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SÖLKTÄLER NATURPARK

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Short report

International Conference

„THE WOLF IN THE ALPINE CULTURAL LANDSCAPE – CHANCES AND CHALLENGES“

17th - 18th of May 2017
Sölktäler Nature Park, Austria

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CONTENT

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The discussion process on the wolf in the Sölktäler Nature Park – results and stakeholder´s positions

STEFAN FALKENSTEINER
Sölktäler Nature Park | Austria

The wolf (Canis lupus) independently returns to Austria after more than 120 years, and is highly protected on different levels from global (Bern Convention) and European (FFH Directive) to national and province (e.g. Styrian hunting law) perspective. What on the one hand is a big success for nature conservationists, on the other hand lead to a high uncertainty and partly fear in several population groups. Supporters argue with the wolf's right to live and an enrichment of the domestic wildlife composition. Conflict potential mainly persists with different users of the alpine cultural landscape, e.g. alp farming, forestry, hunting, and tourism. The issue is quite relevant in our region too, last but not least since confirmed sheep killings by a wolf close to the Sölktäler in 2015.

Sölktäler Nature Park addresses the topic „The wolf in the alpine cultural landscape" in a comprehensive information and discussion process in 2017. The goal is objective information on the wolf and the challenges, with an active involvement of the most concerned stakeholders in the discussion. We take the different uncertainties and the fear very seriously and want to widely communicate them. The initiative should bring together different positions and contribute to an objective process of problem solving. Beside the International Conference several events on different levels were held:

- Special exhibition „The comeback of the wolf" at Schloss Großsölk, 17.05. – 20.09.2017. Opening as start event of the International Conference on 16.05.2017.
- Round tables with regional representatives of the interest groups "agriculture & alp husbandry" and „forestry & hunting".
- Round table and negotiations with the exhibition team and representatives alp husbandry and hunting concerning the contents of the special exhibition, leading to an enlargement and improvement of the exhibition on the critical issues "wolf & alp husbandry & livestock protection" and "wolf & responsibility of society".
- Two local information evenings with panel discussions, especially for the most concerned interest groups "agriculture & alp husbandry", 20.03.2017 and „forestry & hunting", 21.03.2017. Wolf experts and representatives of the different interest groups informed about their experiences and positions and discussed with the audience. The respectable numbers of 70 and 60 farmers, foresters and hunters participated.
- Historical excursion and seminar "Historical facts about the wolves in the Niedere Tauern region" with the Austrian historian Josef Hasitschka with 30 participants on 15.07.2017.

Main statements of the most concerned stakeholders during the discussion process were:

- The return of the wolf in our cultural landscape implies big challenges for the alp farmers, hunters, and landowners.
- Most of them do not welcome the return of the wolf, and are in doubt about the effectivity of herd protection measures, a compensation system, and a further cultivation of their land.
- Discussions about a loosening of the status of wolf protection should be possible. Evaluation on population size and state of preservation is hardly understandable.
- Wildlife ecology spatial planning (WESP) for the wolf in Austria / the Alps?
- These groups often feel alone with the problems. The whole society (including urban!) has to assume responsibility, both monetary and emotional.
- The politics has to establish appropriate frame conditions.
- Without appropriate frame conditions more alps no longer will be cultivated – leading to big impacts on the cultural landscape, biodiversity, high-quality food production, farmers income, traditions, protective function, tourism, etc.

„The wolf in the alpine cultural landscape – chances and challenges“

17th - 18th of May 2017 | Sölktäler Nature Park, Austria

The aim of the International Conference was an exchange of experiences on international level. We were proud to have experts from the Alps (Austria, France, Germany, Italy, Slovenia, Switzerland) and the Carpathians (Romania, Slovakia), presenting the current situation concerning wolf populations, conflict fields and approaches to solve the problems in their regions on the first conference day. Questions and discussions after the talks were an essential part of the conference. To the public evening session – a panel discussion with three international experts – the general public of the municipality of Sölk was invited. Central issues of the questions and discussions were potential wolf damages on livestock and impacts on future cultivation, livestock protection and (economic) compensation, as well as impacts on hunting.

The second day started with a workshop in the form of a World Cafe focussing on the main challenges and possible solutions in the four topics “alp husbandry”, “forestry & hunting”, “tourism”, and “nature protection”. As completion of the conference program an excursion to a typical cattle and sheep alp in the Sölktäler Nature Park was organised. Current practices in alp husbandry and potential measures on livestock protection could be discussed directly on-site. We highly welcomed the active involvement of local alp farmers in the discussion. On the other side international experiences from regions having similar conditions were of great importance.

The participation of more than 100 people showed the high relevance of this controversial issue. We would like to thank Marianna Elmi (Deputy Secretary General, Alpine Convention) and Guido Plassmann (Director ALPARC) for their laudatory words: „Such an intensive process about this controversial issue is not common for a Nature Park. The technical preparation and the objective culture of discussion should be best practice for other regions and institutions. These are basic requirements for constructive debates“.

The Conference was organised by Sölktäler Nature Park in cooperation with the Naturpark Akademie Steiermark and ALPARC. We would like to thank all speakers for their interesting talks, Andreas Hollinger (Gesäuse National Park) for his animated moderation, the audience for their active participation, our partners for the great cooperation, all helpers for their perfect support making it possible to organise such a big event, and the Federal Government of Austria, the Province of Styria and the European Union for their sponsorship.

This short report should give a compact summary of the International Conference in the Sölktäler Nature Park for participants, authorities, related institutions, and the interested public. For further information please contact Sölktäler Nature Park, Naturpark Akademie Steiermark or ALPARC.

1. Historical descriptions of the wolf in the Niedere Tauern region

JOSEF HASITSCHKA

Correspondent in the Historic Federal Commission of Styria | Austria

The memory of the wolf as a predator and a threat to local animal farmers is still traceable, after 170 years of its extinction: Detailed official documents of former district offices in the region contain evidence for measures against the wolf - "plague" until the animal's extinction, as documented in various protocols.

