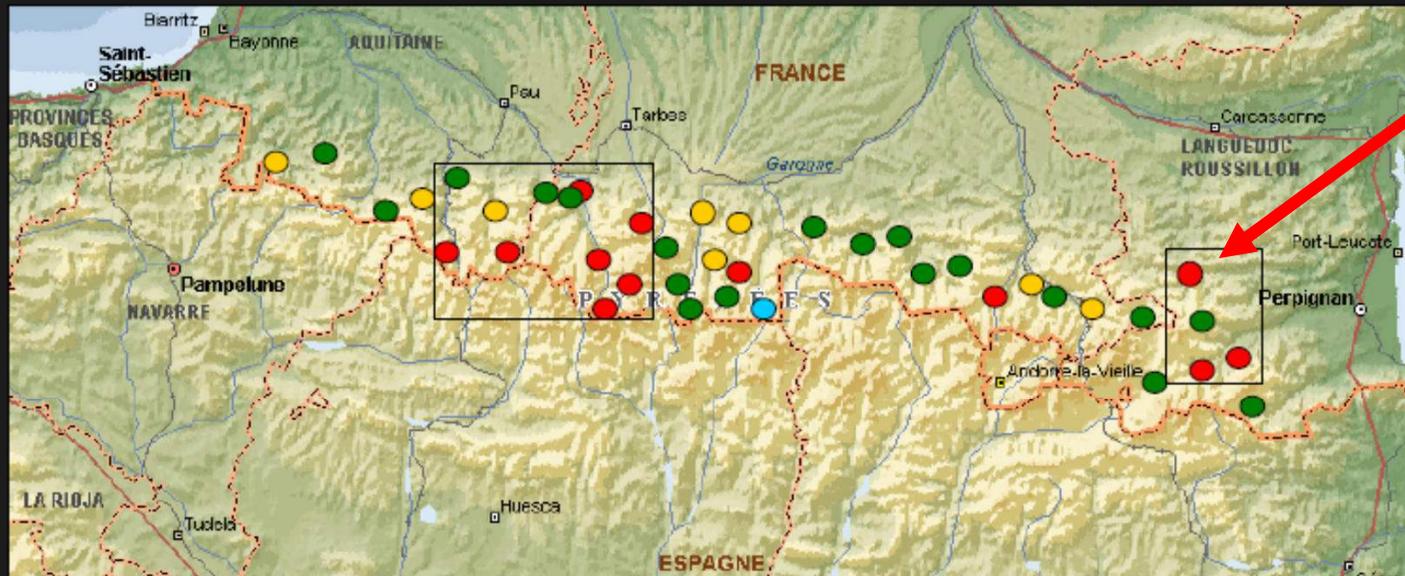
# Connection : Alps/Pyrenees

Pyrenees situation : ~ 100 pairs

## BREEDING RESULTS 2014



39 pairs (36 + 3 trios), 3 news – 30 clutches – 18 successfull eclosions – 12 youngs  
Productivity : 0,31 – Breeding success : 0,40 – Clutch rate : 77%



● No breeding pair (9)  
● « Pair » in formation (1)

● Breeding failure (18)

● Young (12)



