gypaète barbu

Life GypHelp

Evaluation report on the illegal use of poison in nature and anti-poison activities within the project area

(final draft)

Action n°A4

Project n°LIFE13 NAT/FR/000093

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Abbreviations used

VCF	- Vulture Conservation Foundation
LPO	- League for the Protection of Birds
ONCFS	- National Office for Hunting and Wildlife
SAGIR	- Epidemiological Surveillance Network for Wildlife – ONCFS department
SAP	- Species Action Plan
LVD	- Departmental Veterinary Laboratory
MEDDE	- The French Ministry of Ecology, Sustainable Development and Energy
NP	- National Park
MAAF	- The French Ministry of Agriculture
NGO	- No Governmental Organization
EU	- European Union
CMR	- capture-mark-recapture

Introduction

The use of poison is considered to be the most important threat to vultures worldwide, and is also the main reason for their extinction, or it is a limiting factor for their recovery in Europe. This threat is closely related to farming and hunting traditions; therefore the fight against poison should be specific for each country or region.

In general, poison is never used to kill vultures; they are normally secondary or tertiary victims of poison used against wild predators impacting on human activities such as agriculture and hunting.

Poisoning of wildlife in Europe reached its peak in the 1940s and the 1950s, when it was legally used as a tool to reduce the population of “vermin” predators. In this period many vulture populations vanished from their original distribution range in Europe, including France. Due to the poisoning but also because of the decline or changes in the traditional farming practices, most of the vulture species were extinct in France by the end of the 1940s. Now, after a lot of effort and more than 30 years of conservation work (reintroduction projects, public awareness, etc.) all four species: Bearded Vulture (*Gypaetus barbatus*), Black Vulture (*Aegypius monachus*), Griffon Vulture (*Gyps fulvus*) and Egyptian Vulture (*Neophron percnopterus*) are again present in France.

Spain is the European country with the biggest experience in the fight against poison (more than 20 years of hard work in this field). During the last two decades of anti-poisoning work in Spain, a lot of achievements were met, but it was also concluded that the use of poison can only be reduced and controlled up to a certain level, but will probably never disappear. It is therefore important to continue the efforts to fight against poison on different levels.

The LIFE project GypHelp (Reduce Anthropogenic Threats to the Bearded Vulture) deals with conservation action particularly for the Bearded Vulture in the French Alpine region, that hosts 10 Bearded Vulture breeding pairs in 2014, representing 16% of the French population (including the Pyrenean population), or 38% of the Alpine population.

Although poisoning incidents are not common in the project area, the occasional cases of poisoned wildlife indicate that the problem may return, particularly related to the comeback of large predators in the area (e.g. wolf) that might be considered "harmful" species by local stakeholders (livestock breeders, hunters, etc.).

The project includes an action (A4) designed to evaluate the different legal and operational practices in the project area regarding the poison, so as to define and propose future actions that can be developed. This evaluation will be done through analysis of all relevant existent documents, mentioned in the project proposal:

- National legislation, its application and capacities in the fight against the poison
- Official documents for the species of interest (Bearded Vulture)
- Documents related to the anti-poison operations of the two National Parks (Mercantour and Vanoise)
- Records of poisoning cases collected from the project area in the last years.

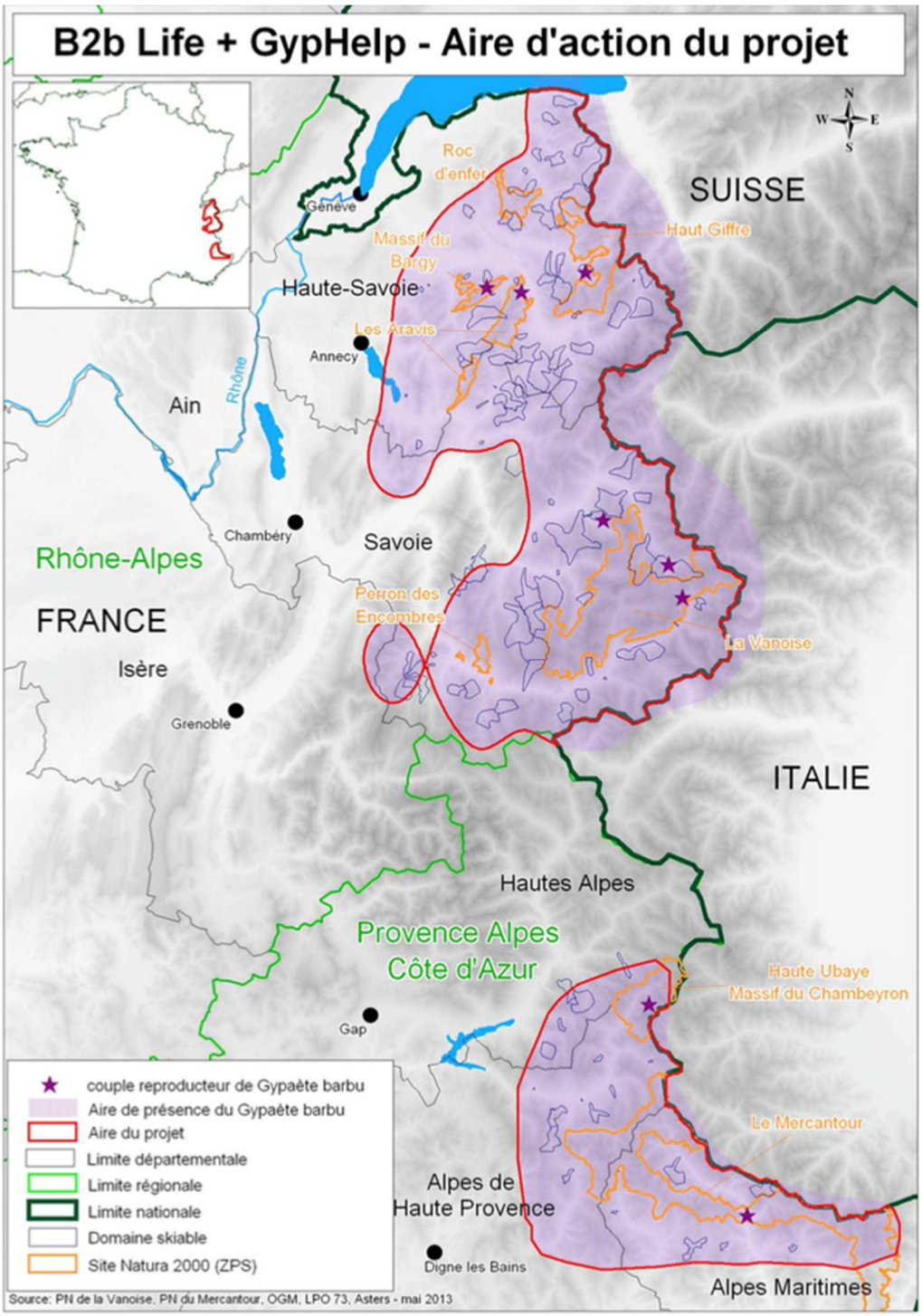
This evaluation report includes analysis of the following documents:

