Final Draft

for a

Conservation Strategy for Brown Bears in the Alps

(For Internal Discussion)

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Client
WWF Austria

On behalf of WWF Alpine Program and WWF Germany

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1. INTRODUCTION

National WWF organizations have agreed to align their conservation work for Brown Bears to shared pan-alpine priorities. Their strategy for Brown Bear conservation provides directions for the future management of Brown Bears in the Alps.

This document is based on scientific evidence and addresses technical, biological and political challenges on a strategic level. In addition it may be useful as a framework for evaluating existing national management plans. The strategy puts emphasis on actions to be taken by WWF and encourages others to participate.

The final version of this document shall be made available for the public after a consultation periods within WWF and additional feedback from other partners.

2. EXECUTIVE SUMMARY

The Pan-Alpine Brown Bear Conservation Strategy is a science-based document to which national WWF organizations agree to align their national conservation strategies for the management of Brown Bears in the Alps. The strategy outlines goals and actions to be taken by WWF and encourages others, such as NGOs, authorities, and interest groups to participate in the common effort.

The PABBCS promotes a 30-year vision and corresponding long-term goals. The ultimate goal is to have of a viable alpine Brown Bear meta-population of several hundred bears in a favourable conservation status and connected with the Dinaric population, while the administrative framework and adequate legislation ensure that conflicts with human interests are managed pro-actively. The successful recovery of Brown Bears in the Alps is honoured as an international role model for wildlife management.

In the final vision, the Alpine Brown Bear population will be composed of geographically distinct but not isolated subpopulations. Establishing such a meta-population will help to conserve the genetic variability in ist smaller subpopulations and be instrumental in the constitution of a common genetic pool.

The 30-year time frame helps to build strong public support. The transition to a co-existence with bears will happen within one human generation and thus for the coming generation living with bears will be the norm. In addition a time frame of 30 years allows people ample opportunities to adapt to the presence of bears and implement best practices for land use and damage prevention.

The public confidence in the bear conservation efforts will be aided greatly by a confident leadership and the strategies´ resilience to failure. Shortening the transition to a 30-year time span means reducing the critical time in which the bear population is most vulnerable due to its small numbers and bear management during conflicts has to juggle with the critical support of concerned interest groups and the impact on bear population growth. Implementing mandatory mitigation actions for any instances when bears are lost from the population add further to the resilience of the recovery efforts and to the public support for a steady progress.

The PABBCS is based on the current state of scientific knowledge and acknowledges the variety of positions in the public discourse. Relevant background information is presented in a concise manner. The document presents an overview on bear biology, the status of bear populations in Europe, the legal status of bears and relevant legislation including international conventions and agreements, and national legal frameworks. The strategy embraces lessons learned in past bear management and analyzes future threats and opportunities. Based upon these fundamentals the PABBCS presents goals which are organized on an incremental time line, outlining expected results after 2, 5, 10, 15, 20, and 30 years. Those goals are broken down into strategic objectives and proposed activities.

While the strategy has been largely developed in internal discussions with WWF staff the strategy emphasizes that the mission can only be accomplished if several actors collaborate. For this reason a short list of key potential partners for the implementation of the PABBCS has been added. Therefore the strategy should be viewed as a basis for negotiation with other interest groups rather than a final directive that is written in stone.

3. VISION

In 30 years time from now people in the Alps value bears as regular part of their natural environment. The alpine Brown Bear population is viable and in an overall favourable conservation status, present in all suitable habitat and connected with the population of the Dinaric mountain range.

Bear management is pro-active and consistent on a pan-alpine level. It delivers appropriate solutions both for ecological challenges and conflicts with human interests on pan-alpine, national and local level. Political and administrative decisions, land use planning and legal framework ensure bear habitat is preserved and bears are kept wild by regulating human activities that could have a detrimental impact on bear behavior, such as food-conditioning or habituation.

The successful recovery of Brown Bears in the Alps is honored as an international role model for wildlife management.

A side note

We are convinced that the recovery of the Pan-Alpine bear population is an honorable task.

With the fore mentioned vision we designed an ambitious goal.

We envision that we will activate many voices to take part in this important discussion. There will be different opinions on whether milestones we propose will be achieved and whether they will be achieved in the proposed timeframe.

We know that this mission can only be achieved if all concerned interest groups collaborate in a respectful manner.

We encourage everyone to share his view and we look forward to this exchange.

Our past does not determine our future. The future is wide open.

4. GOALS

The ultimate goal for the conservation of the Brown Bear in the Alps is a viable meta-population in the Alps and in the Dinaric mountain range: a Brown Bear population composed of different subpopulations, some even geographically distinct, but not isolated thus allowing an exchange of individuals by natural migration. Establishing a meta-population will help to conserve the genetic variability in smaller subpopulations and the constitution of a common genetic pool although the bear population is not necessarily contiguous. With this concept we also take into account that some areas in the pan-alpine range are less suitable for bears either because habitat is degraded or the human society regards conflicts with other interests as intolerable.

In order to establish a meta-population the migration between all geographically distinct sub-populations must be enabled. Connecting the Alpine population with the population in the Dinaric mountain range is essential.

Experts agree that several hundred bears would establish a viable population in the Alps. A number of scientific assessments that compare Alpine landscape with other bear habitats strongly indicate that the Alps provide enough suitable habitat to even sustain a substantial higher numbers of bears. This strategy proposes a total population of at least 500 bears for the pan-alpine region.

Similar strategic goals – both in content and bear population numbers - have been discussed by various experts and institutions in the past. This strategy aligns these goals for the whole Alpine habitat and adds a time line. In addition it affirms the ongoing commitment of WWF to continue working toward a viable bear population in the Alps.

With regard to public support for a co-existence with bears in the pan-alpine region a vital bear population shall be established within a time frame of 30 years. This time frame helps to build strong public support. The transition to a co-existence with bears will happen within one human generation and thus for the coming generation living with bears will already be the norm. In addition a time frame of 30 years allows people ample opportunities to adapt to the presence of bears and implement best practices for land use and damage prevention.

The public confidence in the bear conservation efforts will be aided greatly by a confident leadership and the strategies´ resilience to failure. Shortening the transition to a 30-year time span also means reducing the critical time in which the bear population is most vulnerable due to its small numbers and bear management during conflicts has to juggle with the critical support of concerned interest groups and the impact on bear population growth. Implementing mandatory mitigation actions for any instances when bears are lost from the population add further to the resilience of the recovery efforts and to the public support for a steady progress.

First Milestone:
Strategy Endorsed by WWF Alpine Program Partners and WWF Germany

Experts of national WWF organizations from Austria, Italy, France, Germany, and Switzerland have been involved to develop this pan-alpine bear conservation strategy. A first milestone will be the presentation at the steering committee of the WWF Alpine Program. National WWF organizations with the Alpine Program and WWF Germany will have to decide whether they want to provide the resources to promote this strategy and win the support of partner organizations.

2-year prospect

A mutual understanding about key factors for success and short comings of past bear projects has been achieved between key partners and focus interest groups. Monitoring for ecological (such as bear numbers, sex ratio, habitat suitability), economical (damages, prevention cost, related business opportunities) and social trends (such as values, knowledge, and attitudes of focus groups; number and type of human-bear conflicts; public perception and media coverage of bear recovery efforts) with critical relevance to bear recovery is established.

NGO and GO organizations of Alpine countries with bears present or migrating through have mutually agreed upon assessing the local and national management as well as requirements for the international collaboration in bear management on a pan-alpine level. Suitable areas for bear recovery projects in the Alps are identified and the level of acceptance of bears by local people and focus groups is assessed to be sufficient for these areas.

Slovenia continues to report a favourable population status for their alpine and continental bear occurrences in their article 17 report under the FFH directive for the year 2012.

5-years prospect

A majority of local residents in the core areas of the populations consider bear presence consistent with land-use and human interests.

All alpine countries have amended the national and provincial administrative framework, and relevant management plans to harmonize bear management. Italy, Slovenia and Austria have mutually agreed to establish and protect a suitable migration corridor between Alps and Dinaric mountain range. Slovenian bear management and hunting regulations take requirements of the Alpine bear recovery into account.

At least two recovery efforts in the Alps are operational, their populations show a growing trend, and their combined total is exceeding a number of 50 bears. Individual bears are

migrating from core areas of these populations towards neighboring areas. Natural dispersal of bears from the Dinaric mountain range into the Alpine region adds further bears.

10-years prospect

At least two thirds of residents in the Alps support the presence of bears in the Alps.

Italy, Slovenia and Austria have identified and legally protected a suitable migration corridor between Alps and Dinaric mountain range. Protocols, capacities and funding for a harmonized pan-alpine bear management are established.

The combined total of the Alpine bear population has grown to more than 79 bears. In the year 2018 Slovenia reports a favourable population status in its article 17 report under the FFH directive to the European Commission. Italy, Austria, and Germany report a relatively improved conservation status with expanded range and higher bear population numbers compared to the year 2006. Switzerland provides a voluntary report which is indicating a similar relative improvement.

15 years prospect

At least three out of four people living in the Alps support the presence of bears in the Alps.

The combined total of the Alpine bear population has grown to more than 126 bears. Alpine and Dinaric bear populations are connected with a migration corridor and low numbers of male and female bears are dispersing from southern to northern areas of the meta-population.

In the year 2024 Italy, Austria, and Germany report a relatively improved conservation status compared to the year 2018 with expanded range, higher population numbers and favourable future prospects. Switzerland provides a voluntary report which is indicating a similar relative improvement. Slovenia report a favourable conservation status for their respective Brown Bear occurrences in their article 17 report under the FFH directive.

20 years prospect

At least three out of four people living in the Alps support the presence of bears in the Alps.

Land use and spatial planning in all Alpine countries is reflecting requirements for the conservation of large carnivores. Alpine and Dinaric bear populations are connected with a migration corridor and steady numbers of male and female bears are dispersing to other areas of the meta-population.

The combined total of the Alpine bear population has grown to more than 199 bears. Brown Bears are present in Slovenia, Austria, Italy, Switzerland, and France. All countries report a

relatively improved or favourable conservation status and favourable future prospects for their respective Brown Bear occurrences in their article 17 report under the FFH directive.

30-years prospect

At least four out of five people living in the Alps support the presence of bears in the Alps.

The combined total of the Alpine bear population has grown to more than 500 bears. Alpine and Dinaric bear populations are connected with a migration corridor and steady numbers of male and female bears are dispersing from one area to the other.

Slovenia, Austria, Italy, Switzerland, and France report a favourable conservation status for their share of the Alpine Brown Bear population in their article 17 report under the FFH directive.