In a few words: The wolf's way of living was well known. Statements of victims, hunters, trappers and government officials are congruent and objective. Especially habitats above alpine pastures, wolf crossings, breeding places, excessive killing of sheep on extensive pastures above the forest line as well as killing of sheep, goats, calves and pigs near human settlements are accurately documented. The historic grazing system in the region by farmers on small mountain pastures (no shared pastures), with small herds of livestock, oxen and sheep widely dispersed on extensive high-lying pastures, neither with paddocks and fences nor with shepherds and dogs for sheep, is documented.

Personal conclusion: Conservationists should stop creating pseudo-relations to myths in this region ("The wolf is unjustly demonized"). Statements like "We have forgotten how to treat wolves" are dangerous (wolf traps have not rusted yet!). Belittlements like "The wolf was considered as a competitor for hunting and agriculture" or "Single wolves only take single prey" are contradicted by historical facts: The wolf was the most dangerous predator, killing sheep in series and hunting near human homes. – In our topographically unstructured landscape, alp husbandry is organized in small units, without practical options for livestock protection by fences or dogs, and therefore livestock cannot currently be protected successfully.

2. The wolf in the Austrian cultural landscape – first steps of population development and management

GEORG RAUER

Transnational Coordination Office
for the brown bear, lynx, and wolf KOST;
Wolf representative | Austria

Since 1970 wolf populations in central Europe have prospered and expanded due to legal protection or the installation of hunting regulations, respectively. The number of dispersing wolves reaching Austria from populations around has increased markedly in recent years. In the period 2009-2016 twenty-five individual wolves were detected in Austria by genetic evidence, some were registered only once or very few times, others stayed for up to 3 years in a certain area. In 2016 the first pack since more than 100 years evolved at the Military Training Area Allentsteig in Lower Austria, 5 pups were observed in the course of the summer.

Like in other countries wolf habitat in Austria is mainly found in the cultural landscape. Wolves can adapt to human presence and exploitation of the environment, assumed they are tolerated. All they need is sufficient food and retreat areas for reproduction – and in Austria deer numbers are remarkably high and forests cover about 50% of the land surface.

Living with wolves implies conflicts. Wolves pose a threat to livestock and there is a need for prevention measures which are expensive, laborious, and sometimes ineffective. Hunters fear competition, face interference with the established practice of game keeping and harvesting, and worry about encounters of hunting dogs with wolves. Local people are anxious about wolves behaving not as fugitive as expected and sometimes venturing close to human settlements.

In Austria the wolf is highly protected by provincial hunting and/or nature conservation laws in accordance with the Habitats Directive of the European Union. In 2012 principles and recommendations for the management of wolves in Austria have been elaborated by the Transnational Coordination Office for the brown bear, lynx, and wolf (Koordinierungsstelle für den Braunbären, Luchs und Wolf KOST), a board formed by competent administrations and interest groups. The most important task for the next future will be to improve damage compensation and to develop programs to promote, support, and advance livestock-protection measures. The number of dispersing wolves in Austria will increase and new packs will be formed. We should be prepared.

3. Status, impacts on prey, impressions and perception towards the wolf in Italy

PAOLO MOLINARI

University of Torino,
WILCONS – Lynx Project Italy;
KORA Switzerland | Italy

At the beginning of the 1900s the wolf was still widespread in much of Italy, but after heavy persecution it was nearly extinct in the 1960s. In 1971, the wolf was put under protection and the success story of his return began. In particular thanks to the presence and contemporary increase of wild boar, one of the most important prey species in the Apennines, the predators succeeded in conquering large parts of the Apennines and reached the Alps. The wolf has now colonized all Apennines and large parts of the Alps. A large part of the animals living in the Alps today are of Italian origin. In the Apennines live about 1,700 wolves, in the Italian Alps about 150 individuals. In the border region Italy/France it is estimated that more than 30 packs are present.

The return of the wolf also means the return of some problems – e.g. the predation on domestic animals or the influence on game species. It is precisely this problem that is subject of various studies, as well as a few specific projects which have the solving of conflicts as one of the main themes. One of the most recent and most important of these is the „LIFE12 NAT IT 000807 LIFE WOLFALPS".

Various long-term studies and robust data on the impact of the wolf have clearly shown that there is an influence, but that wild ungulates are only rarely decimated and never eradicated - as the hunters fear. On the contrary, the hunting bags remain constant or even rise, while the fears of hunters remain. In many places in Italy this is different and the hunters are less concerned. Why? Because in the Apennines and some parts of the Alps the return and increase of the wolf was paralleled with that of the ungulates. That's why the hunters rarely have the feeling that they have to renounce because of the wolf. It is different in Alpine regions like in Austria or Bavaria – where hunters are faced with an abundance of ungulates and are now feeling to lose part of it because of the wolf. It is more a problem of perspectives and sometimes a problem that takes place in the minds of the people.

The return of wolves, of course, does not mean that there are no problems, such as e.g. when domestic animals are killed. But there are many examples which show clearly that a coexistence, especially with the hunters, is possible. This is demonstrated by regions such as the northern Apennines of Emilia Romagna where wolves exist at densities of over 5 wolves / 100 km² (the highest density of Europe) together with very high densities of ungulates (roe deer, red deer and wild boar), and the hunting bags are constantly increasing.

4. Wolves in Slovenia – ecology, current status and conflict prevention

MIHA KROFEL

University of Ljubljana,
Wildlife Ecology Research Group | Slovenia

In Slovenia wolves were never completely exterminated, although several times they came quite close to complete extinction. In 1990 wolves were protected by the Slovenian Hunting Association and in 1993 by the government. After protection they regained some of their formal distribution range, although recolonization of the Alps has been slow. Today wolf population in Slovenia is estimated to approximately 52 wolves living in 11 packs, some of them shared with neighbouring Croatia. Monitoring of wolves involves wolf-howling surveys, snow tracking, non-invasive genetics, GPS-GSM telemetry and monitoring the health status of dead wolves. Important part of monitoring also implies public acceptance and attitude towards wolves, which is generally positive in the wolf range of Slovenia.