- National action plan for surveillance of epidemiological disease in birds (Protocol for collecting samples and analyses)

- National Species Action Plan for the Bearded Vulture in France
- Management plans of the National Parks of Vanoise and Mercantour
- Analysis of the Problem "large predators" in the project area and the potential impact on the future (wolf action plan)
- Analysis of confirmed poisoning cases in the past in the project area

The project aims to evaluate the relevance and potential impact of the poison issue in the project area. VCF is responsible for this action in collaboration with ASTERS (the project leader) and the two national parks (Parc National du Mercantour and Parc National de la Vanoise) This report evaluates the strengths and weaknesses of current methods and practices, and provides recommendations for the future.

Map of the project area GypHelp



National action plan for surveillance of epidemiological disease in birds (collaboration agreement for collecting samples and analyses)

Surveillance épidémiologique des maladies des oiseaux soumis à un Plan national d'actions

This document is an agreement signed between the LPO (League for the Protection of Birds) and ONCFS (National Office Hunting and Wildlife) to establish a protocol and plan for dealing with the death of wild birds found in the field. It also clearly shows the responsible entities for each step during the process after the discovery of a carcass in the field.

The agreement involves actions for seven bird species: Red Kite (*Milvus milvus*), Griffon Vulture (*Gyps fulvus*), Black Vulture (*Aegypius monachus*), Bearded Vulture (*Gypaetus barbatus*), Osprey (*Pandion haliaetus*), Lesser Kestrel (*Falco naumanni*), and Bonelli's Eagle (*Aquila fasciata*). This agreement also provides protection for species that have no National Action Plans such as the: Golden Eagle (*Aquila Chrysaetos*) or the different species of harriers.

This agreement establishes a working network between the LPO and ONCFS structures to ensure an epidemiological surveillance, with the main objective to determine the causes of mortality of birds (species of interest only) found in the field.

This working network is well structured according to the agreement, involves all expert groups and institutions dealing with the process if a dead bird is detected in the field until achieving the results of the analysis identifying the cause of the death.

- The **field observer's network** (environmental agents of the ONCFS and monitoring LPO network) is the base of the process. Coordinated by the two facilitators (one from the LPO and one from SAGIR (Epidemiological Surveillance Network for Wildlife – ONCFS department). When the environmental agents detect a dead or injured animal in the field, they are obliged to contact the "incident coordinator".
- The **incident coordinator** is a person from LPO or/and ONCFS that decides if necropsy and analysis will be performed to the dead bird and coordinate the collection of the samples. This person has also responsibility to inform the different relevant departments from ONCFS and LPO regarding the case.
- If the incident coordinator agrees, the LPO person, ONCFS agent or any other person that has authorization for **collection and transportation of dead birds** (issued by ONCFS) from the field collects the body. While collecting the corpse a **specific form** needs to be filled-in (with all relevant information regarding the case) and a registration number is designated to the case, the number that will be used by the vets and labs. The samples/corpse are carefully collected using **special equipment and bags**. The coordinator will organize the transport to the veterinary service, if the transport cannot be done immediately the corpse should be refrigerated (but not more than 24h).
- **The Veterinary network service** is provided by the local departmental services of ONCFS (LVD - Departmental Veterinary Laboratory) that work in close contact with LPO vet experts (Poison Vigilance Network). Their expert status is recognized by ONCFS for performing the **necropsy** (vets with experience with raptors and well-informed about poisoning), committed to follow the security measures for animal necropsy already established in the approved **Decree 16/07/2007**.
- Before the necropsy an **x-ray** is done to all corpses as routine to check the possible presence of ammunition as cause of shooting.

- If the cause of the death is not clear after the necropsy, samples need to be sent to a **histology lab**, or as a further step to a **parasitology** and therefore to **toxicology labs** if questions still remains. Specific labs are identified as **reference labs** listed in the document.
- After the necropsy samples/corpses are kept frozen for at least a month, just in case it is needed to perform more analyses in order to conclude the case.
- The **results** from the necropsy or the possible analysis subsequently performed are provided by the veterinary service (LVD) to LPO and ONCFS. The **report** is jointly produced by LPO and ONCFS and provided to MEDDE (The French Ministry of Ecology, Sustainable Development and Energy).
- **There is a database,** well organized and managed by LPO and ONCFS, the ownership of the data is well described in the document.
- **Funding** is provided by the government or by private donors.