Situation in Aude

Presence since 2000

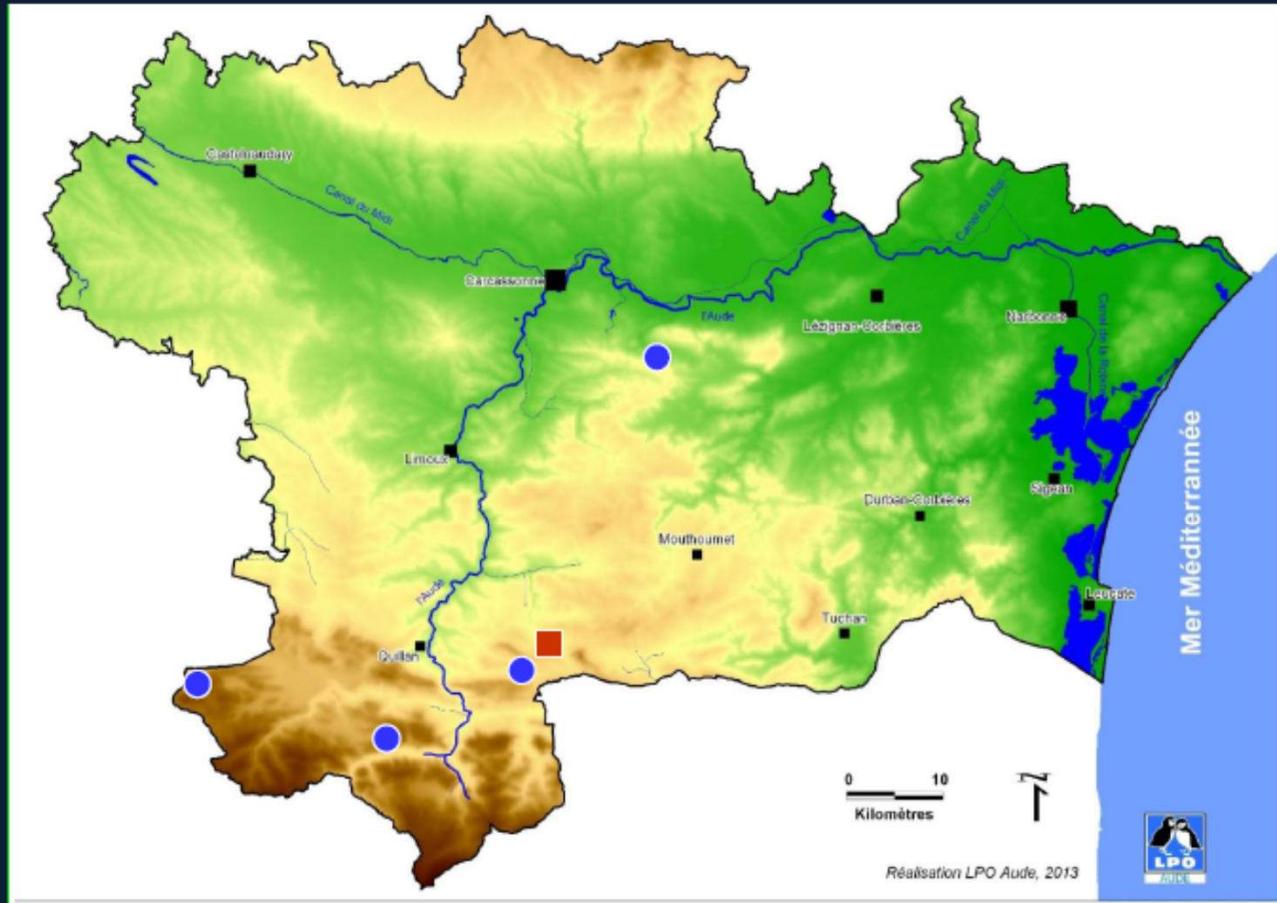
1st reproduction in 2012

# CONNECTIVITY : Alps/Pyrenees *(and Spain)*

In Aude, feeding plots are used to facilitate the dispersion

## Network of feeding sites in Aude

- Specific BV feeding sites
- Farmer's « Placette » (individual feeding device)



Source : R. NEOUZE (LPO Grandes Causses)

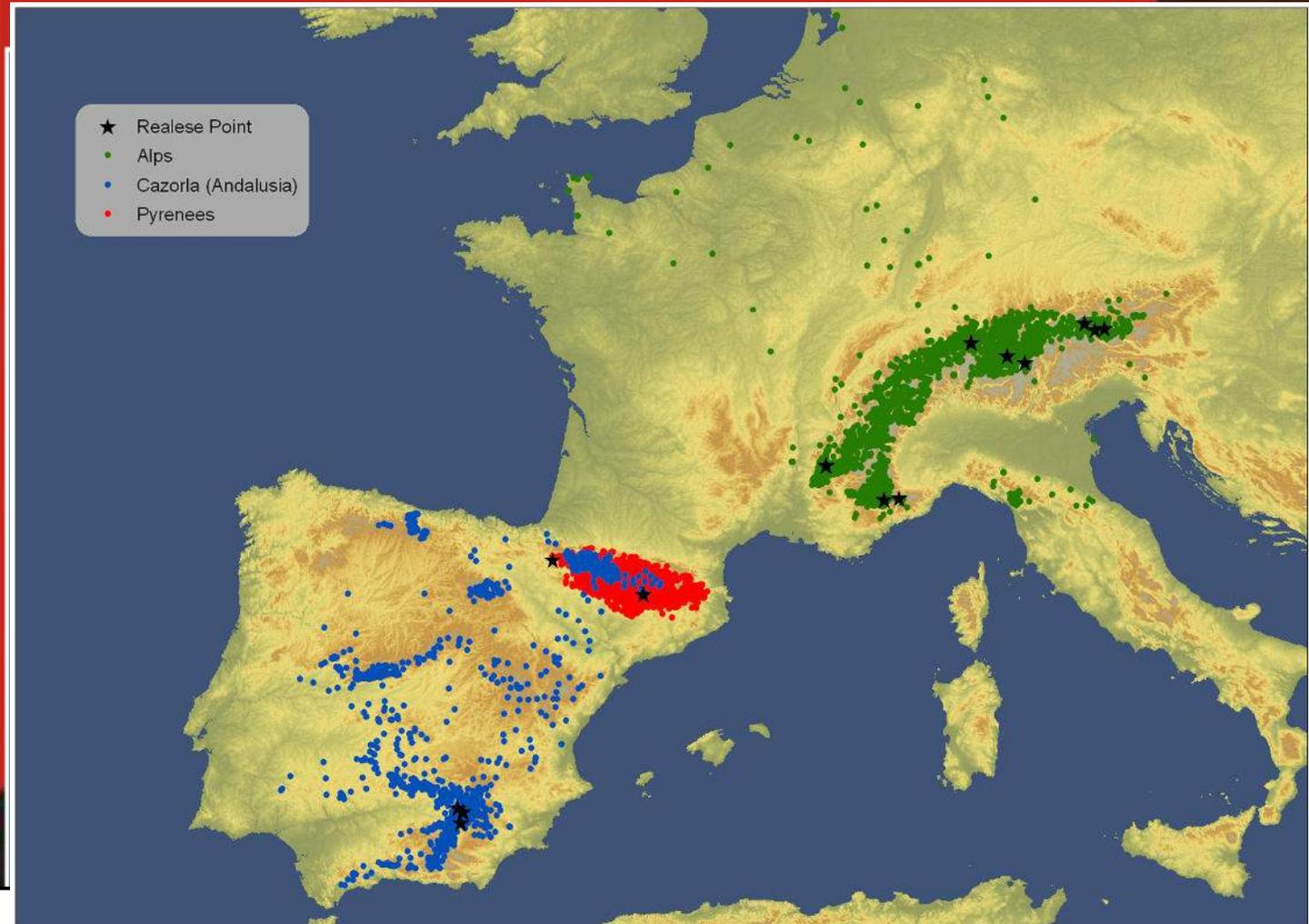
# CONNECTIVITY : Alps/Pyrenees *(and Spain)*