5. STRATEGY

The Pan-Alpine Conservation Strategy Brown Bear Strategy is to

1) Promote a pan-alpine perspective on bear management, with information sharing and mutual decision making, accorded planning, cross-border monitoring and combined efforts to provide adequate financial resources.

2) Start the recovery of the Alpine bear population with the greatest founding population possible to reduce the time span for recovery and to quickly leave behind the less resilient start phase;

3) Adjust the speed of the recovery program to human dimensions such as public support for co-existence with bears, growing awareness for bears and implementation of damage prevention methods, and the capability of the bear management;

4) Regularly evaluate the progress and adjust the management in order to improve the overall performance.

6. STRATEGIC OBJECTIVES AND ACTIVITIES

a) Protect and Restore Critical Habitats

Improve Spatial Planning

Improved spatial planning on local, regional, national and international level would assist to protect and restore critical habitat for bears and reduce potential conflicts. In bear habitat the potential impact of new and existing infrastructure on bear habitat should be assessed. Touristic and recreational activities that result in substantially increased human activity shall not disturb or degrade important bear habitat or important migration corridors between habitats. For linear infrastructure such as roads, rails or power lines mitigation measures and state of the art design is mandatory to not isolate habitat or create barriers in migration corridors.

Proposed Activities:
WWF will lobby for norms that make improved spatial planning mandatory. Authorities have to adapt spatial planning requirements on local, regional and national level.

Identify and Establish Migration Corridors between Subpopulations

In western parts of the Alps migration corridors for bears still have to be identified while several studies have identified such corridors in the eastern Alps. The EU funded project LIFE2003NAT/CP/IT/000003 identified eight potential migratory corridors, another study at the Italian University of Udine mapped corridors in the Friuli region. Now activities have to be coordinated to restore or maintain the integrity and functionality of these ecological corridors. Experts agree that three corridors are of special importance.

Retic Triangle/Brenner Corridor

The Reschenpass and the Brenner Pass are important ecological corridors between Austria, Switzerland and Italy connecting the Brown Bear habitat in the provinces of Trento and Bolzano with potential habitats in Tyrol, Switzerland and southern Bavaria (RAUER et al., 2001; CORSI et al., 1998). The corridor is mainly situated on hillsides with extensive forest cover for large portions. The quality of the corridor is negatively impacted by the dense technical infrastructure in the Inn valley. Apart from that large segments of that corridor are

intact. In its southern part the corridor is connected to other migration corridors towards Slovenia (see Carnic Corridor).

Koralm Corridor

Austria and Slovenia are connected by the Koralm Corridor. This corridor is mainly situated in forested areas. Dense infrastructure along the Mur-Mürz-line has a negative impact on this corridor. Apart from that, the quality of this corridor is described as good. This corridor connects the Ötscher mountain range – one former core area of Austria´s bear population at the border of Styria and Lower Austria – with Slovenia. (RAUER et al., 2001; CORSI et al., 1998).

Carnic Corridor

The Carnic Corridor is an important connection between Italy and Slovenia. As it is the same for the eastern Part of the Brenner corridor, this area is the connection between Brown Bear populations in Trentino and in the border area of Slovenia/Austria (Carinthia).

Proposed Activities:
WWF will initiate projects to restore corridors that are vital for the bear meta-population and for the ecological network of the Alpine eco-region. Authorities have to include these ecological corridors into their spatial planning on local, regional and national level.

Facilitate Retreat Areas for Brown Bears

Land use in the Alps shows characteristic contrasts such as densely populated valleys in contrast to solitary mountain tops. Various forms of land use such as infrastructure, agriculture and tourism, is intensified in valleys. WWF Austria and the University of Vienna identified 15 potential wilderness areas in the Alps by using GIS based analysis. Although such designated wilderness areas in Europe usually tend to be too small to provide enough habitat for the home range of an individual bear they may serve in two other purposes. The managing organization of the wilderness area may facilitate forms of land use that is compatible with the requirements of bears in the greater region and the wilderness area itself may provide some special features which are harder to find in alternated landscapes, such as dens or remote retreat areas without access roads.

Proposed Activities:
WWF will initiate projects to restore the corridors that are vital for the bear meta-population and for the ecological network of the Alpine eco-region. Authorities have to include these ecological corridors into their spatial planning on local, regional and national level.

Embrace Habitat Requirements for Bears in Large Scale Land Use

Experts agree that forage supply, thermal cover and security are important habitat requirements for bears as well as access to potential mates during the breeding season and intra-specific (social) interactions. Furthermore the presence and activities of people have impact on home range selection. All those factors are influenced by the large scale human

land use. Agricultural and forestry practices should be adapted that embrace those requirements to a certain degree. As bears are flexible in their behavior and adapted to spatial and seasonal shifts in habitat quality a mix of relatively degraded and more suitable habitat seems acceptable. The situation will be eased in many areas by the very topography of Alpine regions. A similar approach could be considered for temporarily restrictions for touristic or recreational use of bear habitat.

Proposed Activities:
WWF will initiate projects to identify and present best-practices for agriculture and forestry in bear habitat. Partners in agriculture and forestry should collaborate in the analysis and later adapt these principles into their management. Authorities should foster legal norms which protect those habitat requirements.

b) Improve Bear Management and Capacities

Strengthen International and Pan-Alpine Coordination and Cooperation

In recent years some young male bears (JJ1 and JJ2, JJ3 and KJ2G2) migrating from Italy to Austria, Germany, and Switzerland clearly demonstrated the necessity of international coordination in bear management. Today there is a clear consensus among GO´s and NGO´s that the Alpine bear population can only be restored and managed in a cooperative effort among Alpine countries.

This requires coordination between the organizations responsible for and involved in wildlife conservation in the different countries. In the future, the Alpine countries should further combine efforts, share resources, and develop trans-boundary guidelines for the conservation and management of the Brown Bear.

Coordination should address sharing of information, standardizing monitoring, maintenance of common databases, and harmonizing management. Regular meetings should be held to share new information and align management decisions.

Proposed Activities:
WWF will lobby for a body or forum which helps to co-ordinate management activities on Brown Bears at an pan-Alpine level. WWF will encourage European and global players to

Foster Professional Exchange

Many bear recovery projects have been funded by the European Union and encouraged to share experiences and benchmark their progress within the community of EU-funded bear recovery projects. This exchange with bear projects in other parts of Europe was beneficial

for the projects and should be carried forward on a regular basis regardless of the funding sources. The same approach should be extended to improve professional collaboration and exchange on a global level.

Proposed Activities:
WWF will encourage European and global players to share their experiences in the global community of large carnivore conservation programs.

Establish a Detailed and Standardized Pan-Alpine Monitoring

The importance of closely monitoring small populations of Brown Bears cannot be overemphasized as their sensitivity to negative impacts is a critical factor for failure of conservation efforts. It is pivotal to have a sound knowledge of population numbers and other parameters that affect the recovery efforts.

It is immanent in the early stages of recovery programs that population numbers are low and losses of individual bears may have disastrous effects. Therefore a detailed and incessant monitoring is of utmost importance in the early stages of recovery programs. The public awareness of such a detailed monitoring program has further implications as it serves as deterrent for sabotage (poaching) and builds trust in the recovery program.

Monitoring should be established for ecological (bear numbers, sex ratio, habitat suitability), economical (damages, prevention cost, related business opportunities) and social (conflicts, attitude, knowledge, values) trends with relevance to bear recovery.

Monitoring methods in all Alpine countries should be standardized to make results comparable and information consistent.

Proposed Activities:
WWF will support monitoring efforts and the development of a publicly accessible pan-alpine database. Partners in research institutions have to adapt common protocols and methods for their national monitoring efforts. Authorities should foster legal norms which support monitoring efforts by granting research staff access to bear sites, provide public funding and govern the access to the monitoring database.

Establish a Centralized Database for Pan-Alpine Bear Population

Authorities and key actors in bear management must have easy access to up-to-date monitoring results. For privacy reasons and important bear management objectives some information may have to be held confidential; however, the general monitoring results should be made available to the public. A policy should be designed and implemented to regulate the process of publication of data and public access to the database.

Proposed Activities:
WWF will lobby for and support the establishment of a centralized database.

Harmonize Bear Management Protocols

Several Alpine countries have developed and implemented guidelines or concepts for the management of bears. In general they share accepted principles of conservation and wildlife management, but in many details they differ depending on the legal, social or economical situation in each country. Swiss concepts have legal character while other concepts – like the second edition of the Management Plan Brown Bear Austria – have the character of non-binding guidelines. In addition some differences exist regarding the response to specific bear behavior. The different background of the concepts notwithstanding harmonizing those management concepts would help to achieve a consistent and more effective pan-alpine bear management.

Proposed Activities:
WWF will lobby for harmonizing pan-alpine management protocols in order to achieve a consistent and more effective pan-alpine bear management.

Share Capacities for Bear Management.

Bear management capacities must be appropriate to deal with conservation efforts, monitoring, raising awareness, damage prevention, damage compensation, and other tasks. At present insufficient capacities hinder many of them. Involved staff should be provided with state of the art equipment and should be trained regularly to keep the specific knowledge up to date. One of the challenges in bear management is that a crisis may only happen once in many years but when it happens vast resources are needed. A solution for all these challenges could be found in sharing resources and building international teams.

Proposed Activities:
WWF will lobby for shared resources and pan-alpine funding in bear management.

Standardize Training and Protocols for Aversive Conditioning

Aversive conditioning is a challenging task that makes instruction und repeated training a necessity. With having a group of certified experts for aversive conditioning national staff shortages could be mitigated and total costs could be reduced.

Proposed Activities:
WWF will lobby for a certification of qualified people, a harmonized pan-alpine training protocol and hold at least one pan-alpine training session per year.

Evaluate and Utilize Lessons Learned of Past Bear Projects

In the first decade of the 21st century from augmentation project in the Northern Limestone Alps led by WWF Austria had a maximum densitiy of estimated 12 bears at a time, from 1998 to 2002 a total of 35 individuals were recorded in this region. In 2010 the head count for this region is estimated to be two male bears.

Some years after the Austrian bear project another restocking project in the Trento province in Italy has been started which has at present estimated 30 bears. Even though this project seems to be on track some recent developments indicate that new challenges are in advance. Local acceptance, conflicts, damage prevention and other areas of interest should be assessed and compared to Austrian and international experience.

Those assessments will show some specifics for each country. However, it is very likely that some general patterns for certain stages and management approaches of bear recovery projects can be identified. Those insights should be shared and discussed with NGO and GO partners involved in bear management.