Evaluation

- Although this is not strictly speaking an anti-poison strategy or action plan, it describes and secures most of the important steps in detection and resolving of poisoning cases.
- This agreement is a perfect example of collaboration between the NGO sector and the public authorities, which is something crucial in the fight against the poisoning.
- Complex interactive network of entities, departments and experts, very well structured on paper.
- This Action Plan / agreement between ONCFS and LPO designates transversal action of various National Species Action Plans.
- Regarding the observers network; in practice, there is a significant participation of the volunteers (Bearded Vulture monitoring network) and ASTERS (especially in the project area). This is very positive. In future this network should expand and involve also other stakeholders, such as local people (hunters, farmers), tourists (birdwatchers), people that could also find dead animals in the field, they should be informed how to report this case.
- Detecting dead animals and identifying the cause of death are important steps in the fight against poisoning but, not sufficient. The poisoning cases needs to be investigated in details in order to understand the motives and methods of poison use as well as its final impact on the dead birds and then propose adequate conservation actions. For this is crucial to identify the poison product, how it was obtained, how it was used it and why.
- This agreement/protocol has only 7 target species (or species of interest): Red Kite, Griffon Vulture, Black Vulture, Bearded Vulture, Osprey, Lesser Kestrel, and Bonelli's Eagle. Other species that could be part of the food chain of the target species must be considered, such as wolves, foxes or even in some cases domestic animals (dogs, cats and livestock). Also other scavenger species – Egyptian vulture, raven, buzzard, golden eagle. For recording of domestic animals poisoning cases it is important to encourage farmers to report these cases.
- The document suggests that only corpses and samples from birds that died from abnormal mortality are collected. This is something very difficult to be identified in the field and opens the possibility that some presumably poisoned or intoxicated animals are left in the field.
- All corpses found of the species mentioned above need to be analysed, at least a necropsy should be performed as in large number of the cases this can reveal the cause of the death.
- Even injured or weak animals found in the field need to be analysed (or at least tested for lead intoxication). The participation of the recovery wildlife centres is very important in this process, they also need to follow protocols and play active part in anti-poison work – engaged by the ONCFS and the LPO.
- The coordination of the database has to be managed by a national institution and this is clear in the protocol. What is also important that this data is available for all entities involved in anti-

poison works on the ground.

- The content of the database must be analysed and made available to all interested parties (to national nature conservation institutions and organizations, but also to local entities – which in practice are normally more effective on the ground). The results can be extremely useful in planning of future anti-poison actions (national and local). More explanation is provided in the section “Poisoning cases”.
- Heavy metals analyses must be considered (Pb at least) as standard routine practice. This should be included in this agreement.
- If possible analysis for antibiotics or anti-inflammatories (vet products) should be done to birds (scavengers) that mostly feed on livestock farms or depend on livestock.

National Species Action Plan for the Bearded Vulture in France

Plan national d'actions en faveur du gypaète barbu *Gypaetus barbatus*

This species action plan was prepared in 2010, foreseen for 10 years of implementation, until 2020.

The overall objective of the plan is to consolidate the Alpine and Pyrenean populations of Bearded Vulture and initiate a link between them.

In the Alps, the objective is to sustain the population by increasing the geographic range and increasing the number of breeding pairs.

The species action plan points out that the risk of poisoning is increasing in the Alps, and is closely related to the re-colonisation by large predators, which will also increase the risk of lead intoxication. Therefore, poison is considered a serious threat and effort should be undertaken to assess these threats and propose adequate conservation measures.

According to the statistics included in this document poisoning appears to be a limiting factor only in the Pyrenees (Table: Bearded Vulture death records 1955-2006, page 35), but this is partly explained by the fact that this threat is not closely monitored in other massifs. With the return of the wolf, this should be considered as a potential risk in the Alps. Especially since the poisoning of other species have been already reported: in 1995, Golden Eagle (poisoning **chlorophacinone (rodenticide)** close to the town of Reposoir, Haute-Savoie and **lead intoxication** at Petit Bornand) (RAZIN 2000), dead sheep carrying **cyanide capsules** in Mercantour in 2004, 3 dead golden eagles in the same place in Savoie in 2006. Finally, the dramatic lead intoxication, which caused the death of two adult Bearded Vultures at the specialized captive breeding centre in Haute-Savoie in 2002, reflects the dangers of wildlife carcasses containing lead ammunition available to Bearded Vultures that can be victims of acute or chronic lead poisoning. Lead intoxication cases in Bearded Vultures, were also recorded in the surrounding countries: juvenile released in the Austrian Alps in 2005 suffering **lead intoxication** in the Austrian Alps (ingestion of lead shot present in a body of ungulate) and also one other case in 2008 in the Stelvio National Park in Italy.

More recent data from the Alps (not included in the SAP):
Nicola (shot twice with lead bullets & contaminated)
Dorja (recaptured & rereleased, 2012)
Sina (high lead levels in the bones)
Ikarus (acute and chronic lead intoxication)
Glocknerlady (found in Austria, acute lead contamination, treated & re-released)
Lousa (found in Austria, high acute contamination and permanent damages)
Mercantour (immature bird found dead in 2014, identification unknown, death reason either lead contamination or golden eagle attack)

In the Action Plan it is mentioned a study (MARGALIDA et al. 2009) that quantifies the causes of death of Bearded Vultures in Europe, where shooting (31%), poisoning (26%), collisions (18%) and intoxication (mainly Pb) (12%) are considered as the four main causes of mortality. **Two comments regarding this:**

- If poisoning and intoxication are summed up they will be the main cause of death for Bearded Vultures in Europe.
- Shooting was probably more common in the past?!

Additionally to toxic substances that directly kill vultures, there are also toxic substances which weaken the immune system or cause nervous disorders that will lead to another cause of death. For example, in

2006 in the French Pyrenees, a breeding female was found with a broken wing presumably indicating a collision; analyses revealed that this bird was in poor condition before the accident because it was lead intoxicated.

Exposures to toxic products (heavy metals, pesticides, veterinary medicines) should be considered as co-factors for mortality since they may influence an animal in a harmful way and expose it to other danger (collision or electrocution). Thus, the analyses for presence of these substances should be done even when the cause of death is evident (e.g. collision).