Releases of Bearded vultures in Grands Causses and Vercors

The « corridor » programme



## Locations of Bearded Vultures released in Andalusia since 2006 (in blue)



Breeding center  
of Guadalentin

31 birds released  
(2006-2014)

Main threat : poison

Distribution of mean-day locations of individual satellite-tracked pre-adult bearded vultures of the wild Pyrenean population (n = 9), and the reintroduced populations of Andalusia (n = 13) and the Alps (n = 24). Stars show release points.

MARGALIDA A., CARRETE M., HEGGLIN D., SERRANO D., ARENAS R., DONÁZAR J. A. « Uneven large-scale movement patterns in wild and reintroduced pre-adult bearded vultures: conservation implications » - 11 juin 2013

# CONNECTIVITY



## > Situation in CORSICA

High decline of the population : 5 pairs less since 2009  
(5 pairs in 2014: only 1 fledgling )

Unconfirmed hypothesis: Birds fly over to the continent

## > Situation in BALKANS

### **Balkan Vulture Action Plan (2002)**

**Countries:** Bulgaria, Macedonia, Albania, Greece, Serbia, Bosnia & Herzegovina, Serbia, Croatia, Greece, Ukraine (Crimea), Romania and Turkey

**Serious threats** : Illegal use of poison in the nature, Shooting, Disturbance, Electrocution, Collision...

# A network of partners

- **International Bearded vulture Monitoring (IBM)**

- > 15 stakeholders involved



- **French species actions plan (PNA 2010-2020)**

- **French LIFE programs**

- > Past : 1998- 2002 (reintroduction) and 2003-2007 (reintroduction, limit threats)

- > LIFE GypHelp (2014-2018) : limit human threats with bearded vulture as an umbrella species



- > LIFE GypConnect (2015 ?) : facilitate a corridor between Pyrenees and Alps

# International Observation Day

- Annually in October
- Counting over the whole Alps
- Participation of Professionals and Volunteers (over 400 people)