Special focus in wolf research is dedicated to interspecific interactions. Data available so far indicate that wolves do not have detectable effects on Eurasian lynx, while the top-down pressure on golden jackal is substantial, at least where stabile wolf packs are present. It was suggested that decline or extermination of wolf populations in Europe was the main trigger that caused jackal expansion throughout the continent.

Management of wolves in Slovenia is based on two strategic documents accepted by the Slovenian government: the long-term Wolf management and conservation strategy and the 5-year Action plan for wolf management. The strategy was prepared by an expert group, while action plan was developed through a participatory approach involving all of the main stakeholders in the country (livestock breeders, hunters, environmental and animal welfare groups, etc.).

The most controversial part of wolf management in Slovenia is culling, which is prescribed annually by the responsible ministry. Quotas up to 27% of the population were issued during the last years. In addition to legal hunting and other detected mortality, about 21% of the wolves disappear every year, which includes poaching, undetected natural mortality and emigration. The removal of wolves is sustainable numerically, but the population suffers from a high turnover rate (47% annually) and low pack stability due to high mortality of breeding wolves. Improved understanding of unwanted side-effects of low stability of wolf social system (including increased conflicts) highlights the need for management adjustments to increase survival of the breeding individuals.

Research showed that wolf culling was not effective to reduce livestock depredations by wolves. On the other hand, improved protection of livestock together with other measures implemented during the LIFE SloWolf project (2010-2013) helped in reducing the damages caused by wolves in Slovenia to 74%, despite the growth of wolf numbers in this period.

5. Wolf and livestock on alpine pastures in Switzerland – conflicts and best practices

DANIEL METTLER

Team leader Livestock Protection CH | Switzerland

The conflicts between wolves and husbandry activities in the Swiss Alps are mainly concentrated during the alpine summer pasturing season. Most of the damages in the past concerned sheep flocks, just a small percentage goats. These animals are grazing on three different alpine levels of altitudes with a different morphology and varying vegetation:

- Pre-alpine mosaic of forest and pastures under the tree limit
  This type is characterized by a 6 months vegetation period. Most of the pastures are small, but there are roads and infrastructure for housing and managing the flock. There's a high pressure of bush and forest expansion in the most difficult and remote places. Most of the pastures are fenced.
- The inner-alpine structure on middle altitudes around the tree limit
  This type is characterized by a quite difficult topography with a mix of rocks, forests and steep slopes and pastures. The grazing units are bigger and the climate is much drier than in the north and the south of the alpine arch. The sheep are kept in the lower parts by fences and in the upper parts by natural barriers or shepherds.
- The high altitudes pastures without forest up to the glaciers and the vegetation limit
  This type of pasture is located above the forest and the vegetation period is very short (2-3 months). The extensive summer grazing is widespread for sheep and young cattle. Depending on the size of the flock, a shepherd keeps the flock all around the day. Because of the big size of the pastures and the rocky soil there are too much costs and work to put fences.

Since 2000, three different types of grazing systems are subsidized for the management of sheep:

- Free grazing (difficult to implement protection of grazing)
- Rotation system by fencing (minimal condition to work with LGD's)
- Shepherding system with night corrals (Best Practise for high wolf pressure)

Measures to protect the flocks against larges carnivores (lynx, bear, wolf) are: fencing, shepherds, Lifestock Guarding Dogs (LGD's), emergency measures with sounds and visual stimuli. The application of these measures has to be well planned and adapted to the morphology and the type of the alpine pasture. Normally it is a mix of measures, and the basic condition of all kind of protection is the management of the flock which needs manpower and skills.

The national Swiss Prevention Program to prevent damages in the sheep and goats production is financing the subsidies for the farmers, the coordination and improvement of the measures, and the training for farmers, shepherds, dog breeders and other stakeholders since 2003. A consulting system within the agricultural network of training and education was built up to maintain and improve the sustainability of the coexistence between large carnivores and husbandry practises.

Some numbers about Swiss sheep farming and the protection of the flocks:

Total number of sheep: 400,000	Sheep summer grazing: 200,000
Total number of goats: 90,000	Goats summer grazing: 30,000
Number of sheep alps: 800	Number of alps for other animals: 7,000
Number of wolves: 40-50	Number of lynx: 170
Number of herding dogs: 1,500	Number of LGD's: 250

6. Livestock protection in the Austrian Alps – benefits, consequences and demands

GEORG HÖLLBACHER

Chairman Austrian National Association for Sheep and Goat;
Austrian National Information Centre for Livestock Protection | Austria

In the current practice of alp husbandry in Austria livestock is moving free-ranging without guarding on the spacious alpine pastures, sometimes in very exposed terrain. There is no predator-save fencing installed, which anyway in the rough terrain would just be possible under high effort, and on certain areas impossible.

Measures on livestock protection bring benefits

Efficient livestock protection on alps should primarily maintain the further cultivation of the areas also under the presence of large predators. Additionally the measures create further benefits concerning animal husbandry. The pastures are better and uniformly used by systematic guidance. The permanent presence of a shepherd contributes to an improved control of the animals on the alps. In general a better overview on the flock is given by a controlled and defined (partly fenced) spatial use.

Experiences with livestock protection on alpine pastures in Austria

The MODEL REGION „ALPINE FENCING“ IN ZEDERHAUS, SALZBURG showed that a correct arrangement of the fence is crucial for an adequate protection of the flock. The right installation and ongoing maintenance (electric power supply, grounding) is essential. Potential problems are damages caused by game animals and conflicts with hikers (e.g. crossing of hiking trails).

The experiences from the MODEL REGION “LIVESTOCK GUARDING DOGS AND SHEPHERDING” IN KALS, OSTTIROL primarily showed, that there is an acute lack of qualified shepherds. Main challenges are:

- Guiding a flock is demanding, but the experience and possibilities for training are missing;
- Physical challenges through the high-alpine terrain and weather conditions;
- The interaction with well-trained herding dogs;
- Lack of suitable Livestock Guarding Dogs. An appropriate breeding system has to be established.
- Keeping LGD’s – also outside of the alp season – and the right socialization of the LGD‘s is complex.