From the SAP, shooting and collision cases in wild birds are easier to detect and to resolve than poisoning cases. Therefore after the necropsy, a series of analyses need to be performed and often repeated in order to identify the particular toxic substance, which is indispensable for further investigation by the ONCFS. However the French laboratories often encounter problems in identifying substances that are not from the French market, and this makes final analysis impossible.

A **poison risk monitoring system** has been developed in the **Pyrenees**. It is based on a network of observers that reports and collects the corpses of Red Kites, Griffon and Egyptian Vultures, to study the causes of mortality and the level of contamination (see "Causes of death" in the SAP). A committee of experts (veterinarians, toxicologists and ornithologists) analyses the results of autopsies and analyses carried out by the specialized laboratory of the National Veterinary School of Lyon. By presenting the results on a map, the causes of death or specific problems with poisoning or intoxication could help to identify areas where adequate conservation measures can be implemented.

The difficulty and the very low probability of finding dead Bearded Vultures in the field are highlighted in the SAP, as they are normally living in inaccessible areas.

The SAP is presenting a sceptical opinion regarding the utility of telemetry and wing-tags in finding dead birds in the field (comment).
- Some comments are a bit out-dated and should be reconsidered, as the telemetry has shown to be very useful in the last years.

From the SAP: “Monitoring telemetry does not estimate mortality in the Pyrenees. Several corpses were detected, but sometimes months after the death of the bird, and it concerns only a fraction of the population. In addition, the technical equipment has a limited life span (2-3 years) and losing the harness could also be a problem. This type of wild animal tracking is more interesting to study other parameters such as attendance at feeding sites.
- Satellite tracking in Aragon has not detected the death of a bird in the French Pyrenees in 2005…

The marking with wing-tags is based on visual observation and requires a network of high-performance surveyors. It is used in the Spanish Pyrenees (plastic wing-tags in different colours attached to each wing + rings) and the Alps (bleaching feathers + rings). This technique obviously facilitates feedback about any dead bird but does not quantify mortality. Indeed, the birds can lose their wing-tags, from 95 marked birds in the Pyrenees between 1987 and 2006, 19 died (found dead) and 17 are missing (no comment).”

*List of anti-poison actions proposed in the SAP is below, with additional comments provided in **bold**:*

- Educate observer networks for collection of dead animals from the field (vultures, eagles, kites) necessary for the contribution to the vigilance / poison network. **This action need to be taken seriously, this is really the first and most important step in anti-poison work. Small correction: the participants in this network needs to be trained on detecting presumably poisoned animals in the field and not on collecting these animals, this need to be done by the officials (ONCFS)!**

- Analyses of Bearded Vultures found dead in the field**. Make systematic analysis of raptors corpses (vultures, eagles, kites) and of course Bearded Vultures found dead in the wild, even when the cause of death seems obvious (electrocution, collision, shooting). Necropsy, x-ray to reveal the presence of lead particles (ingested or shot), and toxicological analysis should be performed to determine the cause of death. If poisoning: identify the toxic substance in order to help the investigation or prosecution.**
- Ensure that the products used in agriculture activities (pesticides and vet products) have no harmful effects on Bearded Vultures. **Review the list of agricultural products available at the market.**
- **Involve and educate forest and environmental agents, local police and staff from National Parks in the fight against the risks of indirect poisoning, particularly in the areas with large predators. Should also be involved and educated for direct poisoning.**
- Involve policymakers and veterinary committees, responsible for regulation of veterinary products and treatments.
- Establish a toxicological monitoring unit with different local stakeholders and involve them directly in the conservation of the Bearded Vulture and scavenger raptors in general.

The implementation of these actions must be coordinated with similar actions proposed or implemented within the national action plans for Red Kite, Egyptian Vulture and Black Vulture.

Evaluation

- According to these documents it looks that whenever a dead Bearded Vulture is found in France, a proper investigation regarding the cause of death is initiated.
- Also other species are important in the investigation and conservation anti-poison work for the Bearded Vulture. Collaboration must be established between the working groups of other species (with or without SAPs, but relevant for the poison issue). Unifying all these actions for all the species of interest will provide better coordination and systematization and will probably reduce general working effort and costs.
- The Plan is mentioning the intensive anti-poison action in the Pyrenees, similar actions need to be implemented in the Alps as well (foreseen in the Poison Vigilance Plan).
- Link with the neighbouring countries (Spain, Switzerland, Italy) must be established at different levels (detection of dead animals in the field, investigation work, lab analyses and exchange of information regarding poisoning cases), especially in the border areas.
- Prepare a list of standard toxicological analysis that need to be done (include heavy metals analyses, larger list of pesticides and vet products)
- Long-term funding must be secured.

Management Plans of the two National Parks within the project area (NP Mercantour and NP Vanoise)

ASTERS and the NPs confirmed that the management plans of the two national parks do not include information related to poison or anti-poison actions.

- The Mercantour NP provided the “Health Monitoring Protocol of Wildlife in the NP Mercantour”, which is a memorandum/protocol prepared in 2014 by the NP and the “Partnership agreement between the Mercantour National Park and the Departmental Veterinary Laboratory and Food Hygiene Hautes Alpes for health monitoring of wildlife in the Mercantour National Park". This protocol was established in 2014 and will be renewed every year.
- Similar document is also existing for the NP Vanoise

Health Monitoring Protocol of Wildlife in the Mercantour National Park

Protocole de suivi sanitaire de la faune sauvage du Parc national du Mercantour

The main objective of this protocol is to improve the conservation of emblematic species (Bearded Vulture, Ibex) and monitoring of all different causes of death in wildlife (poisoning, diseases…) in the vicinity of the Park. This programme should, in the long-term enable monitoring of the health status of populations of several emblematic species of the Park or issues related to the management of the interaction between the domestic animals and the wildlife.