Proposed Activities:
WWF Austria will share and discuss the assessment of international bear experts regarding the success and short comings of its past bear project in Austria. WWF Italy will assess the success and short comings of the bear project in Trentino. Relevant NGO and GO organizations of Alpine countries with bear presence should assess the local and national management and international collaboration in bear management on a pan-alpine level.

Assess policy context

The policy context for bear recovery programs should be assessed for each Alpine country and region of specific interest. The assessment should identify key players, their position and relation to proponents of the recovery efforts, types of conflicts that have occurred in the past and their relevance for the bear recovery efforts, values and attitudes of focus groups, how interest groups frame their concerns and expectations. The assessment would prepare a better understanding of barriers and benefits of bear recovery efforts. It would help to identify important tasks and possible solutions for negotiations between bear management and concerned interest groups.

Proposed Activities:
WWF will prepare an assessment for the national and pan-alpine policy context. WWF lobbies for collaborative efforts and proposes specific joint ventures with other interest groups.

Enhance the Viability of the Alpine Population through Augmentation

For a successful recovery of bears in the Alps and a sustained public acceptance a timeframe of 30 years for the recovery phase is recommended. In order to establish a vital Alpine bear population within this time frame augmentation projects are indispensable.

Any augmentation project needs sound preparation as outlined in the IUCN Guidelines for Re-introduction. Only after the key factors for success and failure of past bear projects are clearly understood and remedies are defined improved augmentation projects should be considered. One of the essential questions that must be pondered is the best location for a restocking within a pan-alpine perspective both from an ecological and human dimensions

view point. Other concerns are about genetics, the viability of source populations, impact on the specimen in the augmented population, and the number, age and sex of bears to be released. Public acceptance for the project is essential and as these projects proved to impact neighboring countries their consent should be an integral part of augmentation projects.

Proposed Activities:
WWF will lobby for one or two additional augmentation projects. WWF, as well as other relevant NGO and GO organizations should participate in the design and implementation of the projects.

Mitigate Loss of Bears from the Population

One of the obvious causes why the Austrian restocking program suffered a severe setback is the small number of bears in the starting population (Earlier estimates add up to less than 30 bears; newer assessments insinuate lower numbers around 20 specimen.). With such extremely low population numbers and a drastic shortage of female bears over long periods the statistical likelihood of a failed recovery are overwhelming. Such small populations are extremely vulnerable to disturbances such as management kills, random effects and sabotage.

In addition the grave consequences of losing bears from a small population complicate decisions regarding the elimination of problem bears. The elimination of one bear may seriously affect the viability of the population, especially if it concerns a female.

In order to counterbalance the negative impact on the population and to disburden the bear management in their decisions about problematic bears the substitution of lost bears and their expected reproduction should become mandatory. Thus for each lost bear one or more bears should be released in the following years. With this approach the expected growth of the population would be unaffected and the chances of success remain high. Such a policy would also serve as disincentive for intentional sabotage and poaching of bears. This proposal has further implications for the monitoring of the bear population, and those will be discussed in the specific section for monitoring.

Proposed Activities:
WWF will lobby for mitigation policies in bear projects.

Foster Trust and Cooperation with NGO´s and GO´s in Austria

The recovery of the Brown Bear populations anywhere in the world is a complex challenge due to various involved interests, the extended time scales and the high likelihood of setbacks in the early stages of recovery programs. Anyone agrees Austria suffered such a severe setback. The population numbers declined to the level before the first recovery efforts were undertaken, the trust between essential partners of the project has been stressed, public support is diminished, and resources may be harder to find than any time before.

However, some of the public and internal discourse over what had happened was misdirected. While it is essential to ask why the bear recovery project in the Northern Limestone Alps deals after all the years with only a few male bears it is of no avail to point

fingers and declare someone being the sole culprit. Behavioral science may explain why groups in distress situations rather spend time with finger pointing than focus on better understanding and mutually addressing the root causes of the dismay situation. Change management and communication practice show why it is imperative to restore trust and team spirit between NGO´s and GO´s at this point.

Due to the nature and state of the disagreement in Austria today conflict resolution techniques are recommended. With this approach the outlook for restored trust and cooperative attitude is positive. With a combined effort all involved parties would benefit from the experience and be able to improve future bear management.

Proposed Activities:
WWF will lobby for cooperation in all countries and take action to establish a Coalition for Alpine Bear Recovery. The coalition should seek to involve supporters and concerned parties. In Austria all involved parties should agree to embark on a conflict resolution process to find common ground, rebuild trust and foster future collaboration.

Prevent Habituation or Food-Conditioning

People have to manage bear attractants to prevent habituation and food-conditioning of bears. No food should be available to bears in or near human settlements. Waste management, composting and storage of food should be organized accordingly. Garbage dumps in a bear range must be inaccessible for bears. Feeding areas for bears or baiting areas must be located far from settlements and in areas closed to general human use.

Proposed Activities:
WWF will establish incentives for co-existence including capacity building programs for focus groups like hunters, life-stock keepers and decision makers of local authorities.

Prevent Damages

Prevention measures provide an efficient protection against bear damages. People in bear areas should be aware of possible prevention measures and take adequate measures to protect themselves. In case of frequent damages or imminent hazards in a specific area the concerned interest groups must rapidly be informed about necessary precautions. In order to keep damage compensation on a low level, damage compensation should be linked on the long-term with the implementation of damage prevention measures.

Bear advocates, damage evaluators as well as local authorities shall inform and in the case of actual bear damage, help with compensation procedure in the shortest possible time. Damage compensation is indispensable to ensure the goodwill of the society, in particular the local community. The costs for prevention and damage should not be imposed to affected parties but should be covered by the larger community.

Regulations and procedures regarding damage compensation have to be consistent on the pan-alpine area.

Proposed Activities:
WWF will raise awareness about best practice models for prevention and assist in setting up a compensation program. WWF will lobby for harmonizing compensation systems on a long term basis in all Alpine regions with regular bear occurrences.

c) Raise Awareness and Foster Commitment

Increase Public Awareness

Custom specific and timely information must be available for the public and concerned interest groups to make the Brown Bear conservation strategy successful. People living in or frequenting bear habitat should be informed about the presence of bears, and educated how to avoid food conditioning or habituation of bears. Custom tailored public awareness campaigns should be an integral part of any conservation program.

A specific awareness and education campaign should address children. Children of all ages are interested to learn about their natural environment. The engagement with these topics will influence their values and interests. In addition children have proven to influence awareness of their families.

Involvement of local interest groups should be fostered by applying a dialogue oriented communication style. A better understanding of attitudes and concerns of locals will help to improve bear management programs.

Proposed Activities:
WWF will deliver ongoing public awareness campaigns and specific education programs for children. WWF will foster local dialogue by supporting specific outreach programs for key regions.

Foster Commitment and Behavior Change of Critical Focus Groups

Commitment of local interest groups should be fostered by applying a dialogue oriented communication style and Community-Based Social Marketing. Research in behavior science shows that information campaigns alone often fail to change behavior. Community-Based Social Marketing tools have proven to be effective in changing specific behavior by creating commitment, using prompts, establishing social norms, and fostering social diffusion within focus groups.

Proposed Activities:
WWF will design and implement a Community-Based Social Marketing Pilot Program for selected regions and focus groups.

Address Poaching as a Special Case

There is plausibility that some individuals in Austria previously engaged in sabotage of the recovery efforts and poached bears. However, it is important to understand that these deeds cannot be positively addressed by a broad communication campaign. Such campaigns are relevant to the general public with average awareness and concern. They are not effective for highly specific circumstances of poaching. Here the strategy must not only understand attitudes and conduct of a specific focus group. First of all it must deal with individuals on the very extreme spectrum of their group and pay close attention not to offend the vast majority of the groups´ members. Instead of attacking the whole community the culprits should be singled out and prosecuted by the authorities.

Proposed Activities:
Hunting organizations are primarily responsible on setting social norms and enhancing internal social control within their community. Hunting organizations may be interested to collaborate with other organizations and WWF should encourage them to consider WWF as partner. WWF will offer support to and seek a mutual understanding with hunting organizations to identify how to collaborate in critical situations. WWF will seek a formal agreement with hunting organizations how they will take care of unacceptable behavior of hunters and how they will discourage poaching.

Identify New Business Models

Brown Bears related tourism attracts millions of tourists worldwide. However, tourism organizations in the Alps stated that their guests react either positive or negative. It is a worthwhile effort to compare successful international business models and discuss their market opportunities for the Alps.

Proposed Activities:
WWF will provide a comparative study to showcase best global practice models for successfully marketing new business opportunities based upon bear related tourism.

7. BACKGROUND

a) Bear Ecology

Food

Brown Bears are omnivorous and very flexible in their food selection. The digestive tract of Brown Bears corresponds to that of carnivores but the teeth already show adaptations to their mostly herbivorous diet. Green vegetation (grasses, herbs and leaves) are mostly eaten while tender, when the proportion of crude fiber is still low. As soon as the first fruits ripe, they form the major part of the diet: berries (blackberries, raspberries), fruits (apples, pears, plums, rowan berries) and seeds (beech-nuts, hazel –nuts, acorns, chest-nuts). Feeding stations for roe- and red-deer providing maize, apples or pellets can be used intensively by bears. Although bears are no distinctive hunters prey still provide a major source of proteins and energy. Bears feed on insects as ants, wasps and bees, and carcasses of ungulates which they systematically search in spring.

Activity

Similar to their flexibility with forage bears show flexible activity patterns both daily and seasonally. In proximity to intense human activity bears are often active during dusk and dawn, and during the night. In areas undisturbed by humans they are often also found to be active during the day.Bears usually spend the winter in a dormancy state that lasts a couple of months. In that state body temperature is lowered a few degrees, whereas heart and breathing rate is lowered considerably. Bears spend the winter in natural caves, beneath trees or in other shelters. Notably adult male bears sometimes spend warm winters actively roaming.

Reproduction

Brown Bears reach sexual maturity when three to four years old and can have a lifespan of up to 25 to 30 years. The young are born end of January or beginning of February while the mother is still in hibernation. Litter size ranges from one to four cubs. Cubs usually remain with their mothers for one or two years. Females have cubs every two to three years.

Homerange and Population density

Brown Bears usually live as solitary individuals, except for females accompanied by their cubs. Bears have large overlapping home-ranges which in areas of good habitat quality encompass 100 km² but can cover more than 1.000 km² in poor habitats. Male home ranges are in general larger than hose occupied by females.