Impacts through measures on livestock protection

If livestock protection on alpine pastures should work satisfying some aspects of the previous husbandry have to be adopted. Guarded or fenced flocks have to be smaller and differently structured. The measures may restrict the „freedom“ of the leisure users on alps, therefore a cooperation with the tourism sector and information and acceptance of the public is essential. Impacts on hunting and land ownership could be possible. Keeping LGD’s implies conflict potential – especially outside of the alp season and in the surrounding of settlements.

How livestock protection will be possible

In order to keep livestock husbandry possible under the presence of large predators, on the one hand easy and rapid damage compensation is needed. Necessary protection measures have to be financed by public authorities. Adequate legal frame conditions for keeping and use of LGD’s have to be established. Additionally a comprehensive education of the general public is required, to foster the acceptance on the measures, and to prevent or reduce conflicts.

IMPRESSIONS

7. The wolf situation and conflict prevention in Romania

MIRCEA VERGHELET

Director Piatra Craiului National Park;
President Carpathians Network of Protected Areas | Romania

Romania host more than half of the Carpathian Mountains, where the largest populations of large carnivores in Europe were preserved. The bear population is over 6,000, the lynx is around 1,500 and the wolf population evaluation is around 2,500.

Even if before 1990 the wolf was considered as a pest, and was hunted without any restrictions, the population maintained at around 1,500. After 1990, and especially after Romania joined the EU in 2007, the wolf population increased, while the species received a special protection status, being subject to an intervention quota, based on the damages produced by the wolves.

One particular feature for Romania is that the local population was and still is accustomed to live in the presence of the wolves, and the structure of the food chain is influenced by this species.

There were several wolf projects developed in Romania, having as objectives beside the research on the species behaviour, finding ways to reduce the conflicts with humans, and also awareness and education campaigns.

The most recent project, still under implementation, is called WOLFLIFE, and is implemented in 8 counties in Romania with a representative population of wolves. The aim of the project WOLFLIFE is to implement the best conservation practices for the conservation of wolf in the wild and to maintain a viable population of wolves in the Carpathian Mountains by strengthening the management, and promoting the human-wolf coexistence. The actions of the project include:

- Increasing reproductive success through the effective protection of wolf dens and rendezvous areas, and maintain minimum viable population of wolves.
- Improve the current evaluation method and management of wolves in the project area, by involving hunters and volunteers into monitoring actions.
- Implement best practice and demonstration actions to reduce wolves-farmers conflicts, through using electrical fences and setting up a kennel of traditional dogs and long-term maintenance of the network owners of Livestock Guarding Dogs.
- Identification and promotion solutions to reduce habitat fragmentation by transport infrastructure.
- Reduce wolves' health risks and competition on prey species by improving management of stray dogs.
- Improve the identification of the livestock damage caused by wolf.
- Implementation of an educational and information campaign about wolf addressed to the general public, hunters, animal breeders, students, teachers (promoting the concept of wolves conservation) and to the personnel administering natural areas overlapping the project area.

The situation in Romania was presented also in the evening of the first day of the conference, for the local people who were willing to attend the event. The questions were about the compensations of the damage produced by wolf and also about a possible conflict between the guarding dogs and the tourists passing nearby the sheep flocks.

8. The wolf in Slovakia – status, management and obstacles

MICHAELA SKUBAN

State Nature Conservancy of the Slovak Republic | Slovakia

Despite many obstacles and bottlenecks, the story of wolves in Slovakia is a story of success. In spite of heavy persecution during the last centuries, wolves had never been extinct in Slovakia and could even increase their range. However, due to heavy hunting pressure, the wolf was nearly eradicated from the late 1890 up until the beginning of the 20th century. After killing wolves by poison, fuming pups in dens, and leg-hold trapping was forbidden in 1975 Canis lupus could stepwise recover and started to re-settle its former ranges in Slovakia. However, it took more than 40 years till wolves got their Action Plan in 2016 and an improved hunting system.

Legal status of wolves in Slovakia

Wolves in Slovakia are managed by both, the Ministry of Environment and the Ministry of Agriculture and Rural development. The animals are protected by the Bern Convention, but listed in Annex 5 with a geographical exception for wolf hunting. Thus, a yearly hunting quota is set during the open season from 1st of November till 15th of January. For many years, the yearly hunting quota was "set at the highest wolf numbers ever harvested in the Slovak republic" (around 150 individuals). Thanks to initiatives of wolf biologists and conservationists, hunting quota is nowadays drastically reduced. For the running year 2017, it was first time calculated based on evidence of wolf recruitment in the population (carried out by the Carpathian Wildlife Society). Further, the system of wolf hunting is impeded. Drive hunts are excluded and just one wolf / 10,000 ha is allowed to be shot. Hunters can apply for exceptional applications just in case of high livestock losses. Additionally, wolves are protected year round in the border areas to Hungary, Poland and Czech Republic, as well as in the so called "Sites of Community Importance" formerly established for other animal species. Sadly, debates about wolf numbers in the country are again flaring up which could threaten the new achievements in wolf protection. Nature conservationists talk about 500 wolves in the country whereas hunting community favours more than 2,500 individuals.

Crunch question: Livestock depredation and protection against raiding wolves

In general, wolves "officially" depredate on around 1.5% of the domesticated animals. However, a questionnaire survey of the Carpathian Wildlife Society showed that the real losses are around 2.2%. If a shepherd wants to apply for damage compensation, he must have a functioning protection system. Accepted methods are livestock guarding dogs (in good health status and ideally free-ranging on the pasture), human guards (not alcoholised), electric fences, night penning, and other technical scare devices. It is strongly recommended to release the dogs during the work outside on the pasture. However, dogs are almost always working together with the shepherd, sheep are nearly never left alone somewhere on pastures. This combination reduces many problems known from Western Europe like attacks on tourists by dogs etc. The shepherd can interact in case of innocent disturbing stimuli like bikers or hikers. Yet, increasing recreational activities of people can seriously cause problems. Especially cross-country activities are irritating working livestock guarding dogs. Electric fences should have an appropriate height which is recommended of a minimum of 120-160 cm. Slovak wolves are successfully able to overcome lower fences. Last, shepherds come into conflict with various laws in nature protection. On the one hand, they should graze near the forest to get substitutions. Contrary, they should be about 30 m away from the forest edge in order to apply for full compensation of damage. Normally, the market value of livestock is compensated which does not cover the real value.