This protocol is strengthened by a partnership agreement between Departmental Laboratory of Food Safety and the NP Mercantour.

Protocol objectives:

- Detection of new diseases in wildlife
- Detection of possible wildlife diseases transmissible to humans and/or shared by wildlife and domestic animals
- Monitor the unintentional acute effects on birds and wild mammals of the use of pesticides (poisons) in agriculture
- Detect wildlife in bad health conditions

The protocol presents the practical implementation of the “National action plan for epidemiological surveillance disease in birds” in the field.

Selectivity in the collection of the corpses:

Since the agreement with LDVHA (lab) includes a limited number of necropsies per year, it is important to set priorities in collecting corpses. In this protocol preference is given to:

- species of interest: eagles, vultures, falcons, owls, wolves, genets, all galliformes (grouse, partridge), ibex and hare.
- cases when several corpses (more than 5) are found from the same species in a small area in a short period of time (less than 15 days) – then all these corpses must be collected
- when there are suspicions of diseases in game animals (chamois)

Performing necropsy in the field:

The necropsy can be performed in the field if it is too complicated to bring the carcass to the lab.

Samples for further analysis have to be collected and sent to the lab. A Necropsy protocol exists for these events, mentioned as annex 3: **Simplified protocol for performing autopsy on the field / organ removal** (Protocole simplifié d'autopsie sur le terrain / prélèvements d'organes).

The protocol is describing the concrete steps and procedures for searching of dead animals in the field, collecting methods and materials used and also delegates responsibilities to concrete people or departments from the NP Mercantour.

Significant part of this protocol is dedicated to specific infectious diseases related to amphibians, bats and galliformes.

Partnership agreement between the Mercantour National Park and the Departmental Veterinary Laboratory and Food Hygiene Hautes Alpes for "health monitoring of wildlife in the Mercantour National Park"

Convention de partenariat entre le Parc national du Mercantour et le Laboratoire Départemental Vétérinaire et d'Hygiène Alimentaire des Hautes Alpes pour « le suivi sanitaire de la faune sauvage du Parc national du Mercantour

The agreement is signed between the Mercantour National Park and the Departmental Veterinary Laboratory of Food Hygiene – Hautes Alps for 2014 (with one year of duration).

The objective of this agreement is completing the study: "Health monitoring of wildlife in the Mercantour National Park."

In the long term this study should enable monitoring of the health status of populations of several emblematic species of the park and encourage the management of domestic and wildlife fauna interactions.

This agreement highlights:

- The legal responsibilities of the both entities under the French and EU law.
- The importance of the health surveillance and epidemiological monitoring of wildlife because of the high interaction between wild and domestic ungulates.
- The collaboration with partners (farmers, shepherds, chambers of agriculture, agricultural professional organizations, government service, livestock breeders) regarding sustainable management of pastoral activity through efficient consideration of the health status of the wildlife.
- Support to research and conservation of emblematic species (Bearded vulture, Ibex) to monitor all cases of death that may be related to poisoning
- Detection of new animal diseases in the country.
- International collaboration (Alpi Marittime Natural Park)

The agreement describes the analyses that should be done to animals found dead (including necropsy and toxicological analysis) and also delegates responsibilities to the specific experts involved in the process.

The budget foreseen for the year is also specified in the agreement.

This document directly supports and secures the implementation of the "Health Monitoring Protocol of

Wildlife in the NP Mercantour" (previously described), and furthermore contributes to the implementation of the "National action plan for epidemiological surveillance of birds diseases".

Evaluation

The two documents provided by the NP of Mercantour are a good example for securing the practical implementation of the "National action plan for surveillance of epidemiological disease in birds". These kind of agreements or protocols can be very useful, not only for the detection of dead animals in the field and the identification of the death cause, but also for implementation of local conservation work related to wild predators and education of the local people.

- These kinds of agreements are highly recommended for other geographical areas as they are securing and organizing the practical implementation of the actions.
- The agreements must be specific for the area, as the issues related to poisoning (motives, type of poison, methods) can be different from one place to another.
- Its always better that the ant-poison actions are implemented by local authorities (or entities), as they have better knowledge of the area and the people.
- As the number of dead animals analysed per year is limited (due to limited funds) it is important to know how the selection is done (which animals are analysed and which ones are not).
- It will be great if additional funds can be secured in order to perform more analyses on the animals found dead in the field. If possible GypHelp project could fill-in this gap.
- There are serious gaps in the field protocols (Health Monitoring Protocol for Wildlife and the Annex 3) regarding safety for the people performing the field necropsy and proper samples collection. Samples cannot be stored in gloves! These kinds of samples are not adequate for toxicological analyses. **Detailed field protocols must be prepared**!
- Performing a field necropsy can be useful or handier for big mammals species, but shouldn't be use for birds – they should be properly collected (must be well explained in the field protocol) and transferred to vet lab.

Analysis of the large predators “problem” in the project area and the potential impact in future

National Wolf Action Plan – France

Plan d’action National Loup

The action plan was prepared in 2013 and its implementation is foreseen until 2017.

Wolf population in France:

- In 2007/08 – 25 areas of permanent presence of wolf were identified (including 16 packs)
- In 2011/12 – 29 areas of wolf presence (19 packs)

Using the capture-recapture (CMR) technique the wolf population in 2012 was estimated at 250 individuals, compared to 194 individuals in 2007/08.

With a population of 32 packs identified between Piedmont, Italy and France, the wolf population can be considered firmly established in the western Alps.

These results clearly show that the wolf population and its distribution are increasing, so it is expected that wolf attacks will become more frequent in the Bearded Vulture territories, which might result in the use of poison in nature.

The SPA (Species Action Plan) includes the issue of wolf predation on livestock, especially in the new territories where its presence is recent.

Action proposed in the SPA that might have relation with poison use:

Vulnerability analysis for identification of territories with risk of wolf predation.