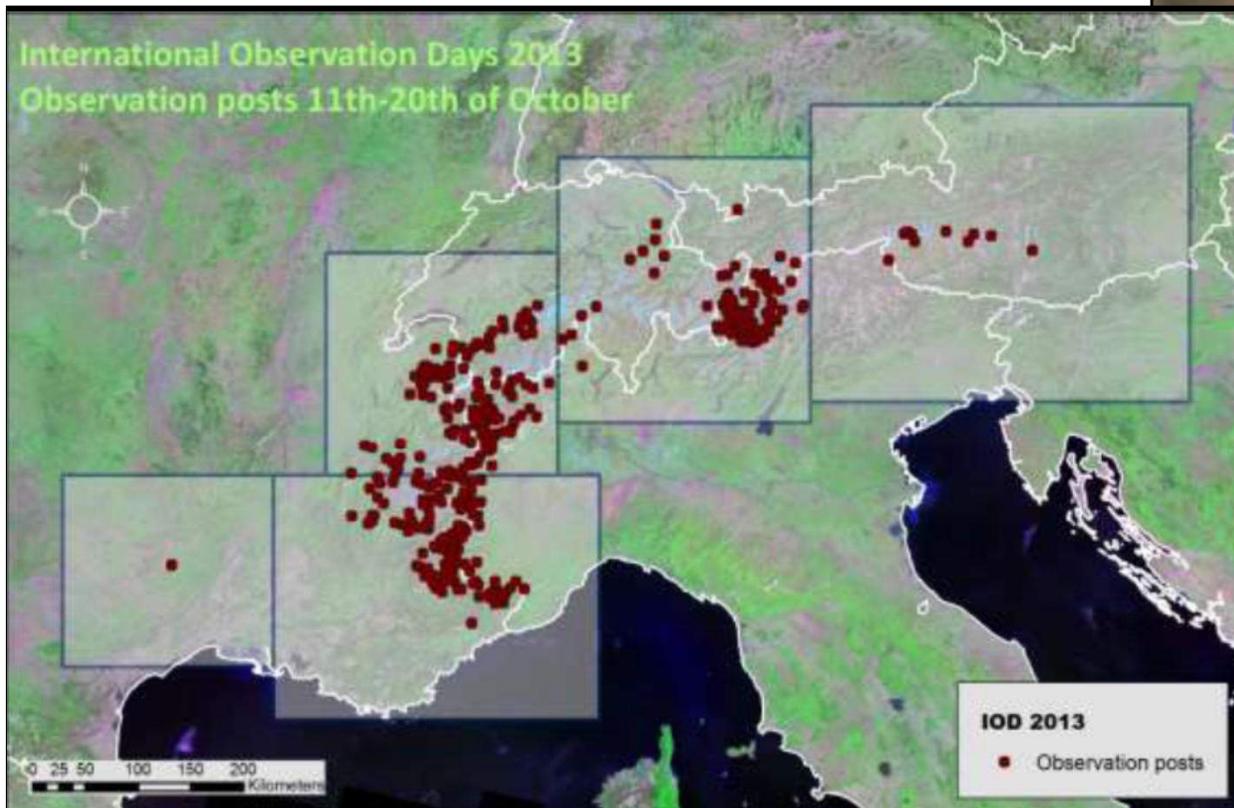


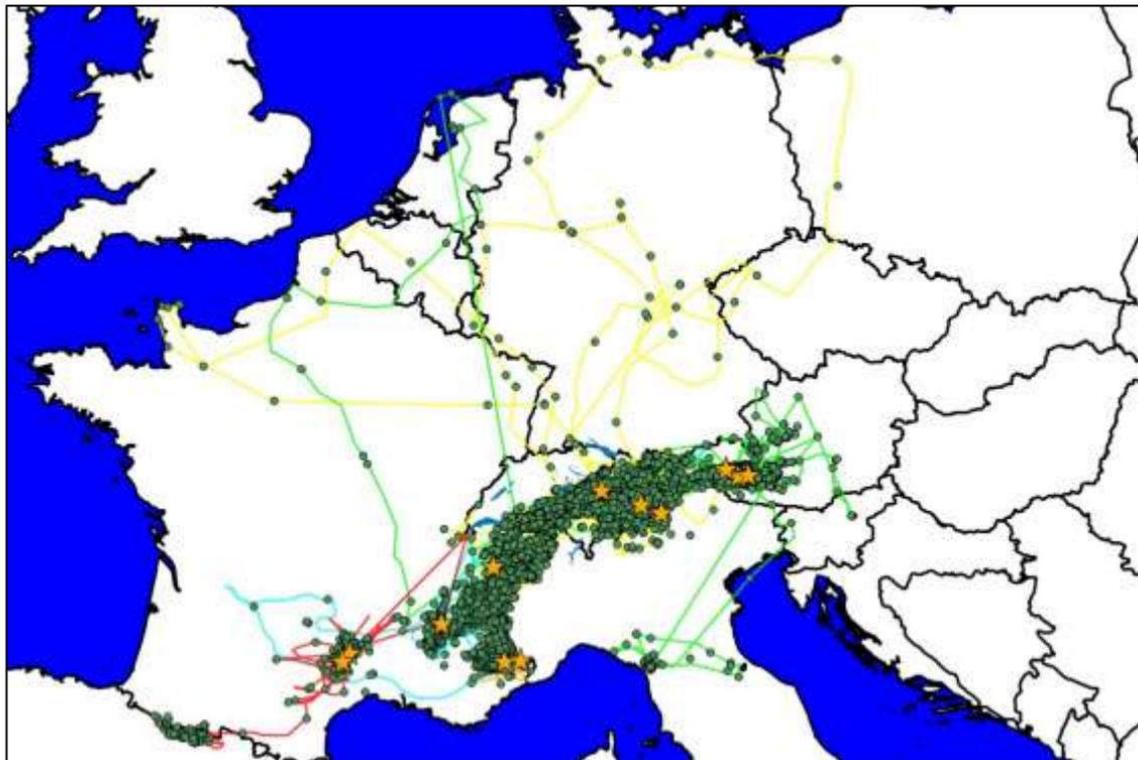
Figure 1: Observation points for the International Observation Day at the Alps. (R. Zink, 2013)