9. Do wolves compete with hunters? – Results from prey and population analysis in Germany

ULRICH WOTSCHIKOWSKY

Wildlife Management Consultant | Germany

After app. 200 years absence, wolves repopulated Germany in the year 2000. Today, the population is amounting to app. 60 packs. From the beginning, close to 10,000 wolf scats covering the entire area of the present wolf distribution have been analysed by the Senckenberg Institute Görlitz.

App. 90% of the food consumed by German wolves are wild ungulates (due to prevention measures, domestic livestock – mainly sheep – amount to just 1% of the wolf diet).

App. 50% of the consumed biomass are Roe Deer (Capreolus capreolus). App. 20% are either Red Deer (Cervus elaphus) or Fallow Deer (Cervus dama), respectively. App. 20% are Wild Boar (Sus scrofa).

In the regions in question, Roe deer and Wild Boar are abundant everywhere. Red Deer and Fallow Deer are being confined to certain areas.

I calculated the outtake by wolves under the following assumptions:

- One wolf kills 3 kg living prey per day. This accounts for an edible biomass for 1 wolf of app. 2 kg per day.
- One pack is consisting of 8 animals (end of the year) – 2 parents, 2 yearlings, and 4 pups. Because pups consume less food than older wolves, 8 animals means 6 effective wolves.
- Territory size of any wolf pack is 25,000 ha (250 km²).

In order to translate biomass into individual animals, I used medium life weights of 7.5 kg for Roe Deer (75% fawns in the wolf prey); 26 kg for Red Deer, 16 kg for Fallow Deer (67% calves, resp.); and 12.4 kg for Wild Boar (90% piglets).

Based on these assumptions, the annual outtake of 1 wolf pack on 100 ha (1 km²) would be app. 1.7 Roe Deer, 0.2 Red Deer, and 0.4 Wild Boar in Red Deer areas. In Fallow Deer areas, the outtake would be 1.6 Roe Deer, 0.7 Fallow Deer, and just a few Wild Boar.

Hunters are harvesting 2-4 Roe Deer, 1-3 Red or Fallow Deer, resp., and up to 5, even 7 Wild Boar on 100 ha. In other words: Hunters' annual outtake in the wolf-inhabited regions in Germany is roughly 3-5 times the outtake of wolves.

The message: Wolves may support hunters in controlling game densities, but hunting will still be necessary in the presence of wolves.

10. Will the Wolf survive to mankind? – New opportunities for human-nature coexistence in the Alps

FILIPPO FAVILLI

EURAC Research Bolzano;
Italian Delegation Alpine Convention | Italy

The presentation wanted to highlight the social impact of the return of the Wolf in the Alps, starting from the history of human-wolves relationship. The wolf has always been present in stories, movies, songs, tales and myths of humans – stimulating emotions ranging from admiration to fear. In all human cultures, wolf has been addressed as a source of inspiration (i.e., Native American culture) or as a reference to greed and destructiveness (as in the Bible). These two contradictory emotions have provoked also two, apparently contradictory, management objectives: on one hand, wolf has to be fully protected, on the other hand, there is the need to take measures to avoid/reduce the conflict with humans and their activities.

People in cities and in rural area have two different view of this animal. In urban areas, we assist to the development of new environmental-animalist campaigns, leading to a generalised emotion-based wildlife protection, as in the recent pro-wolf campaign in Italy after the proposal of the new Action Plan for the Wolf. While in rural areas, we assist to a growing hostility due to a psychological constraint in the daily life of herders. This is because the negative impacts of psychological conflicts on stakeholders are not well studied and therefore tend to be less recognized than other types of impacts that may arise from human-wildlife conflicts.

Therefore, the questions of my presentation were:
How can we reduce human-wolf conflicts and encourage human acceptance?
What kind of benefits could come by a changed behaviour?

To reply to these questions it is fundamental to check the effects of the media on the general knowledge of the large public towards the wolf and understand the true causes behind the hostility we can observe in rural areas. It is necessary to explore the causes of poaching, and of the violence expressed against this animal – as seen in several cases in Tuscany and in other areas. The reaction of the people to the presence of the wolf, before even any conflict case, demonstrates that in wildlife management the human dimension holds a fundamental role, which needs to be explored, in order to develop an effective and shared management. The social attitude of a community and the personal attitude of people are very important features to take into account before planning any intervention or conservation measure.

People want to be involved in the decision process and participate to the management of wildlife in their areas. This is the main aim of the ALPBIONET2030 project (Alpine Space Program), and of the WP5 "Human – Nature Coexistence". ALPBIONET points at implementing and improving the ecological connectivity of the Alps and at improving the relationship of humans with their natural environment, including wolf, other large carnivores and ungulates. The issue of human-wildlife conflict is growing in the researchers' interests; because only through the analyses and the transformation of the root causes of systemic and structural wildlife-social conflict it is possible to implement the broader mission of conservation and coexistence. Social scientists should join wildlife managers in order to evaluate wildlife acceptance capacity and management actions aimed at changing human behaviour (providing long-term solutions to human-wildlife conflicts). NGOs and the government should provide reliable and more accessible information in order to raise people knowledge, awareness and social acceptance, fighting fake news and sensationalism.

Finally, it is important to provide rural populations the arguments about the socioeconomic importance of wolf return and cooperating with them sustaining, at the same time, wildlife-tourism viewing for nature-seeking tourists and the protection of human economic activities.

11. Wolf Situation in France and protected areas experience

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Natural Reserves of France | France

Wolf situation in France:

- Nov. 1992: First observations of wolves coming from Italy into Mercantour National Park.
- Rapid population extension in major part of French Alps, then in Vosges and Massif Central.
- 45 Permanent areas of presence (PAP) in winter 2015-2016, 35 wolf packs, the number of PAP doubling each 5 years during the first 20 years in the French Alps. About 250 to 300 wolves and a connection with the Italian population. In 2015 some genetic observations at the border France-Germany seem to show a potential connection with East European populations.