- So far, the vulnerability analysis was performed only at level of individual herds.

Securing guarding dogs to protect herds

- In late 2006, a national program "Protection dog" started under the MAAF - little is implemented in this direction.

Training of shepherds for protection against predation

- Training is available in the formation centres of the Regional office of Services Training and Development.

The study ACTeon - CEMAGREF "Evaluation of the social Economic impact of the wolf on pastoral systems in the French Alps ":

- The study was conducted in 2010-2011.

While all these actions might help reducing the possibilities of poison use, no direct actions are foreseen against the use of poison.

Anyway, collaboration and coordination needs to be established with the wolf-working group to benefit the implementation of the anti-poison actions.

Evaluation

The **National Wolf Action Plan for France** is presenting the rapid increase of the wolf population in France and recognizing the conflict between the species and the local people.

- The increase of the wolf population in France is resulting in an increase of wolf attacks against livestock. Therefore is very likely that the problem with the poisoning is increasing or will increase in near future.
- Although, the plan is recommending some actions against the wolf attacks, the problem with poisoning is not taken seriously enough.
- The Wolf working group needs to be directly involved into the anti-poison actions

Poisoning cases within the project area

Records provided by the ONCFS

Year	Period	Poison bait	Poisoned animal	Poison used	Region	Locality
2006	Winter-Spring	deer carcasses predated by wolves	1 dog	Strychnine	Savoie	Modane
2006	Summer	sheep carcasses predated by wolves	3 Golden Eagles	undetected	Savoie	Montricher-Albanne
2013	Summer	2 corpses of foxes	7 Griffon Vultures	Carbofuran	Savoie	Montvernier
5-6 dog poisonings (data missing)				Carbofuran	Savoie	Valloires
				Aldicarb	Savoie	Valloires
				Strychnine	Savoie	Valloires
2008				Carbofuran	Savoie	Combe de Savoie
2009			1 beaver	Anticoagulant ?	Alpes de Haute Provence	Estoublon
2011			1 wolf	Chloralose	Alpes de Haute Provence	Prads Haute Bleone
2013			1 deer	Anticoagulant ?	Haute Savoie	Samoëns
2014	Spring		1 wolf	Carbofuran		St Jeannet (southern pre-Alps of Grasse)
2014	Winter		1 wolf	Carbofuran		La Brigue (upper valley of the Roya).

Evaluation

The poisoning cases recorded within the project area are clearly showing that the main reason for poison use is the wolf conflicts with the livestock.

- Other target species for poisoning are foxes and rodents.
- These cases highlight the fact that most of the poison substances used are illegal in Europe (Carbofuran, Aldicarb, Strychnine)
- Concrete actions must be proposed against the wolf attacks (compensation measures, improve livestock guarding…)
- The different relevant authorities (not just the nature conservation related ones) must take seriously into account the problem of the presence of illegal poisons among people, as they are not only dangerous for wildlife but also for humans. **The police and the human health institutions must be involved.**

Summary report (2013): Poisoning cases of birds of prey with NSAP – National Vigilance-Poison

Synthèse 2013 de la Veille Nationale Vigilance-poison Consacrée aux Rapaces Disposant d'un PNA

Report produced by the LPO – MISSION RAPACES in 2014.

This report is presenting an overview of the mortality cases of the raptors with National Species Action Plans in France, over the last 10-15 years (for some the species data is available from the last 20 years). The report is based on the database previously mentioned in the "National action plan for surveillance of epidemiological disease in birds".

- The number of dead birds of prey found in the field during 2013 is 40% higher when compared to the number of dead birds found in 2014 (100 in 2013 vs 61 in 2014).
- In absolute terms, very few birds of prey are found dead across France!
- More then half of these birds were analysed for toxicology (61) and the more then half of them were positive to toxic substances (26).
- Carbofuran was the poison most used (19).

Evaluation

This report and the database of mortality cases contain valuable data that can provide useful information for the implementation of national and local anti-poison actions. An analysis of this data could help:

- Identify hot-spot areas for poison use – according to the poisoning cases found.
- Identify period/s of the year when poison is more frequently used in each hot-spot area.
- Identify list of all poison substances used in each area and try to link them with the different local agricultural practices.
- Understand why these products are used.
- Explore the availability on the market of the products containing the identified poison substances.

This data analysis is very simple and can be easily done and can be of a huge importance in the planning of future anti-poison actions.

Unfortunately this database was not made available for this evaluation report due to data ownership rights. It was already mentioned in the report, that this kind of database needs to be centralized and maintained by a national entity, but it would be practically useful in conservation terms, only if is accessible for regional and local nature conservation entities that are wiling to work on anti-poison actions and are normally more effective in the field.

Conclusions and general recommendations

1. **Search for poison in the wild**: This is the first and most important step in the process of identification of poisoning case. It should be implemented at two levels by establishing networks of active and passive search.

For the passive system it is necessary to have a well-defined plan by which animal carcasses found are systematically analysed for poison. Species that are already considered within the SAGIR protocols are important but this is not enough for dealing with the poisoning problem. There are other species with less conservation importance, but that are very important as indicators for the poisoning problem, such as: crows, ravens, foxes, dogs and cats, hedgehogs, and many other species (mentioned above). Analysis of these indicator species, should also take place, and these should be included in the SAGIR protocols. For poison purposes these species are even more important than the Bearded Vulture. If poison is identified in the priority species (e.g. Bearded Vulture) it means that we have acted too late. The common species (normally considered as less important) should be used as indicators. It is advisable to establish a system of analyses of poison indicator species.
So the main recommendation is to increase the list of species targeted in the SAGIR network, through the passive system. Also, all animals found dead should be analysed, or at least subject to necropsy – currently only cases of abnormal mortality undergo this. The number of cases analysed is very low for the whole of France!