Population density ranges from 0.05 to 20 bears per 100 km². In the core area of the Slovenian population – with artificial feeding - the density was estimated six to eight bears per 100 km².

Dispersal

Male and female bears show distinctive dispersal patterns: Young females usually settle in or close to their maternal home-range while young males disperse farther.

Competition

The only natural predators on bears in Europe are other male bears, wolves and eagles, all of them prey on cubs. The main competitor is mankind. Hunting, poaching and traffic collisions are the main causes of death.

Habitat Requirements

The ancient distribution of the Brown Bear in Europe illustrates its adaptability to various environmental conditions. Brown Bears occupied deciduous and coniferous forests, steppes, northern and alpine tundra – similar to what some of their relatives in North America do still today. However, presently most of its range in Europe is defined not by the quality of natural habitat but by presence of people and their acceptance of bears. Bears thus are often found in a `economically and socially defined habitat´ of lower economical productivity which are often landscapes with extensive forests or mountain ranges and associated with lower density of human infrastructure and lower human activity.

Generalization about ecological habitat requirements is somehow difficult as bears show an extreme range of behavioral adaptations to diverse environment. Experts agree there are some key requirements for bears: Forage supply, visual and thermal cover are important factors. Furthermore access to potential mates during the breeding season and intra-specific (social) interactions are relevant.

Presence and activities of people and especially the hunting or killing of bears have impact on home range selection. In areas where bears are subject to hunting and/or poaching security is a key factor and cover by shrub vegetation and forests is deemed an important element for survival. Here bears seem to prefer this type of habitat in their home range, although with reduced human persecution their present preference might decline over time.

Suitable habitats offer den sites with good thermal cover, which is often associated with remote areas and low human activity. Availability of dens in industrial, agricultural or otherwise heavily altered landscapes is often reduced. Furthermore disturbances by people in the denning season may force bears to leave their den and ultimately the area.

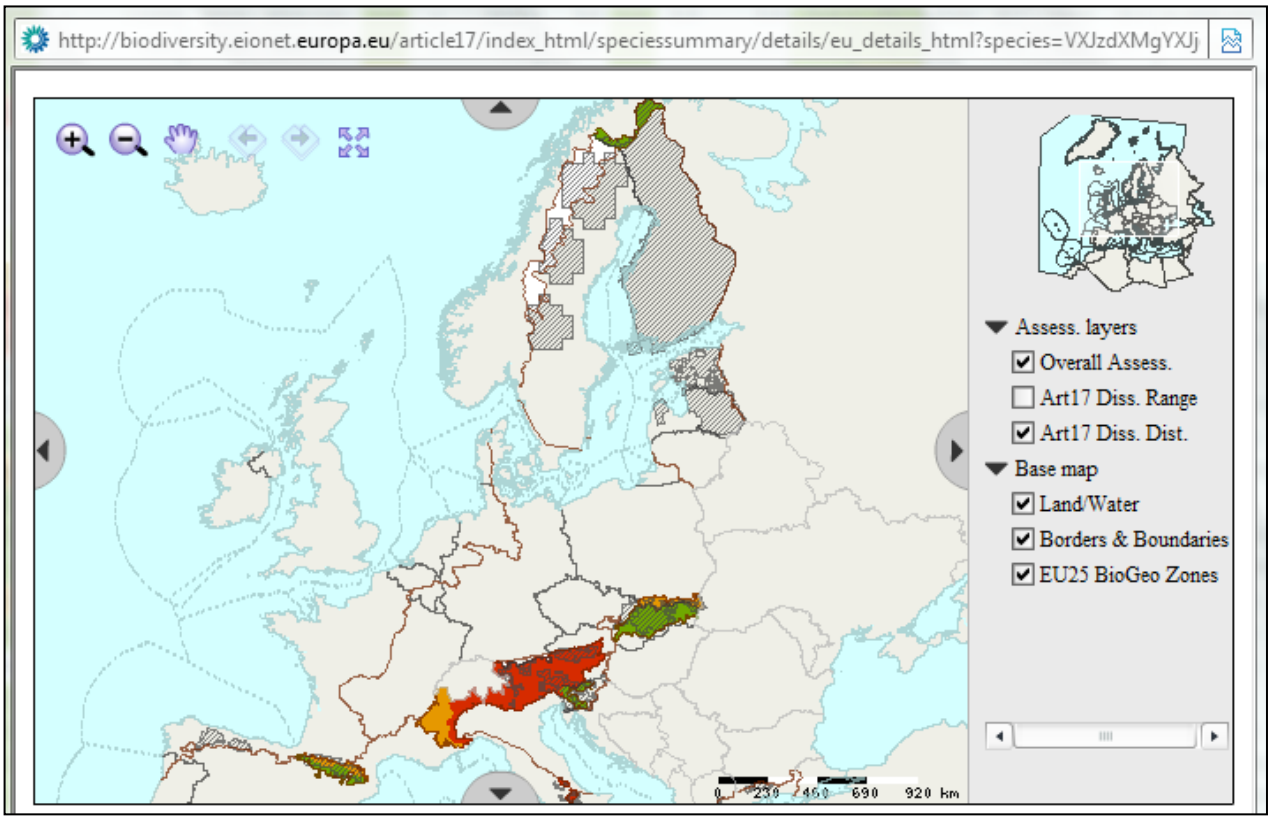
Bear habitat requirements must be understood at several spatial and temporal scales. Transient bears deliberately use specific landscapes on a seasonal basis. Both resident and transient bears select specific patches of habitat within landscapes. On the temporal scale shifting seasonal food supplies, annual food variance, and long term influences on habitat quality must further be considered.

b) Population Status in Europe

Brown Bears originally occurred throughout Europe, except from the largest islands such as Ireland, Iceland, Gotland, Corsica and Sardinia. They disappeared only in the last centuries from most areas as the human population grew and agricultural land use changed , and bears were perceived as threat for live stock. Those conflicts with human interests led to bounties which gave an additional incentive to kill bears and eradicate the populations. While bears were absent for several human generations animal husbandry abandoned traditional protective precautions. After the Second World War agricultural land use in Europe changed dramatically. In large portions of Europe formerly suitable habitat for bears was degraded due to deforestation and new forms of industrialized agriculture, and isolated due to infrastructure.

Today the total number of Brown Bears in Europe is estimated to be about 50,000 bears. The populations are often isolated and small: two relatively larger cover an area of ≥5000 km², three medium cover an area of 500-5000 km², one small population covers 100-500 km², and six very small populations cover less than 100 km². Only a few remnant or augmented populations exist in central Europe and it is important to keep in mind that small populations with less than a few hundred bears face elevated risks of extinction. Such small bear populations are to be found in Cantabrian Mountains (Spain), the Pyrenees (Spain and France), the Apennine Mountains (Italy), and the Alps (Austria Slovenia, Italy). In contrast to those small population is one large bear population neighboring to the south east of the Alps, stretching roughly from the Dinaric mountain range to Pindos Mountains in Greece.

Most Alpine countries recorded their last bears killed in the early 20th century. However, in Italy small populations of bears have survived in the Apennine and Brenta regions. In southern parts of Austria bears roaming from adjacent Dinaric areas have been spotted throughout the 20th century. These bears have been shot, until the public support for bears changed dramatically in the early 1970ies.



Proxy for Bear Distribution Map (Source: http://biodiversity.eionet.europa.eu)
(A new map is to be provided by WWF)

Overview for European Bear Populations

Cantabrian Mountains

The western Cantabrian bear sub-population stretches over 2,800 km², and the eastern one over 2,100 km², almost all of it is in protected areas or Natura 2000 sites. In the Cantabrian Mountains, bears have been decreasing during the 80's and the early 90's. From 1994 to 2007 the number of females with cubs of the year has doubled, this increase being more obvious in the western sub-population. In recent years, the area occupied by bears initially decreased followed by a recovery in both sub-populations. Nevertheless the area occupied as of 1989-92 had not been completely recolonized and the two sub-population are almost isolated. Both sub-populations are still critically endangered, mainly the easter one. (Juan Carlos Blanco, 2008)

Pyrenees

The Pyrenean Brown Bear population is found in a 1000 km² area located on both sides of the national border between France and Spain. However, only half of this area is used

regularly and the last documented reproductions occurred in 1995 and 1998. Experts classify the population as close to extinction, unless a population augmentation program is carried out.

Apennine Mountains

This isolated population is located in Abruzzo National Park and the surrounding area in the Apennine Mountains in Italy. An estimate yielded 70-80 bears in 1985. However, since a population decrease is considered to be likely today 40-50 bears may be a more realistic estimate. High numbers of bears have been reportedly poached in the last decades. Experts see very few chances for a connection between the Apennine and the Alpine population for the near future.

Alps-Dinaric-Pindos

This population range stretches from Alpine areas in the north to the Pindos Mountains in Greece in the south. The countries involved are Austria, Italy, Slovenia, Croatia, Bosnia & Herzegovina, Macedonia, Serbia, Montenegro, Kosovo, Albania, and Greece. The forested areas in these countries are not contiguous, separating to some degree the functional habitat into more or less isolated sub areas, although often there are still suitable corridors connecting the bear habitat.

While the total of the Alpine-Dinaric-Pindos population is estimated at 2,800 bears the size of the Dinaric portion is estimated to have about 300-700 individuals. New studies suggest the lower range seems more accurate.

In the Alps, the northern part of this range, bears have recovered habitat. After one male bear dispersed to Austria and settled in the Northern Limestone Alps three more bears were released in 1989-1993 into the same area. This sub-population grew to twelve bears – three of them female - before the population declined sharply with only two male bears remaining in 2010. Another sub-population in Trentino in northern Italy is a result of a recent restocking program with 10 bears brought in from Slovenia in the late 1990ies. The core area of the sub-population is still reflecting the restocking area and includes all western Trentino. In recent years young males from Trentino dispersed towards other areas in Lombardia, Veneto, Switzerland, South Tirol and Bavaria. The estimated total amount of the population is about 25-30 bears. The population trend in northern Italy is increasing. All Alpine populations are considered being a sub-population of Alps-Dinaric-Pindos-population as there is no sufficient population size and low numbers of female bears in the Alpine habitat. The importance of an influx of bears from the adjacent southern population and the suitability of the corridor between Alps and Dinarid Mountains cannot be overstated.

Rila- Rhodope Mountains

In south-western Bulgaria and north-eastern Greece three local populations in the Bulgarian Rila Mountains and Pirin Mountains and western Rhodope Mountains are connected on both sides of the national border. Of the total population of about 520 bears, only 10-15 are found in Greece. In the near future experts expect no further increase in range and population size.