Public actions on farming activities:

- 1993: A first program of observations started in Mercantour National Park, with damage compensation, and grants for shepherds.
- 1997-2002: Two LIFE programs with observation methods, mountain pastures diagnostics, creation of "wolf network" in observation, protection measures, pastoral technics, national strategy on protection shootings.
- 2003: Protocol of graduated "intervention" (scare methods, protection, then different types of "fights").
- 2004-2012: Two successful national wolf plans define wolf graduated intervention for protection and overriding samples in regards of damages and number of wolves. Shooting wolves is fixed at 10% of the population increase.
- With the 3rd wolf plan a deeper method to estimate risks of mixing of wolf populations is drawn up. In 2015-2016 overriding samples are fixed at 36 animals each year (probability of 40% population decrease, 60% increase).
- For the preparation of the 4th wolf plan 2018-2023 the Minister of Environment has ordered two scientific expert studies: on long term viability conditions for wolf populations, as well as on sociological, cultural and ethnological aspects. Four workshops for action programs have also been held on: livestock protection, territorial typology and extending areas of presence, management tools.

Governing methods:

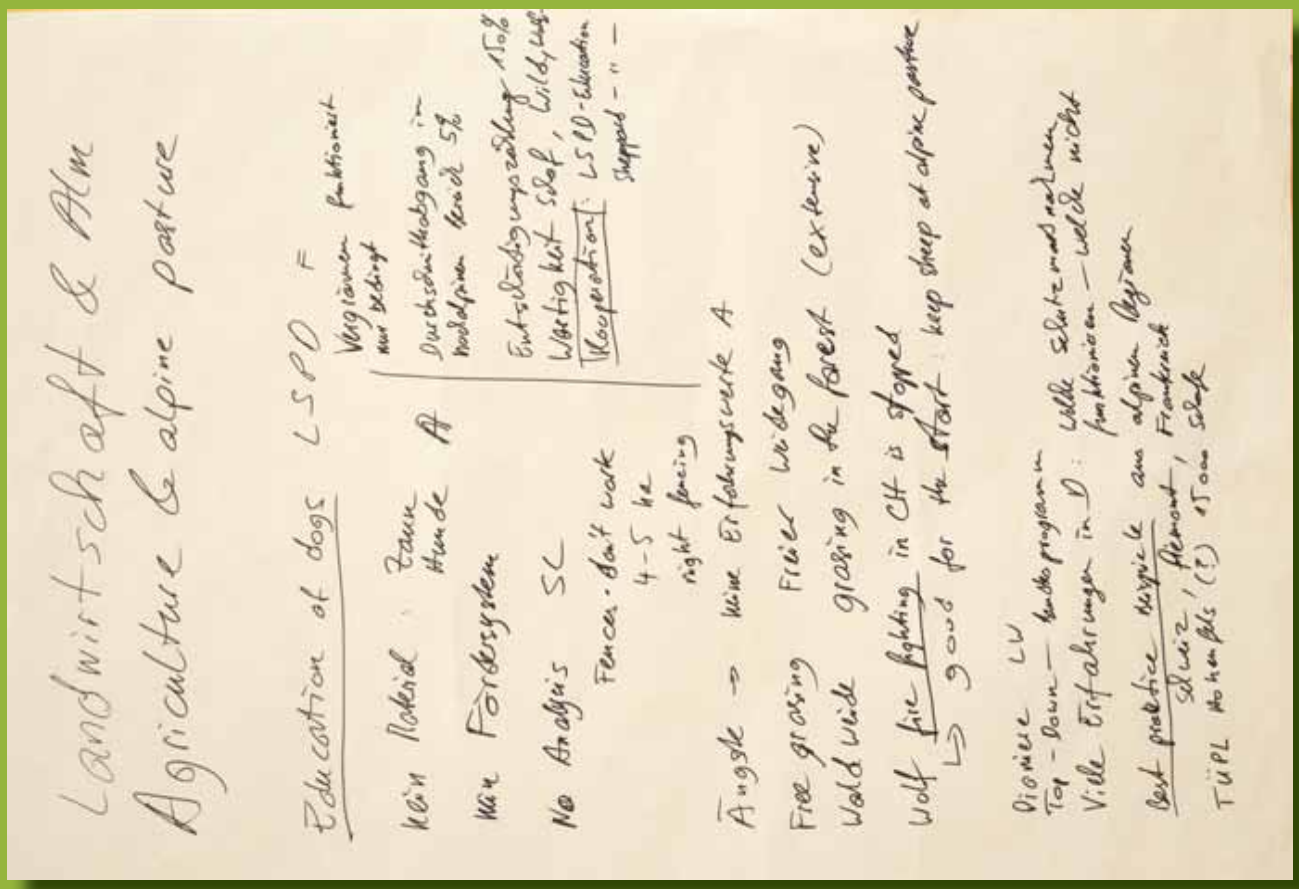
- National Office for hunting and wildlife (ONCFS) is in charge of observation and damages reports: formation of 1200 observers for the wolf network, establishing of tracking methods.
- National wolf group: is the instance of concertation of the Minister of Environment with all partners concerned by wolf program.
- Territorial groups for local action under the local government authority.
- Financial subsides for action: 2012: 8 M€, 2015: 19 M€, 2016: 23 M€ from Minister of Agriculture and Europe CAP. Grants for livestock protection (protection dogs, enclosures, pastoral huts, shepherds), and damage compensation.

- Intervention protocol:
  - Physical protection measures are necessary before all intervention.
  - Graduated intervention: Prefectural authorisation of shooting delivered to farmers and shepherds or trained hunters under ONCFS control. Scaring for temporary need (colonisation zones); then individual protecting shootings on the pasture site; then “reinforced shootings” with several shooters extended to the proximate zone; finally samples when damages are recurring.
  - An intervention brigade from the ONCFS has been established for local support in the Alpes-de-Haute-Provence and Alpes Maritimes departments.
  - First years the protecting shootings were not efficient, but last years the shooting national quota has been reached (36 wolves sample).