# A large scale species

- Erratic youngs

→ Needs a transnational collaborative work

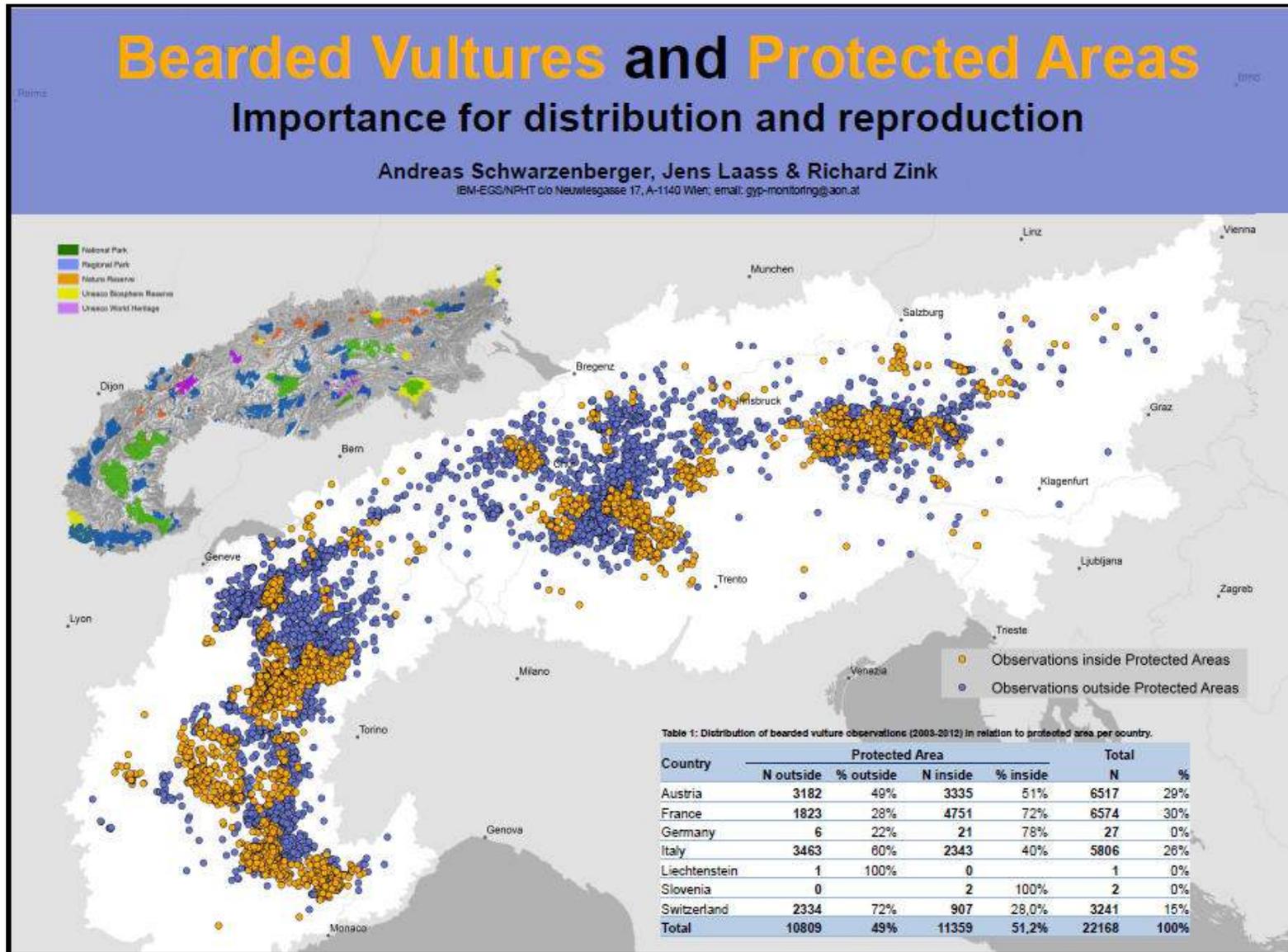
Layrou : bird release  
in Grands Causses in 2013



(Zink and Izquierdo, 2014)



# Significance of Protected Areas



# THREATS

The Alpine Population is continuously growing, of course it remains vulnerable.

2-3 more mortality cases / year would turn positive trend into negative.