Potential dispersal of bears to and from adjacent populations in Dinarids-Pindos and Stara Planina Mountains are discussed among experts.

Stara Planina Mountains

This population of about 200 bears is located between Zlatitsa-Teteven in the east to the Tryavna Mountains in west-central Bulgaria. It became isolated from the populations to the south and west early in this century, after efforts to exterminate the species. There may be some genetic interchange however, between the Stara Planina population and the Rhila-Rhodope population mediated through dispersing males. No further increase in range and population size is expected in the near future.

Carpathian Mountains Population

The Carpathian population includes the Brown Bears in Slovakia, Poland, the Ukraine and Romania. The total of the Carpathian Mountains population is the estimated to be about 8100 bears, the second largest in Europe. This population increased rapidly in the second part of this century and recently the Slovakian and Polish bear population was reconnected with the Ukrainian. This range expansion occurred rapidly, about 200 km in less than 20 years. Experts expect no further increase in range and population size as the population in the four countries has occupied most of the habitat that is deemed suitable for bears.

North-Eastern and Scandinavian Population

The North-Eastern European population is estimated to consist of about 37,500 bears, and is thereby the largest continuous Brown Bear population in Europe. Its range stretches from the west coast of Scandinavia to the Ural Mountains at the eastern border of Europe and continuous on the east side of the Ural Mountains making it the largest Brown Bear population in the world. The biggest portion of this population is living on Russian territory. Smaller portions are living on adjacent areas in Swedish, Norwegian, Finnish, Latvian and Estonian territory. The population in Scandinavia is estimated at roughly 2,500 bears and is considered by experts to be one of the most productive with a rate of 10-15% annual increase.

c) Legal Framework

International Legal Framework

Bern Convention: Convention on the Conservation of European Wildlife and Natural Habitats

The goal of the Bern Convention is to preserve wild living animal species and their natural habitats. Signatory states must pay special attention to endangered and potentially endangered species. The contracting parties shall take requisite measures to maintain the population of wild flora and fauna at, or adapt it to, a level which corresponds in particular to ecological, scientific, and cultural requirements, while taking account of economic and recreation requirements and the needs of sub-species, varieties or forms at risk locally. Protective measurements have to be included into planning and development. Awareness on the necessity of preserving wild animal species and their habitats has to be promoted. The European Brown Bear is listed in Annex II (strictly protected fauna species). Useful and necessary actions have to be taken to enhance the special protection of species listed in Annex II; especially forbidden is every form of capture, keeping or killing, deliberate disturbance, and the possession and trade with these species. The recovery of indigenous species has to be promoted, if a contribution to the preservation of an endangered species is thereby given.

Article 9 allows exceptions: A signatory state may authorize the hunting or culling of populations. In this case the state has to inform the Standing Committee of the Convention every two years stating the exceptions. The reason for allowing exceptions is the impact on the human interests. Exceptions can be granted under the following conditions: prevention of serious damages to livestock, culture and property; public health and safety reasons; use for scientific purposes, restocking and recovery. Norway and Romania have authorized exceptions in the past.

Article 22 allows restricting means or methods of killing, capture, or other exploitation for species listed in appendices I to III.

CITES: Convention on International Trade in Endangered Species of Wild Fauna and Flora

European Brown Bear species are listed in Annex II. This annex lists species which are not threatened by extinction, but could be potentially endangered, if the trade with specimen of this species is not strictly controlled. Thus for the export a specific permission is mandatory. This permission is granted, if, among other criteria, the export of specimen has no negative impact on the population; if the danger of injury, danger of health and cruelty to animals during the preparation for transport and during the transport can be excluded. For the import

in another EU country an additional permit is mandatory which can only be granted if a valid export permission exists.

European Parliament Resolution, 17.2.1989

The European Commission is asked, to promote programs for the protection of the Brown Bear in Europe and to continue existing programs. These programs should cover the whole area of the European Union. In return for protective measurements set by communities for the Brown Bear, actions for socio-economic development will be promoted. Systems for bear damage prevention and damage compensation are supposed to be developed. A connected net of reserves and specially protected areas should be established.

European Parliament Resolution, 22.4.1994

The European Commission is asked, not to support and finance spatial development with negative impact on bear populations. Actions with negative impact on bear populations should be corrected by the establishment of protected areas and corridors for genetic exchange. Measurements against killing and capture of bears and for the protection of bear habitat are supposed to be taken. Financial support for damage compensation and compensation for economic restriction due to bear conservation should be taken.

Council Directive 92/43/EEC, Conservation of Natural and Wild Fauna and Flora

The `Fauna Flora Habitats Directive´ aims to secure species diversity by protection of habitats and protection of species of wild fauna and flora. Actions have to be taken by the signatory states to preserve all species of wild fauna and flora in their habitats.

Regarding species the objective is to achieve a favourable conservation status. The conservation status will be taken as 'favourable' when population dynamics data on the species concerned indicate that it is maintaining itself on a long-term basis as a viable component of its natural habitats, and the natural range of the species is neither being reduced nor is likely to be reduced for the foreseeable future, and there is, and will probably continue to be, a sufficiently large habitat to maintain its populations on a long-term basis;

The European Brown Bear is a species of priority in the European Union. Specially protected areas for most Brown Bear populations in Europe are advised as they are listed in Annex II – with the exception of the populations of Finland and Sweden.

Annex IV lists Brown Bears as strictly protected species and thus capture, killing and deliberate disturbance is prohibited. Listing species in the Annex IV means that the Member States are obliged to establish a regime of strict protection for these species. Furthermore for Annex IV species the Member States are obliged to ensure that other activities will not lead to incidental killing or taking of specimens. Article 16 allows the killing of species which are

listed in Annex IV only in the absence of other satisfactory solutions. The member states are bound to ensure the conservation of species of priority by adequate actions. Areas which are significant for the conservation of priority species can be declared as area of common interest. The possession, transport and trade with Annex IV species are prohibited. Exceptions can be made for the prevention of serious damage to culture and livestock; public health, sanitary and safety reasons; for scientific, restocking and recovery purposes if they have no negative impact on the preservation of the species.

The directive specifies that every six years member states should provide a progress report for the EU Commission which should be made accessible to the public. Besides the assessment of the conservation status of the habitat types and species of the Community interest, the so-called Article 17 report includes information on the principal conservation measures applied in the Member State under the Habitats Directive including the measures of the species protection for the species listed in Annex IV and V.

National Legal Framework

Austria

Austria as a federal republic regulates some agendas on the federal level, some on the provincial level and some agendas are subject to agreement on both levels. Hunting laws as well as laws regulating nature conservation are in the exclusive jurisdiction of the nine Austrian provinces. Therefore bears in Austria are subject to nine different hunting and nature conservation regulations. Depending on the regulations of the province relevant regulations can be found in either regulations for hunting or nature conservation or in both. The legal situation of wild animals depends on whether they are considered game – if they are the species is listed in the hunting law. If they are not listed in the hunting law, they are subject to the conservation laws. Furthermore the provincial government or the local district authorities can be responsible for the implementation of the respective laws.

Today Brown Bears are listed as game in all provincial laws with the exception of Vienna. In Burgenland, Styria, Tyrol and Vorarlberg parallel regulations in both hunting and conservation law exist. In Vienna bear are merely subject to the nature conservation law.

In all Austrian provinces which regulate bears in their hunting laws there is no opening for hunting season or bears are listed as `not to be hunted´. No open hunting season is equivalent to a prohibition of killing a bear and often combined with a general prohibition of any hunting and trapping activities concerning bears.

Germany

German Federal Law for Nature Conservation (BNatSchG: § 10 / 2, No. 10 and 11) protects Brown Bears since the species is listed in Annex A of the EU Regulation (EG) No. 338/97 and Annex IV of the `Fauna Flora Habitats Directive´. § 42 BNatSchG prohibits taking, possessing and disturbing the species in the wild. In addition EU Regulation (EG) No. 338/97 (Art. 8 / 1) prohibits selling or purchasing parts and derivatives of Brown Bears. In Germany Brown Bears are not subject to the hunting law and thus to hunt bears is illegal.

Italy

The Italian legislation adopted the Washington Convention, Bern Convention, and Fauna-Flora-Habitats-Directive. Italy adopted the Washington Convention from 1975 in the national law n. 150/92; the Bern Convention was adopted with the law n. 503 of 5 August 1981 with Brown Bear listed in Annex II and thus being strictly protect; The Fauna-Flora-Habitats-Directive was adopted with D.P.R. n. 357 of 1997 and n. 120 of 2003 with the Italian populations listed in Annex II and Annex IV.

In Italy Brown Bears are fully protected by the hunting law of 1939. The law 157 (11 February 1992) includes Bear as “particularly protected species” and underlines the protection status, declaring that shooting, trapping or maintaining bears in captivity is illegal.

Italian bear management is to be directed by protocols PATOM for the Apennines and PACOBACE for the Alps. Both protocols have been prepared by the Italian Ministry of Environment and signed by the involved regions. However, implementation is pending.
Switzerland
Switzerland signed the Bern Convention. The Brown Bear in Switzerland is protected under the federal hunting law (JSV). However, in September, 2010, the Swiss National Council accepted a motion to pull out from the Bern Convention unless the protection status for wolves will be lowered. In 2007 the Bern Convention had already declined this request.

A national `Bear Concept´ being an application of the federal hunting law regulates bear management and details of the protection. In September, 2010, the Swiss National Council accepted a motion to adapt the regulations for wolves, bears and lynx making their regulation easier. Shepherds with a hunting license shall be entitled to kill wolves that are attacking their livestock. Upon a viable population of wolves is established in Switzerland elevated hunting quotas shall be decreed if damages on livestock are elevated and other protection measures have been unsuccessful.

d) Important Management Concepts

Ecological and Social Carrying Capacity

The carrying capacity of a given habitat is a concept to deduce the theoretical population size of any species that the environment can sustainably support without degrading the natural resources. In the case of Brown Bears most models use abundance of forage, climate, availability of visual and thermal cover, and seasonal shelter (denning opportunities) for the calculation of the `Ecological Carrying Capacity´.

Especially with bear management additional factors come into play which adds a crucial social or human dimension to the carrying capacity concept. To understand the `Social Carrying Capacity´ of a given habitat experts look also at the amount of potential conflicts between human interests and bears, the level of human acceptance for such potential conflicts, the legal status of the species and relevant bureaucratic processes, the attitude of people toward change and risk, the current set of social norms, values and interests, and the relation between social groups opposing or supporting the cause which have a strong influence on the general public or important focus groups. Obviously an accurate calculation for the Social Carrying Capacity of a given habitat is a difficult task and it is easier to track single components such as the acceptance. However trends described by the models allow better management decisions.