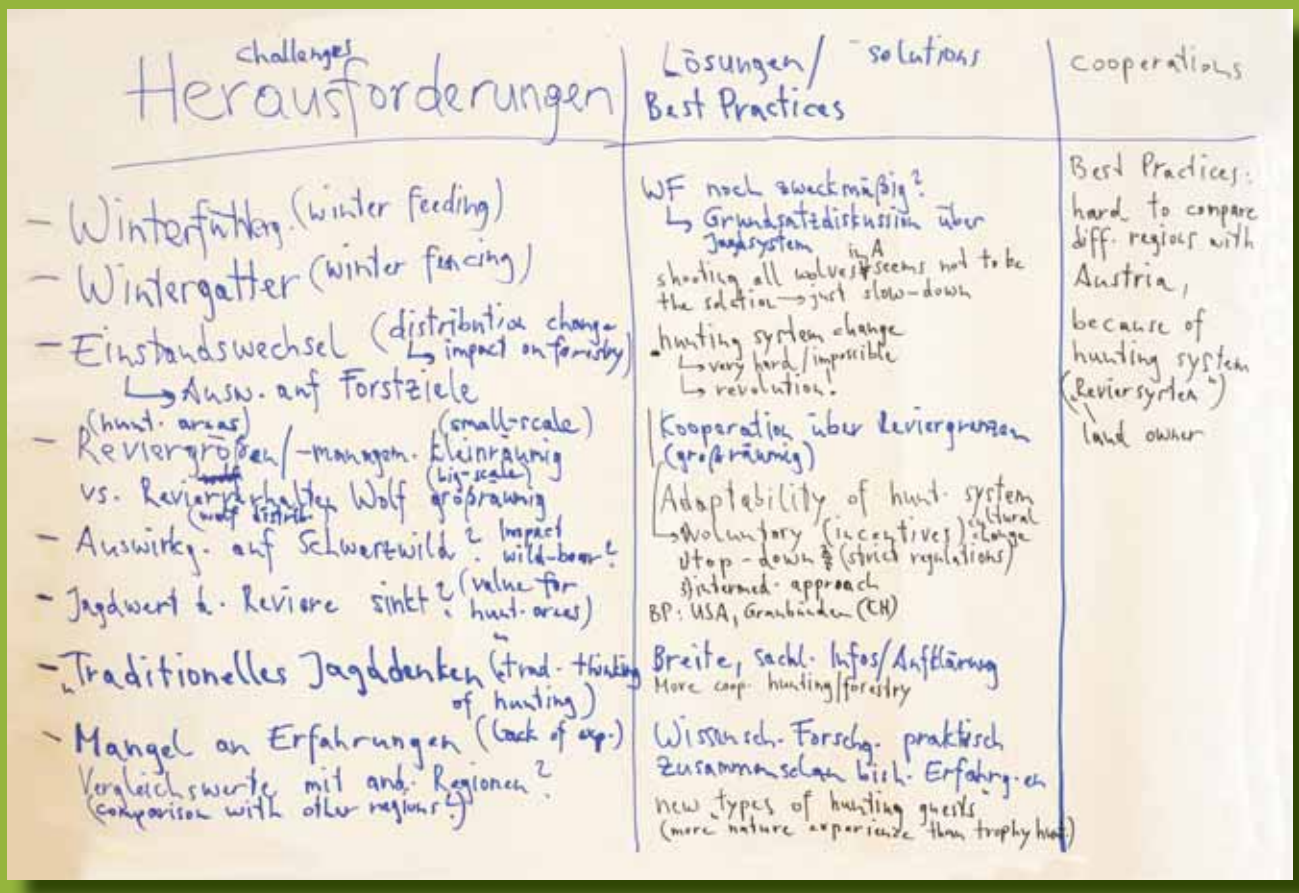
Situation in protected areas:

Several protected areas are concerned by wolf presence. The national wolf plan prohibits shootings in national parks and natural reserves, so the situation is often sensitive with farmers and elected representatives. Discussions are held in agriculture instances of protected areas. Nature guards help shepherds with damage reports, seeking for lost sheep, or enclosure installations. They participate in national wolf group with observations. Parks provide heli-logging huts for shepherds. Protected areas can be regions of experience on protection and scaring systems, evaluation of pasture sensibility for wolves, and scientific studies.