- **Saturnism** : 6 bearded vultures intoxicated with lead in the wild



- **Poison** : anti-inflammatory drugs for cattle

- **Shooting**

- **Disturbance of nests by human activities**

- > Flights (paragliding, helicopters,...)
- > Climbing
- > ...

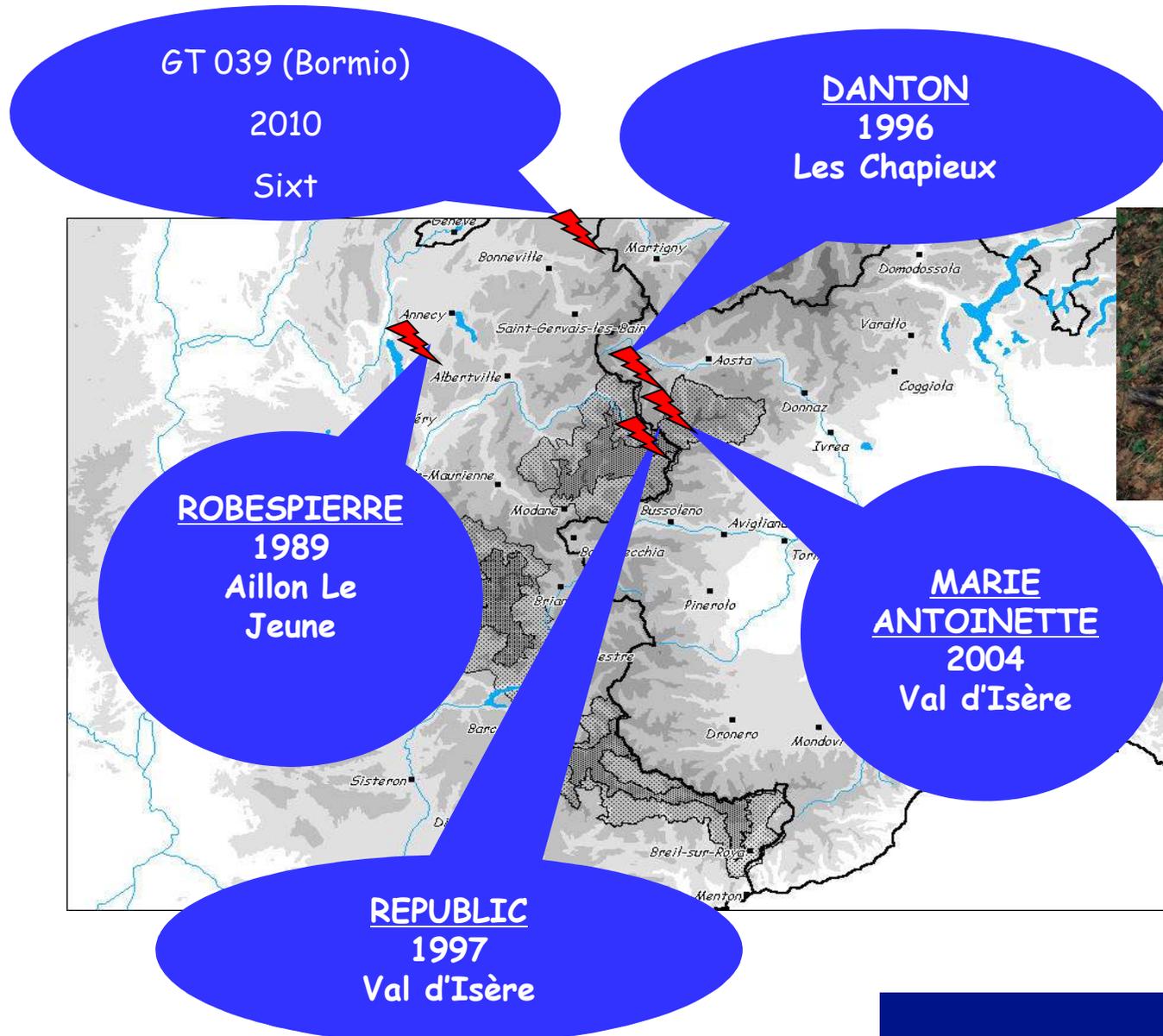
- **Aerial obstacles**

- > Power lines