The main criticism for both these concepts are that individual factors of the equation are interrelated and their impact must not be one-dimensional, thus the reality is often much more complex than the models. For this reason the result of any modeling should be interpreted as a order of magnitude and subject to change over time.

Meta-Population

A meta-population is composed of different populations, which are geographically distinct, but not isolated from each other. The natural migration of individual specimen allows an exchange of genes. This exchange conserves the genetic variability even in relative small populations. Furthermore the meta-population is more resilient to stochastic effects that pose a threat to small populations. In the case of a declining or disappearing population the freed habitat can be naturally recovered.

e) Lessons Learned from Past Bear Management

Population History

Historically bear management, from data collection to management decisions, has been oriented on national boundaries and legal frames. In contrast we are convinced that for a strategic understanding for the recovery of bears in the Alps bear sub-populations should be reviewed as a continuous entity in their habitat, even if national borders run through the habitat.

In Austria two core areas of the bear population must be reviewed, each having a different history. One is located in the Northern Limestone Alps the other one in Carinthia, Styria and East Tyrol in the very southern region of Austria, bordering to Slovenia and Italy. Similar to the situation in Austria distinct areas of bear presence are also found in Italy. In the Trento region in the central eastern Alps an augmentation project has been launched. And in Friuli-Venezia-Giulia bears occur that have dispersed naturally from the Slovenian bear population.

From a strategic point of view these Brown Bear occurrences should be understood as three distinct geographical areas of interest in the East Alpine region: Firstly, the outskirts of the Dinaric population in the border triangle of Austria, Italy and Slovenia. Some individuals dispersed from the Slovenian area into north-west Italy (Friuli Venezia Giuli, Veneto and Trentino) others toward southern Austrian territory (Carinthia and Styria); Secondly, a few remaining individuals from a declined population in the Northern Limestone Alps in Austria which has been established by the reintroduction project in the late 1980ies; And thirdly, a growing number of bears originating from a augmentation project in the Italian province of Trento.

While the Slovenian population has large numbers of female and male bears, the other populations have few individuals and either no or only low numbers of females. Therefore the geographically distinct Brenta and Northern Limestone Alps populations face a substantial higher probability of extinction unless a connection to the source population in Slovenia or a substituting augmentation program is established. And to avoid inbreeding depression in the longer-term some exchange of genes either by migrating individuals or by augmentation projects is indispensable.

Border Triangle of Austria, Italy and Slovenia

The Brown Bear population in the Border Triangle of Austria, Italy and Slovenia is connected with the large population in the Dinaric Mountains. Bears - mostly young males - disperse from the core area in southern parts of Slovenia toward the Alps. The numbers of bears that arrive at the Alpine areas is dependent on the Slovenian hunting regime. In the last decade

the hunting quota was considerably reinforced because dispersing bears created conflicts with bee keepers and live stock breeders.

Since about three decades bears – mainly young males – are dispersing from Slovenia into Friuli-Venezia-Giulia. The number of bears is heavily fluctuating over time as some of them returning to the South. At present 7-9 individuals are estimated to roam in the Italian area. No reproductions were recorded here.

Facts Bear Population Border Triangle of Austria, Italy and Slovenia:

Range of the species: 2,500 km² in Austria, Italy and Slovenia (Total in Slovenia 6,720 km²)
Population size estimation: 19-26 individuals in the border triangle;
State of preservation: bad but improving, due to small number of individuals and very low number of females; numbers of bears and females are likely to improve with a functional migration corridor and adapted hunting management in Slovenia;

Northern Limestone Alps

The bears in the Northern Limestone Alps are primarily offspring of an augmentation project led by WWF Austria. Three bears have been released in the Northern Limestone Alps by the WWF Bear Release Program which ran from 1989-1993. The location was chosen as a single male bear named “Ötscherbär” had naturally dispersed to the area in 1972.

Shortly after the reintroduction program was started Slovenia protected bears on the migration corridors to the Alps and it was expected that individual bears would disperse naturally from the Slovenian bear population to regions of Carinthia and Styria. An improved monitoring program in Carinthia reported a low number of bears in that area. The presence of bears was interpreted as indication for a growing number of migrating bears. Over the years the total number of recorded bears in Austria adds up to 35 bears; however, it became obvious that the influx from Slovenia only brought far dispersing male bears to southern areas of Austria and neither a substantial number of female bears to the southern regions of Carinthia and Styria nor to the Northern Limestone Alps.

In 1999 the bear population in the Northern Limestone Alps has been at its maximum of twelve bears; However, at their maximum only three of them have been female bears. Today, in summer 2010, only one or two male bears are deemed to have survived in the Northern Limestone Alps.

For some time the reasons for the decline of the northernmost Austrian population were in dispute among experts and interest groups. Therefore an international and multidisciplinary team of experts from the Large Carnivore Initiative Europe - LCIE, IUCN, EU and Austrian institutions with expertise in large carnivore conservation assessed the situation in 2009. It

concluded that no evidence of emigration exists as no Austrian bears have been detected among 900 genotyped bears in Slovenia and Croatia and no immigrants were found in neighboring countries. Based on the high observed reproductive rates (age of primarity, litter intervals, and litter size), the habitat quality was assessed good. The experts also do not expect that mortality during hibernation is a problem, based on the radio-telemetry studies performed in Slovenia (> 100 bear-winters) and Sweden (> 2000 bear-winters). The high cub survival rates suggest that infanticide was not a problem either. Sub-adult bears can be killed by other bears, but the rates of observed mortality in Austria are much higher than the bear-kill rates observed in other European studies. Thus, most of the sub-adult mortality seems to be a result of other factors. Diseases was ruled out as factor as none of the dead bears that were found had a documented disease (no positive data) and all captured (N=3) and recaptured bears were in a good condition. In addition, disease surveys in other European populations have not documented disease or parasites to be a problem. The experts concluded that based on the above and the demographic analyses the present bear situation is primarily due to a sustained, but low number, of bear killings. These killings had a significant effect, because the founding number of bears was so low that the population was especially vulnerable to stochastic effects.

Other conclusions for the future of Brown Bear in Austria were that all evidence supports that there is enough suitable habitat to support a population of Brown Bears in Austria.

Based on the present distribution of female bears in Slovenia, and a reasonable rate of population expansion, experts do not expect large enough numbers of female bears to reach the Austrian border through natural dispersal in the next two or three decades. They considered the probability of female dispersal from the province of Trento as even lower. As a result they concluded that in order to maintain a bear population in the eastern Alps active augmentation will be required. However, experts cautioned that before an augmentation program can be successfully delivered a consensus among affected stakeholders is necessary to solve the problem of excessive illegal killing.

So in hindsight three key factors have played a role for this unfruitful outcome in the Northern Limestone Alps: First and foremost, the starting population of four bears – two males and two females - was well below the minimum threshold that is recommended by recent scientific models for bear recovery projects. The awaited natural dispersal of bears from the Slovenian population added bears to the head count, however those bears were males and they roamed mostly in the Slovenian, Austrian, Italian border triangle. So in hindsight it is evident that abandoning the bear augmentation in the Northern Limestone Alps is not a decision that would be recommended with today´s knowledge.

Secondly, there is evidence that the population has suffered human caused mortality and a number of qualified observers label a number of these losses as “poached bears”. Whatever the causes are, with the low numbers the bear population could not sustain these losses.

Thirdly, the positive momentum of the bear recovery program stalled with increasing conflicts and this tense atmosphere further diminished trust between key players. In 1994 conflicts caused by two male bears led to the development of the first Austrian Management Plan Brown Bear. This management plan has been developed by a variety of partners some of them genuine bear supporters others concerned interest groups like the beekeepers association. Unfortunately after the release of the plan expectations of some interest groups were not met and consequently trust was damaged over the following years. According to the plan´s proposals interest groups such as hunting organizations and concerned groups should have had a central stake in bear management. However the proposed interest forum has

never been established and management decisions were solely discussed by members of the National Coordination Group. Their members came from all the Province´s Departments for Environment and their Departments responsible for hunting and conservation regulations, the Austrian Federal Ministry of Environment and WWF Austria. Since 2007 also some scientific institutions attended the meetings. In recent years efforts to influence management decisions in Austria by asking the European Union to look into these matters were considered a breach of confidence and interference with internal affairs by provincial authorities.

During the years several studies evaluated the public awareness and acceptance for bears in Austria. The public view in the early years can be described as mostly euphoric, with a few concerns. After the mid 1990 – after two bears have killed dozens of sheep - the sentiment changed, ant this change revealed some distinct focus groups. Also hunters proved to be a distinct focus group. This could be expected as the presence of bears directly affects their main interest and concern. Over all years the vast majority of people surveyed accepted and supported the bear recovery efforts.

Facts Bear Population Northern Limestone Alps:

Range of the species: ca. 6,000 km²
Population size estimation: 1-2 individuals
State of preservation: bad; because of the small number of individuals, the lack of reproduction/female Brown Bears in this area and the relative isolation from other bear areas.

Central-Eastern-Alps

In 1989 only 3-4 individuals from the autochthonous Alpine population had survived in Trento in the Central–Eastern Alps. At that time no reproduction was reported. In the years 1999-2003 during the EU co-funded project Life Ursus 10 bears (3 males and 7 females) were captured in Slovenia and released in the Adamello-Brenta mountain range.

Until 2010 a total of 18 reproductions and an offspring of 30 cubs were reported. At the end of the year 2009 the size of the sub-population is estimated to be between 25 and 30 individuals; 25 representing the minimum number confirmed by genetic monitoring at the end of 2009. The sex ratio for the 25 individuals is of 13 males and 12 females.

Some individuals – all of them young males less than 4 years old – have dispersed from the core area around Brenta and Paganello-Gazza mountains, heading to Bolzano province, Lombardy and Veneto regions, as well as to Switzerland, Austria and southern parts of Germany. The dispersal and the habits of individual bears have caused considerable conflicts. One bear showed signs of habituation and was shot in Germany after being persecuted for weeks. Two other were shot in Switzerland.

International collaboration and exchange of information was considerably improved after those bears dispersed across national borders.

Facts Bear Population Central-Eastern-Alps:

Range of the species: 18,238 km²; for the females it is about 955 km²
Population size estimation: 25-30 individuals
State of preservation: unfavourable-bad but improving; mainly because of the small number of individuals, although there is a positive trend. Other problems are the low genetic diversity of the population and conflicts/low acceptance within region.