A system of active search could be done based on preventive inspections. These inspections should be done in periods of the year with higher frequencies of poisoning cases (these periods need to be identified previously using the database of poisoning cases) and should be done separately for different territories (as the motives for poison use and the agricultural practices might be different from one to other areas). E.g. if poison is used in agricultural practices – this will be normally in spring or autumn period, if used to combat predators (wolfs, foxes) – more common in the winter period. It is sufficient to have one inspection per year/or critical period in each area. This practice will not only increase the possibility of finding poisoning cases in the field but will also make local people (potential poisoners) aware that there are authorities searching for poison in the field and that this problem is taken seriously. For e.g. in Andalusia, Spain: The preventive inspections are done with help of trained dogs (the preventive inspection can be done with or without dogs). The point is that they have developed a double active system: one for Emergency inspections (when poisoned animal is detected in the field) and Preventive Inspections (for search of poison baits or other poisoned animals).

- All documents evaluated are presenting the passive search only, defining a system and protocol to follow when presumably poison animals are found in the field and strictly considering only protected species (defined as species of interest). This needs to be changed to include more species, the need for more analysis, and introduce the active search protocols.

2. **Cooperation and regular information exchange with other countries**, especially with the bordering ones: Italy and Switzerland.

- Not much attention and importance is given to cooperation with other contrives regarding the poisoning incidents.

3. **Well-organized and standardized protocols, procedures and forms** for acting in poisoning cases, especially when the poisoning is not so evident. This should ensure that all actions taken in the field by the authorities or NGOs, has legal validity.

- The “National action plan for surveillance of epidemiological disease in birds“ (page 5) is presenting a general protocol for acting when poison animals are found in the field, but this

cannot be considered as practical protocol that can be useful in the field (its simply too general). The National Parks, particularly the NP Mercantour as part of the Health Monitoring Protocol of Wildlife (page 11), has a “Simplified protocol for performing autopsy on the field / organ removal” (page 12), but this is again too general and manly focused on collection of samples for identification of diseases, not poisoning cases. Inadequate sampling can produce fake negative toxicological results and the procedure taken in collecting samples or animals from the field might not be considered relevant in juridical terms.

- Field sampling protocols and lab methods must be improved to maximize detection rates of poisoning. The existing protocols are good enough to detect "obvious" poisoning that is the tip of the iceberg, but not that under the surface, which is the most worrisome. It is the "uncover" poison that we must fear.
- Field protocols must always be at least supervised by officials. Ideally, they should be undertaken by. If not, results obtained are only useful in terms of science/statistics, but not in legal procedures.

4. **Specific training**: People that find, collect and work on the poisoning case (vets, officials) need to be trained on identification of poison in the field.

- The incident (or discovery coordinator) mentioned in the “National action plan for epidemiological surveillance of birds diseases” should have a very advanced training in this regard, as this is the person deciding which animals need to be analyses for toxicology. From the “Synthesis report: Poisoning cases of birds of prey with NSAP“ (page 17), approximately half of the dead birds found are analysed. Due to the fact that not all poisoning cases are evident and many times poisoning can be masked with other cause of death, there is a big risk that some poisoning cases are not identified. In the same synthesis report it presented that only half of the analysed animals are positive on poisoning, which opens the possibility that some poisoning cases are passing with fake negative results. This doesn’t actually means that there are lack of capacities in the labs, it simply means that it is not always easy to obtain positive results in many cases - often toxicological analysis need to be repeat several times in order to detect the poison substance (the problem of fake negative result is very common).

5. **Proper use of terminology**: It might be a translation problem or misunderstanding, but in some parts confusion in poisoning or environmental poisoning is noted.

- If there is confusion in this regard, these terms need to be explained to the people (vets, agents) working in the field with poison, poisoning, pesticide poisoning.

6. **Laboratory issues**

- Detailed lab protocols for collection of samples need to be established. This is very important as in practice it is very frequent to have the samples damaged because of bad manipulation.
- List of frequent and less frequent poisons can be very useful for the labs in identification of the poison substance. The collaboration with the neighbouring countries for this matter is also important, especially in the bordering areas.
- The number of analysed cases per year is very low probably due to the funds availability for this action. On national level only half of the dead birds found are analysed, and particularly for the project area (the National Parks area) even less, due to the limited funds.

7. **Products potentially used as poison**

- List of frequent legal agricultural products used for illegal poisoning need to be prepared for each area. This is simple action that can be done by local or regional NGOs, separately for different regions (agricultural practices can be different from one to other place). This information can be collected using the questionnaire method and the important stakeholders for this are the local

farmers and the agricultural pharmacies offering these products.

- Also the illegal substances used (Carbofuran, Aldicarb and Strychnine - confirmed in the poisoning records provided by ONCFS), need to be listed as well, but more important is to work on the availability of these products (from where are they coming). This is much more serious illegal practice, so it has to be done by ONCFS and police, human health institutions must be involved in these cases as well.

8. There is **general** impression that the poisoning is more frequent than recorded. Simply because the investigation is only focused on a short list of species (priority species), other species must be considered as important for the poison problem.

- If only VIP (priority species) species are included or considered for analysis, then it means that POISONING IN THE AREA IS CLEARLY UNDERESTIMATED.

Specific recommendations for future anti-poison actions within the project area

These specific recommendations are based on the conclusions and general recommendations previously described. The recommendations are referring to the project area of GypHelp Project, but after their successful implementation in this area, should be also considered for other regions in France or even accepted on national scale.

R Establish active poison search and preventive inspection within the project area

- **Establish a working group (or unit)**, local people that know well the area and are involved in the investigation processes of poisoning cases. The participants of this group should definitely be the environmental agents (ONCFS/SAGIR) and the rangers from the National Parks (Mercantour and Vanoise), the same group of people that normally reacts when a dead animal is found in the field. Participation of volunteers or employees from the NGO sector (ASTERS, LPO) or even the hunting associations is more then welcome in this working group. Considering the large territory it will be probably necessary to create more then one team, one for each of the NP. ASTERS and the NPs should lead the organizational part of this activity (coordination, communication and meetings organization). Wolf conservationists should also be involved in this active preventive team.