Workshop results



ALP HUSBANDRY



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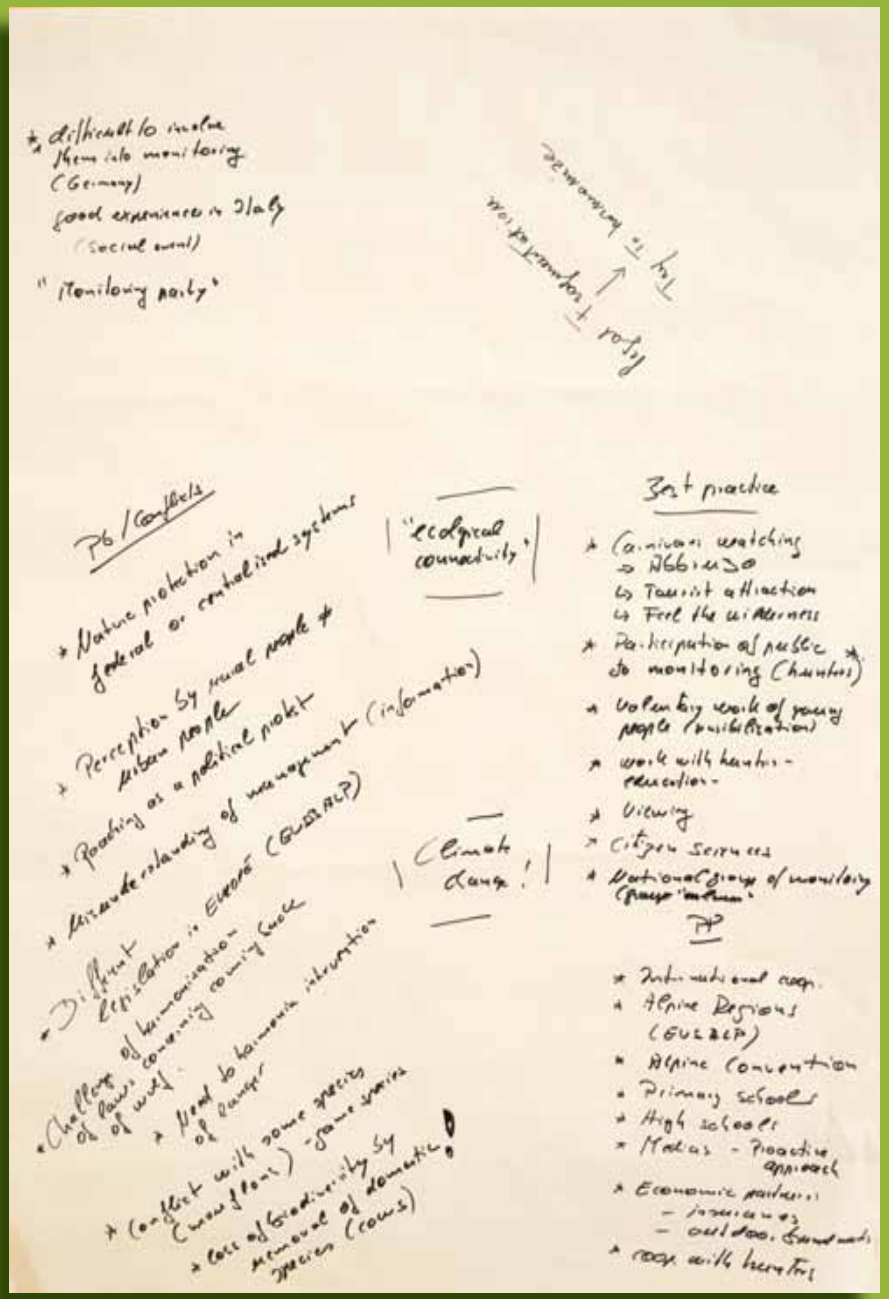
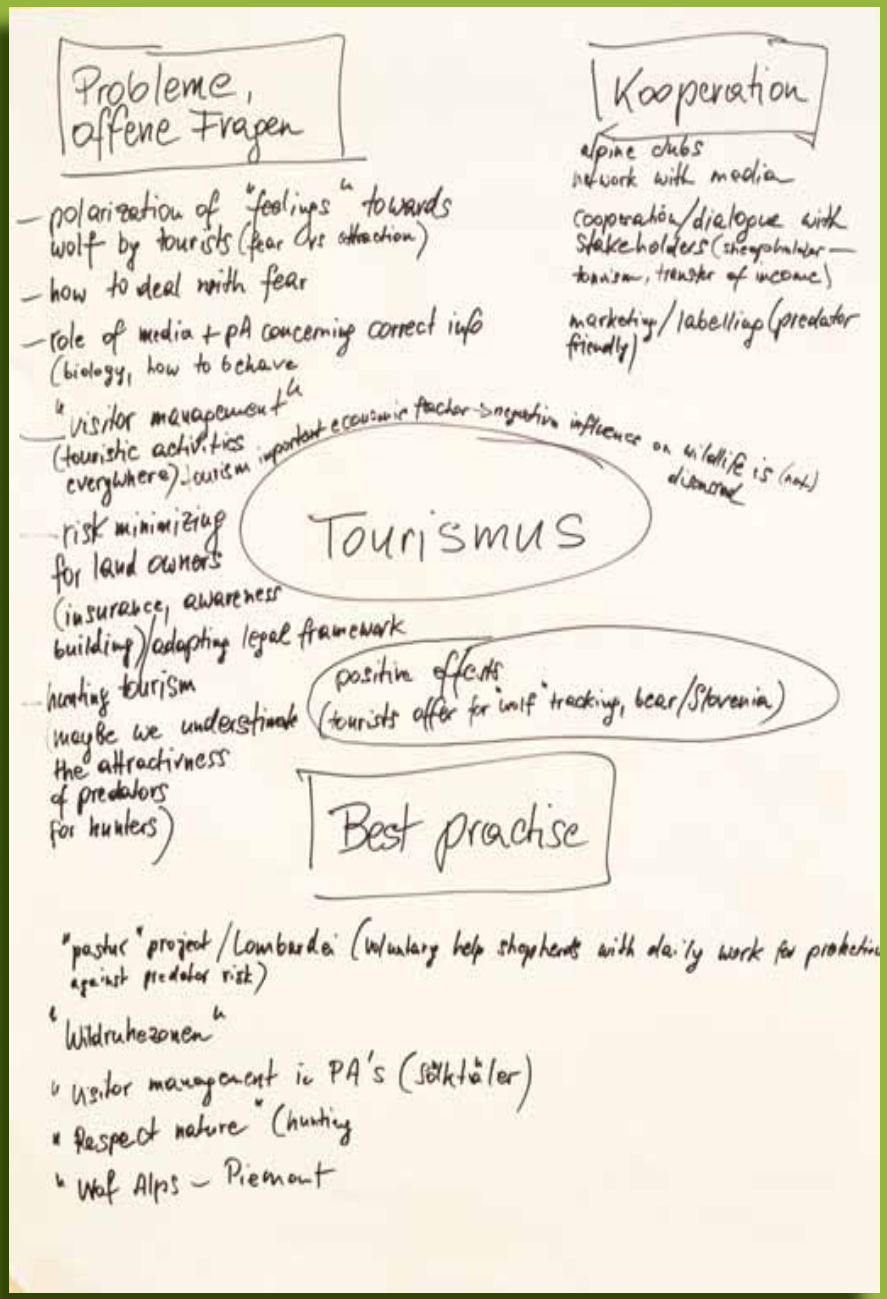
NATURE PROTECTION



TOURISM



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