- > Ski lifts
- > Wind farms



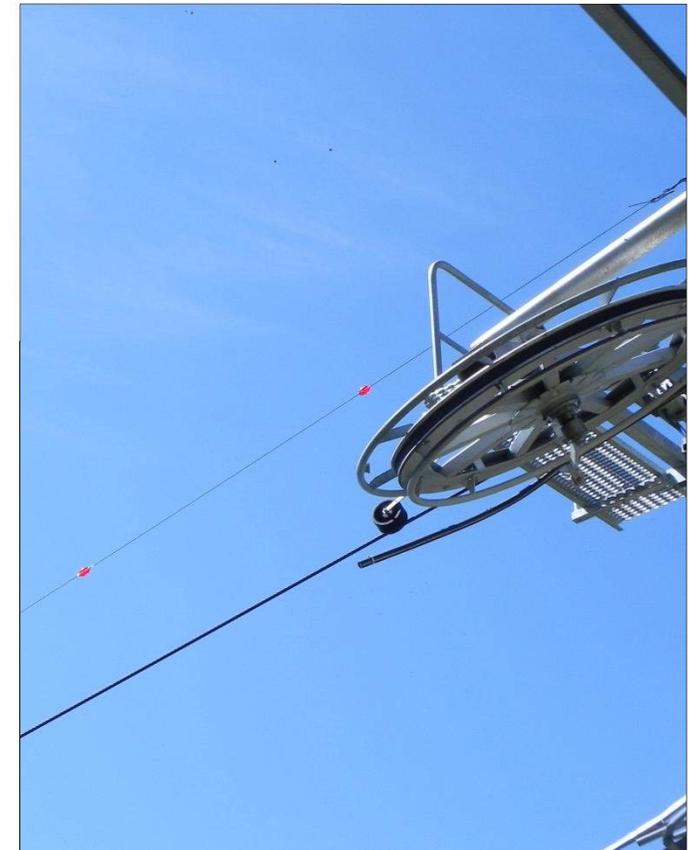
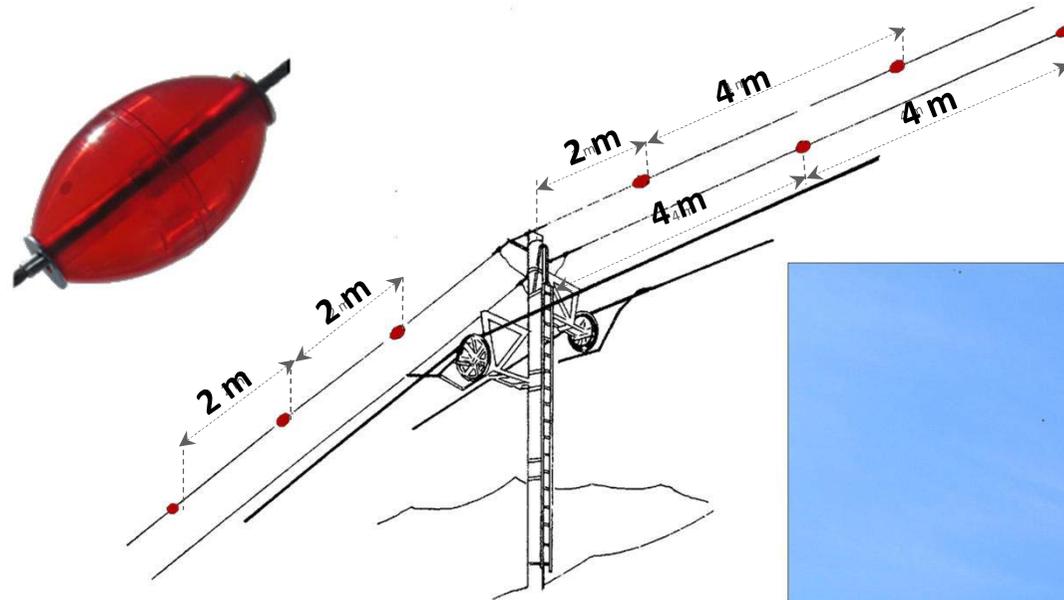
# AERIAL CABLES

## Collision and electrocution risks : powerlines and skilifts



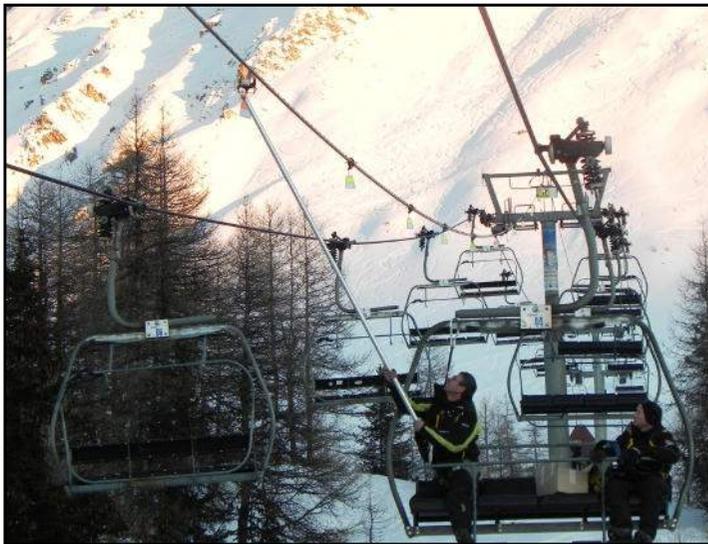
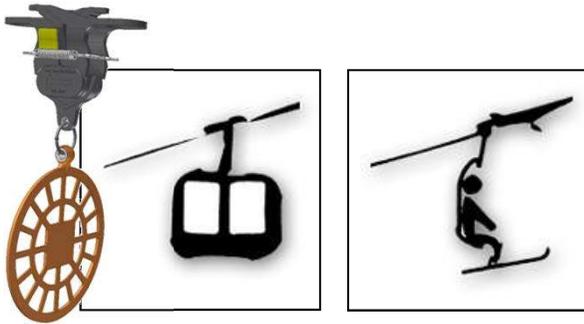
# AERIAL CABLES : equipment of skilifts