Policy Context

Bear recovery in the Alps has often been described as ecological challenge within a given political and legal framework. With the growing global experience of large carnivore conservation efforts another perspective emerges. The policy arena and the dynamic of the balance of powers add complexity to the laws and treaties that are in place. Symbolism; fragmentation of responsibilities; adequacy of procedures; position and power of focus groups and their relationships to proponents of the conservation efforts have a critical impact on the recovery efforts.

The political context in which the bear recovery efforts in the Alps are taking place is complex. Bears are used and understood as symbols for larger policy agendas. Nature conservancy groups describe bears as umbrella species indicating favored conditions of landscapes and land-use. Some local critics see bears as symbols for paternalism of rural residents by a largely urban society. Bears are also caught in a discourse over federal versus provincial administrative responsibilities; in a discourse over national sovereignty and acceptable influence and control standards executed by the European Union; and in a discourse over how international collaboration and balance of interests between nations can be achieved.

Large carnivores put our policy standards to a test. A young bear, born in Italy, migrated through Switzerland, Austria to German territory, and developed critical habits that some experts and authorities deemed inacceptable. He showed the inadequacy of the former administrative regulations and deficiencies in the policy system. The bear, by who went by the name JJ2 and Bruno, forced governments and interest groups to re-evaluate how they should have a voice in conservation decisions of mutual interest.

The policy `landscape´ that bear recovery efforts have to take into account is as fragmented as the natural landscape. Everyone would expect different regulations in the involved nations, but the situation is even more complex as we may see in the Austrian situation. In Austria the provinces are responsible for laws regulating nature conservation and land use. This led to a diverse variety of responsibilities for bear conservation, addressing bear conservation in either provincial nature protection laws, or hunting laws, or in both laws. The Federal Ministry of Environment in Austria though can only take an active part in bear management if provinces and federal government sign a specific treaty. Austria signed treaties with the European Union that provide a framework for bear conservation. Therefore the European Commission will address the federal ministry in any concerns about bear management. When the European Commission stated their concern about the bear management measures that have been taken during the decline of the bear population in the Northern Limestone Alps representatives of the Austrian Provinces voiced outrage that someone denigrated them and the European Union has no authorities to interfere with management decisions of the provincial governments.

Further adding to the complexity are several policy arenas that have impact for the recovery efforts. In general the local policy arenas are the most critical and there is widespread acknowledgment of the importance to deal with local issues. However, other arenas and actors have not yet received the same attention. There are federal, national and European arenas. To elaborate the arenas we may look briefly at hunting groups. Hunters socialize on

a local level; they organize themselves in provincial federations and collaborate in a national platform and internationally. For each of these arenas specific topics may be of interest and sometimes mingled with topics that are not bear related in the first place.

Many surveys show a steady and strong support for bear recovery by the general public while the support of essential groups – such as hunters - is often less stable and overall reduced. Strong support in the general public is valuable, but it is essential to gain the support of critical focus groups. A sound understanding of the variance of values, attitudes, and behaviors within such a critical focus group is key for effective communication. In the past bear recovery effort proponents have sometimes failed to establish a clear understanding of the attitudes and issues of critics. They have also failed because they allowed assumptions and generalizations about focus groups to cause strong negative feedback. Supporters of bear conservation attacked focus groups for unacceptable behaviors of some of their members or affiliates. This affront resulted in a typical response of social groups. The group closes ranks to ward off the attack, and ignores the deeds of the individuals even if they violate ethical norms of their own group.

The relationship between actors in the policy context and proponents of the conservation efforts is often influenced by historical experiences and the (dis-)harmony of these relationships tends to impact the attitude of actors towards bears. Groups that have proven to be essential for successful bear conservation efforts are often in a powerful policy position, well connected to other similar powerful or essential groups and with a strong voice in their internal discourse.

In the past most of the public outreach efforts have been directed at raising awareness and delivering information. Raising awareness and providing information are crucial elements of conservation programs; however they are not effective to create commitment and support of critical groups and individuals if they are not completed with other methods. Although some local projects, such as the Ursina project in Switzerland, had good results with involvement and shared decision making processes, there was a general lack of participatory methods in bear conservation efforts. Promising methods such as Community-Based Social Marketing, Common Ground, Participatory Decision Making, and others should be used more often to involve critical groups, foster their commitment and enhance collaboration.

Mere information based public relations can have detrimental effects for the conservation efforts. Recipients feel excluded and make their own assumptions about why specific decisions have been made. Such assumptions can be seen in the Alpine bear recovery efforts where critical interest groups or actors develop conspiracy theories, such as some critics who purport the hidden reason why WWF is involved in the recovery efforts is the opportunity to raise enormous funds.

Austria provides a good example of the benefits of more inclusive public relations. When the first management plan was developed critical interest groups, such as hunters, sheep farmers and other land-users, had a voice and seat in the negotiations about the future framework of their co-existence with bears. Their input was extremely valuable and included financial contributions to the conservation efforts. Hunting organizations amended their insurance policies to provide coverage for killed husbandry. This atmosphere of cooperation has been lost over the following years when hunting organizations were not sitting on the national coordination panel on bear management and excluded from the information sharing and the preparation of administrative decisions in bear management. Their opposition in recent years might be partly bred by the missing integration into the structures and processes; their opposition to specific decisions might also have helped to draw a more

complete picture of concerns and allowed better decisions to be made when it would have been available at an appropriate time.

Conclusions from Lessons Learned

The Pan-Alpine Conservation Strategy Brown Bear Strategy has to reflect several lessons:

Bear populations that are newly established and dependent on natural dispersal are prone to have a deficit in female bears due to the vastly different natural dispersal strategies of male and female bears. If the small populations are not augmented with female bears the extremely vulnerable phase of the recovery will be considerably extended.

The recovery of the Alpine bear population is most vulnerable to stochastic effects and sabotage during the early phase when the reproduction of the bear population is low due to the small numbers of female bears. Models suggest the tipping point where the recovery process for bear populations enters a more resilient phase may be close to or above 100 individuals. The augmentation project in the Northern Limestone Alps never achieved such a population size. The augmentation project in the central eastern Alps is far below this level. Even the combined total of all bear occurrences in the Alps does not add up to this threshold.

To avoid inbreeding effects a restocking program should ensure that there are serveral male bears contributing to the genes of the future population.

The human dimensions of bear management are essential for the short-term and long-term success. People´s acceptance of bears, the public awareness and confidence in the recovery project, and the experience of the management team how to handle challenging situations set the stage for the recovery.

The strategy must address distinct focus groups with tailor made communication. The communication should foster dialogue and enhance trust between the partners.

There is a high plausibility that some individuals in Austria previously engaged in sabotage of the recovery efforts and poached bears. It is important to understand that these impacts cannot be addressed by a broad communication campaign which might be relevant to the general public with average awareness and concern. Here the strategy must not only understand attitudes and conduct of a highly specific focus group. It must deal with people on the very extreme spectrum of this group and pay close attention not to offend the vast majority of the group.

A recovery program of this dimension is a complex process that needs reiterated adjustments. Some setbacks – in human dimensions and the growth of the population - are likely and part of the expected process. For this reason the progress should be repeatedly analyzed and lessons from setbacks or successes utilized to improve the overall performance.

f) Threats and Opportunities

Root Cause	Threat / Opportunity	Conclusion
Habitat		
Urban and infrastructure development in the Alps alters landscapes and is often pooled in distinct areas.	Abundance of suitable habitat fragmented by barriers.	Lobby that land use planning has to factor in requirements for bear management and habitat conservation. Establish voluntary pilot projects that promote well regulated access to important bear habitat for military, recreational and touristic purposes. Enhance pan-alpine collaboration to ensure consistency of land use planning objectives.
Locally habitat is disturbed by leisure and tourism, and military manoeuvres.	Abundance of suitable habitat, but some areas seasonally disturbed.	
Changes in land use are foreseeable: Urbanization of economic hot spots and transit corridors, abandonment of pastures, reforestation of abandoned pastures;	Fragmentation of habitat. Locally reduced and/or improved habitat quality;	

Root Cause	Threat / Opportunity	Conclusion
Public Administration and Law Enforcement		
Information on bears and human-bear interaction is fragmented.	Decisions are deferred and critical situations tend to escalate to a crisis; Loss of acceptance	Provide easy access to important management information and enhance information management; Conduct focus group oriented information campaigns and organize field trips for focus group media; Establish direct contact between bear experts and decision makers within focus groups; Facilitate better information sharing and coordination between governing bodies, research institutions, NGO´s, protected areas and other stakeholders;
Legal and managerial competences are fragmented.	Decisions are deferred and critical situations tend to escalate to an emergency; Loss of acceptance	Simplify procedures and delegate emergency measures to lowest possible authoritative level; Establish easily accessible managerial support for involved authorities;

Root Cause	Threat / Opportunity	Conclusion
Lack of specific bear management knowledge of local authorities and interest groups; Lack of preparedness of local, provincial, national authorities; Lack of trust between various stakeholders and authorities.	Decisions are deferred and decision makers do not adhere to inter-coordinated bear management procedures; Fears and concerns are not addressed by bear management; Loss of acceptance	Provide information and training for focus groups (public servants, etc.) with a focus on geographical areas of interest; Establish a permanent technical support line for local decision makers; Enhance knowledge and spirit of collaboration by local bear projects involving local stakeholders and authorities.
Lack of pro active bear management and conservation efforts. Bear conservation is deemed secondary to conflict management.	Elevated risk of failing at pan-alpine bear recovery efforts. Efficiency of bear management is hampered over long time with small populations. Bear management is hesitant to kill habituated or food-conditioned bears because of negative effects on risk of extinction for the whole bear population.	Lobby for a quick recovery strategy. Propose quick response to conflicts combined with mitigation measures for population if bears have to be killed by management.
Countries – with the exception of Slovenia - are providing only small budgets for management of small bear populations; Beside WWF budgets only marginal private funds available;	Limited capability of bear management creates distrust in public when recovery program stalls and emergencies cannot be solved in short time.	Present alternative costs of strategy of quick bear recovery, effective bear management and shared resources; Examine additional funding opportunities;