- **Process the poisoning or mortality cases data** from the projects area. First, the current database on poisoning cases should be make available for analysis to all stakeholders. Identify hot-spots areas (where poison is used more frequently) and for each hot-spot area identify the reason/s for poison use, stakeholders (how they are related to agricultural practises) and list the poison products used. Also try to determine the period of the year when poison is used more frequently (normally in spring and autumn poison is used more frequently – when related to specific agricultural practice, but also sometimes in winter when it is more related with wolf attacks). This information will be very important for organization and planning of the operation of the working group. ASTERS can do this work or any other entity with more regional view, what is crucial here is the access to the poisoning/mortality cases database owned by LPO and ONCFS.

- **Make sure that other species (not only protected species) are considered as important in these poison searches.** As previously explained, common species must be considered as well, as in most of the cases they can provide more information then the protected species (so far considered as species of interest).

- **Frequency of the poison searches or preventive investigations.** It's recommendable to have this search one time per a year / per area, but this should really depend on the previously identified hot-spot areas and hot-periods of poison use (in which eventually the poison searches will need to be more frequent).
- **Public awareness** is an important factor if we want these poison searches to be considered also as preventive inspections. Make sure that local people are well informed about these searches and what are the consequences if poison is detected in the field. Production of posters or leaflets might be very useful.
- Having established a **telephone number (SOS-line)** on national or regional level will help the detection of poisoning incidents or/and provide any other interesting information: sale of toxic products, suspicious activities, etc. Although this action is more related to the passive search (registration of poisoning cases) could be also very helpful in collecting of information about the poison use. In other countries this mechanism is considered to be an extraordinary information source, when there is no other official system available for the citizens.

R Identify referent organizations for anti-poison work from other countries

- The project area is bordering with Italy and Switzerland, so at least for practical reasons when poison case occurs on the border collaboration should be established between the both countries, its very common that animals can be poisoned in one place and die – be found in other, in this case can be a different country.
- It is useful to have information about poisoning cases detected in the neighbouring countries and know the procedures established there. Some good practice experience or even mistakes are very useful to improve your work.
- Collaboration with counties like Spain – with huge experience in anti-poison work can be very helpful on so many levels: poison search, protocols for investigation, lab analyses, juridical processes, etc.

R Field protocols and forms for sampling or collecting dead animals need to be more detailed – updated

- For updating the protocols or even for making new ones, the previously mentioned collaboration with other countries can be very useful. Please check the specific protocols produced for Spain (by SEO/BirdLife Spain, through the Life Project VenenoNO) and also the manual published by the Regional Government of Andalusia.
- For start it will probably be easier to modify or update the protocols used by the National Parks Mercantour and Vanoise (project partners), but afterwards it will be good if these modified and more complete protocols are also proposed to ONCFS.
- The French legislation related to this issue must be checked and collaboration with environmental lawyers to be established.
- It is strongly recommended that carcass sampling protocols/analysis must be unique for all species, including wild and domestic. This protocol must treat identically a Bearded Vulture and a domestic cat. This not only homogenizes and standardizes methods, but also ensures that legal actions can be taken and guaranteed. If methods are different, they cannot compare the effect

of poison on ravens and Bearded Vultures, since data was collected by different methods.

- This action manly requires coordination and communication, practically is an office work. Organization of meetings with participation of foreign experts might be helpful.

R Strengthen the capacities of different profiles of experts/authorities involved in the poison investigation process

- Assuming that good protocols are prepared, the capacities of the people working in the field are also very important (ONCFS/SAGIR agents, NP rangers, vets, toxicologists…). Therefore specific training seminars should be organized for: searching of poisoned animals or baits (active search), collection of samples and evidences (implementation of the protocols), laboratory analyses and juridical cases, inviting foreign experts (from countries with best practice experience like Spain).
- Apart the seminars, especially for the lab technicians from the French referee labs (LVD) visit and short stay in specialized wildlife toxicology labs is also highly recommended.

R Accept and declare the serious situation with wildlife poisoning

- This is actually the first step in the fight against the poisoning of wildlife. Firstly, every institution involved in the anti-poison actions must be fully convinced that this is a serious problem affecting wildlife. It's expected that after implementation of the active search, considering other species as important and the implementation of adequate protocols the number of poisoning cases will significantly increase. Secondly, it is important to inform the public about the seriousness of this situation by implementation educational and public awareness campaigns.

R Increase the quantity and quality of the laboratory work

- After the implementation of the active search, implementation of the protocols for collecting samples and dead animals and the increase in the list of target species for analysis; the number of lab analyses will definitely increase. In the project area (the vicinity of the NP) the funds for analyses are limited, so it will be very helpful if the GypHelp Project could secure funding for the additional and more complete lab analyses.
- A minimum of about 10 000€ for each NP will be needed per year in order to be able to perform the increased number of lab analyses (the current year budget of the NPs for lab analyses is about 5000€ per year).

R Police involvement in the poisoning cases

- Considering the fact that use of illegal products (Carbofuran, Aldicarb and Strychnine) have been already identified (ONCyFS and LPO data), it is expected that these cases are managed by the police as this is not only environmental crime, but also refer to use of illegal substances that are harmful to the public health. The police normally have more competence and power in resolving these cases.
- For committing the police in these poisoning cases, the education and public awareness previously mentioned will help, but also a specific meetings or training seminars should be

organized as well.

- Investigation on availability and sale of these illegal products is something that should be overtaken by the police.
- For e.g. in England the fight against the poisoning of wildlife is based on detection of illegal poisoning and use of banned agricultural products. These cases are normally easier to resolve and more attractive for the persecutors and the court.

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