## ✓ Bottomlift



# AERIAL CABLES : equipment of skilifts

✓ Chairlift, gondola....

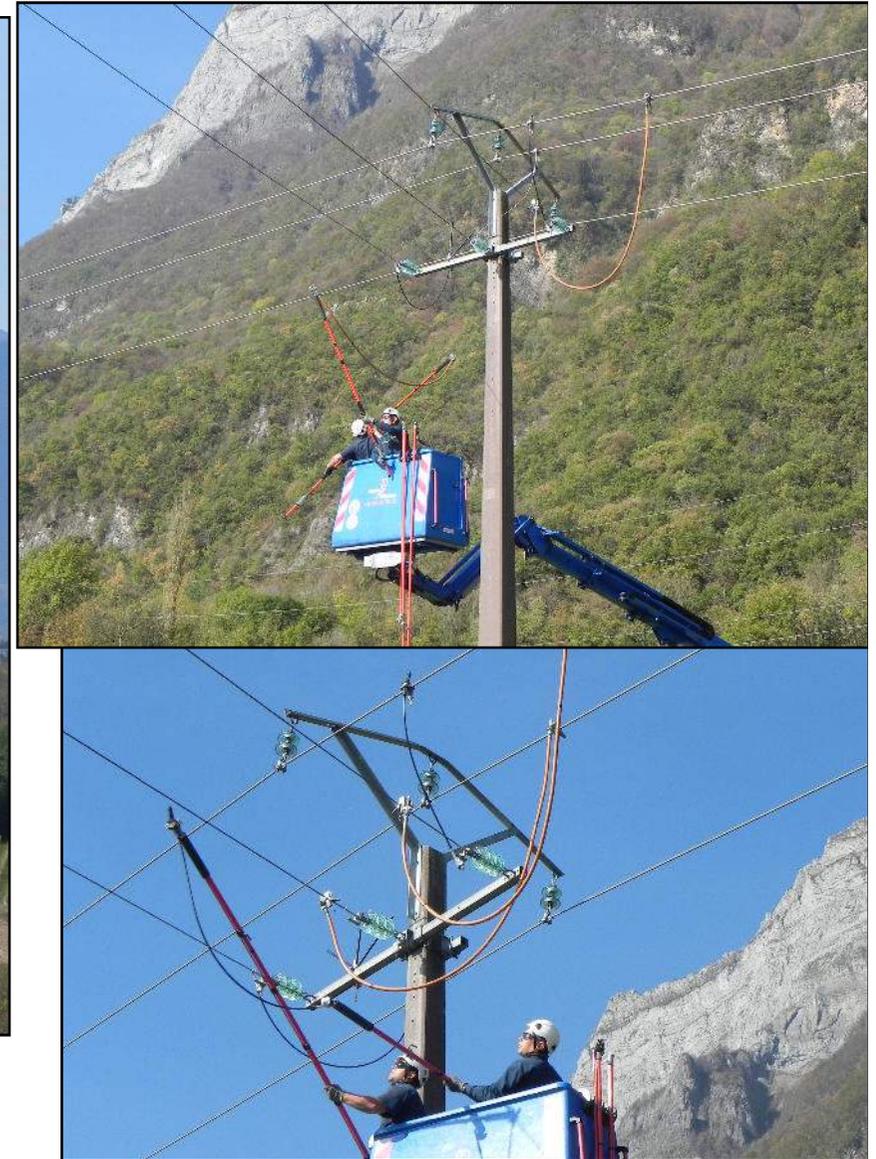


# AERIAL CABLES : equipment of powerlines

**RISK of PERCUSSION**  
**Firefly Alpine**



**RISK of ELECTROCUTION**  
**Dissuasive bars**



# AERIAL CABLES : equipment of powerlines



# AERIAL CABLES : equipment of powerlines



**Thanks a lot for your attention !  
Presentation in collaboration with ASTERS (F)**



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