Root Cause	Threat / Opportunity	Conclusion
Complex legal framework creates fragmented responsibilities and competences between local, provincial and national authorities;	Slow response time in emergencies and reluctance to actively take a responsible role in bear management;	Facilitate information sharing and coordination between governing bodies, research institutions, NGO´s, protected areas and other stakeholders; Lobby for National and Pan-Alpine Coordination Panels.
Lacking law enforcement for poaching even though legislation is in place	Poaching continues, erodes public confidence in authorities and elevates risk of extinction for the bear population.	Partner with focus group and mutually conduct regionally and socially target specific campaign; Foster internal social control within critical focus groups and establish social norms for the `right behavior´; Use advanced equipment for improved monitoring of bears; Lobby for strict law enforcement.
Bear attractants (garbage, feeding stations for live-stock or wildlife) are not handled with care	Habituation and food conditioning of bears; Necessity of lethal bear management and loss of bears; Loss of acceptance due to nuisance bears and conflicts;	Conduct general information and media campaigns. Lobby for bylaws regulating the handling of bear attractants; Foster community commitment and establish social norms for the `right behavior´;

Root Cause	Threat / Opportunity	Conclusion
Land Use Planning		
Urbanization and infrastructure development downgrades local or regional quality of bear habitat	Reduced carrying capacity of bear habitat and increased likelihood of human-bear conflicts.	Lobby that infrastructure planning has to factor in requirements for bear management and habitat conservation.
Urbanization and traffic infrastructure development (roads, railways) create barriers in or between bear habitats	Elevated risk of bears killed by traffic; Degradation or failure of migration corridors with subsequent isolation of sub-populations and increased risk of extinction	
Increasing urbanization in northern parts of Slovenia	Reduced functional capability of Alpine-Dinaric Corridor; Low numbers of bears, especially females, dispersing to Alpine habitat	Enhance pan-alpine collaboration on bear management and habitat conservation.
Politics		
Vocal opposition by some interest groups	Negative feedback loop due to repeated denunciation reduces public acceptance for bear management and political support for bear conservation	Foster spirit of collaboration with mutual bear projects involving critical stakeholders; Establish strong bonds with accredited archetypes in focus groups.

<table>
<tr><th>Root Cause</th><th>Threat / Opportunity</th><th>Conclusion</th></tr>
<tr><td>Political overrepresentation of vocal groups in opposition to bear management</td><td rowspan="2">Political polarization over bear conservation and human-bear conflicts reduces level of trust and public support;
Poaching causes critical loss of bears and an increased risk of extinction in small populations;</td><td rowspan="2">Involve accredited archetypes of geographical areas in bear conservation projects.
Establish a `pro bear´ group of committed politicians to support bear conservation.<br>Foster internal social control within critical focus groups and establish social norms for the `right behavior´;
Enhance technical methods to monitor bears and lobby for strict law enforcement;</td></tr>
<tr><td>Bears are used as a political vehicle to fight over local or individual self-determination</td></tr>
<tr><td>Little political support for bear conservation</td><td>Efforts of public administration for bear management impeded.
Lack of funding for adequate bear management is hampering conservation and damage prevention</td><td>Establish strong bonds with accredited archetypes in focus groups or geographical areas;
Establish a `pro bear´ group of committed politicians to support bear conservation. .</td></tr>
<tr><td colspan="3">Land Use Conflicts (livestock farming, bee farming, forestry, tourism & recreation, …)</td></tr>
<tr><td>Bear-Livestock conflicts in northern parts of Slovenia</td><td>Adverse hunting management in northern parts of Slovenia reduces desired bear migration towards Alpine habitat and result in low numbers of bears, especially females, dispersing to Alpine habitat</td><td>Lobby for enhancing pan-alpine harmonization of bear management;
Lobby EU and member states to intensify their efforts under the Fauna-Flora-Habitat directive;
Lobby Slovenian government to take Alpine bear recovery requirements into account;
Lobby for pan-alpine collaboration on damage prevention and compensation;
Lobby for a Bear Management Plan for PCA “U”;</td></tr>
</table>

<table>
<tr><th>Root Cause</th><th>Threat / Opportunity</th><th>Conclusion</th></tr>
<tr><td>Lack of prevention and protection for livestock farming</td><td rowspan="4">Increased losses of unprotected livestock;
Reduced acceptance with livestock owners and bee keepers and subsequent reduced acceptance of bears by people in rural areas.</td><td rowspan="4">Enhance knowledge about bears and damage prevention;
Provide free of charge prevention tools (electric fences or others) for a specific amount of time;
Make damage prevention a social norm and propose prevention measures becoming a pre-condition for damage compensation;
Support development of innovative livestock management tools in mutual pilot projects;
Foster spirit of collaboration with local bear projects involving local stakeholders and authorities;
Facilitate damage compensation;</td></tr>
<tr><td>Change in livestock management towards amateurism and unaccompanied livestock</td></tr>
<tr><td>Ongoing trend towards more sheep and less cow husbandry in bear habitat</td></tr>
<tr><td>Increased bee farming in bear habitat</td></tr>
<tr><td>Increase of touristic and recreational land use in bear habitat</td><td rowspan="2">Reduced availability of remote areas for bears.
Reduced quality and carrying capacity of bear habitat;
Reduced functional capability of migration corridors.
Increased likelihood of human-bear conflicts.</td><td rowspan="2">Lobby land use plans for tourism and recreation, and military training factoring in requirements for bear management and habitat conservation.
Use WWF internal tourism tools (Panda fattorie, Gites) and partners in tour operations to raise awareness and promote soft tourism.
Collaborate with other interest groups concerned about wildlife and lobby for remote retreat areas for wildlife.</td></tr>
<tr><td>Short term activities (military manoeuvres, touristic events) disturb bear habitat</td></tr>
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Root Cause	Threat / Opportunity	Conclusion
Large scale land use (forestry, agriculture) is seasonally disturbing bear habitat and access roads increase presence of humans	Loss of remote areas for bears to retreat or hibernate. Increased likelihood of human-bear conflicts; Overall reduced survival rate of bears.	Lobby land owners and land use associations that large scale land use factors in requirements for bear management and habitat conservation; Conduct information campaigns and organize media field trips; Collaborate with land owners in pilot projects enhancing the state of the art land use management;
Wildlife is attracting tourism to international destinations; Bears have proven to create various business opportunities from wildlife viewing to outfitters.	International successful business models can be adopted for Alpine areas	Use WWF internal tourism tools (Panda fattorie, Gites) and collaborate with external partners in tour operations to raise awareness and promote soft tourism. Collaborate with tourism agencies and lobby for bear related tourism.
Internal Bear Management Procedures		
Un-harmonized national or provincial bear management procedures for nuisance bears	Inconsistent treatment of nuisance bears in adjacent areas, worsening of individual bear behavior, Reduced public acceptance for bears and seemingly incompetent bear management	Lobby for pan-alpine harmonization of management procedures for nuisance bears; Prepare and present common guidelines for the management of nuisance bears; Lobby for adequate funding of bear management and pan-alpine coordination.
Budget limits efficiency of monitoring by not allowing purchase of expensive equipment, advanced monitoring methods (GIS based monitoring for individual bears, and genetical monitoring for population trends) or enough staff time	Losses of bears or decline of population stay undetected or cannot be confirmed for longer periods of time	Put a focus on monitoring as long as the recovery project is in the less resilient starting phase; Partner with scientific institutions; Share resources in cross-border monitoring;

Root Cause	Threat / Opportunity	Conclusion
In Austria: Lack of pro-active bear management and conservation strategies; Strong focus on end of the pipe crisis management and compensation instead of a holistic conservation and management approach.	Short lived activities without addressing long term goals of bear recovery;	Lobby for long-term and pan-alpine conservation strategy.
In Italy: Responsibility is fragmented between a various authorities	Decisions are deferred; Reduced public acceptance	Simplify procedures, prepare protocols and delegate emergency measures to local authorities; Establish easily accessible managerial support for involved authorities;
In Switzerland and Germany: Passive conservation and management approach waiting for natural dispersal of bears; Some preparation for conflict management in place; Lack of commitment for pro-active bear conservation within essential focus groups;	Natural recovery unlikely due to ecological bear dispersal patterns, increase of migration barriers and sustained loss of individual bears due to lethal bear management or poaching; Lack of public awareness and education in focus groups;	Collaborate with other interest groups concerned about wildlife and lobby for pro-active bear conservation program. Prepare public awareness campaign custom tailored for focus groups; Collaborate with focus groups in pilot projects enhancing their preparedness;
Collaboration and Institutional Network		
WWF Alpine Program and WWF Germany adopted pan-alpine perspective	Improved Pan-Alpine collaboration within WWF and with other partners	Lobby for pan-alpine strategy
Currently no Slovenian WWF organization exists	Reduced WWF influence on and support of bear management in Slovenia	Establish Slovenian WWF or identify credible partner within existing organizations in Slovenia

g) Potential Partners for Implementation

Role of World Wide Fund for Nature

The World Wild Fund for Nature (WWF) is a pioneer in modern wildlife management and has accredited bear expertise. WWF has the organizational capacity to act as pressure group and lead successful bear conservation projects on a pan-alpine scale. With these strengths it is an essential partner for the successful conservation of Brown Bears in the Alps.

WWF international and its national organizations in the Alps have mutually agreed on the Pan-Alpine Conservation Strategy Brown Bear. They talk with one voice and support each other. WWF intends to support the conservation efforts for Brown Bears in the Alps with communication and lobbying, good advice for decision makers and concerned interest groups, as well as bear conservation projects in the field.

WWF is promoting cooperation and a reliable partner for all involved interest groups. WWF values all involved interests, focuses on solutions, makes informed decisions based on science, and aims at conservation of species.

Partners

The following list of potential partners is a quick first shot to indicate the variety of potential partnerships and it is by no means exclusive. It is strongly recommended to thoroughly assess the political and social environment for bear recovery once WWF has endorsed the strategy in its own organizational environment. For a successful implementation of the strategy all concerned and interested groups should be identified and involved in the process early on.

- Provincial and regional government and authorities with bear occurrences
- National Ministries of Environment in (Austria, France, Germany, Italy, Liechtenstein, Slovenia and Switzerland)
- EU Parliament
- IUCN
- Land Owners with large estates
- Land use associations (Livestock breeders, agriculture, forestry, …)
- CIPRA
- VIP´s and accredited archetypes for focus groups and local and regional communities
- Authorities or bodies governing, planning and managing highways
- Protected areas

- NGO´s with interests in nature conservation (DAV, OeAV, CAI, Climbers, Face, ZGF, alpine conservation organizations)

- Educational organizations (School boards, National Ministries for Education, …)
- Scientific partners (Universities, Kora,,)
- Malme database
- International partners and experts
- Media partners
- Social networks and internet platforms
- Commercial Partners (tourism associations, enterprises, …)
- Sponsors, trusts and fonds which are supporting environmental initiatives
- Partners within WWF global network