



**From conflict to coexistence? Results from a
stakeholder workshop on large carnivores in Brussels,
25, January, 2013.**

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From conflict to coexistence: Results from a stakeholder workshop on large carnivores in Brussels, January 2013.

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Executive summary

The process of conserving large carnivores in modern European landscapes is proving to be a very challenging exercise, not least because of a diversity of conflicts that are associated with their presence and controversy over the ways in which they should be managed. One key approach to managing conflicts is to develop structured forums for stakeholders to enter into constructive dialogue. As a first step in this direction a stakeholder workshop was held in Brussels on January 25th, 2013, which brought together more than 80 stakeholders from a diversity of nationalities and interest groups (environmentalists, conservation biologists, livestock and reindeer herders, landowners, rural interests, administrators, hunters and journalists) and representatives from the European Commission.

The workshop aimed to (1) give stakeholders a chance to raise issues of concern directly with representatives of the European Commission and (2) to gather structured feedback on a diversity of issues to identify areas and issues where there was common ground and others where there was decent. To achieve these goals the workshop included plenary presentations, plenary discussions, facilitated break-out groups and a Q-sort survey conducted face to face in the workshop and online after the workshop. In addition, a few written contributions were received. The conceptual framework of the workshop aimed to place the discussion around large carnivores into a wider context concerning the European landscape and the place of humans and their activities within this landscape. The focus was also placed on the future, with an emphasis on trade-offs that exist between potentially different future directions that the landscape, human activity, and large carnivore conservation, can take.

In each of the four break-out groups, participants were asked to address three questions. The first concerned developing a short vision for an ideal short term future. This was followed by a discussion of the barriers that exist to the achievement of this vision, and then a discussion of the potential solutions to these barriers.

None of the stakeholder groups' visions excluded the presence of large carnivores in a future European landscape, although the livestock producers especially indicated a desire for limitations on their numbers and distributions. This was especially evident when it concerned wolves returning to areas in northern and western Europe from which they have been absent for prolonged periods. There was considerable variation both between and within stakeholder categories concerning the desired level of ambition for conservation. Participants from all stakeholder groups recognized the need for finding compromises between multiple competing interests, expressed a desire for a more informed and less emotional and polarized discussion, and recognized, either explicitly or implicitly, the legitimacy of the different stakeholder groups' activities in the landscape. There was also a widely held perception that large carnivore populations will need to be managed in some way to enable compromises to be reached. The desire to find practical solutions to conflicts with livestock was expressed by all groups. One point of difference concerned the desired scale of management, with desired views ranging from local to international. Overall, there was considerable scope within the visions of the diverse stakeholder groups represented to include both large carnivores and diverse human activities in shared multi-functional landscapes, although as would be expected there were clearly major differences of opinion as to the respective weights that should be given to each interest and where the compromises should be drawn. There were also indications of underlying differences in terms of an understanding of the appropriate form of the relationship between humans and

nature, especially to the extent which humans should interact with nature via activities such as hunting and livestock grazing.

There was a striking degree of overlap and symmetry between the different groups in how they articulated their views of the barriers that exist to achieving their diverse visions of the future. Almost all stakeholder groups felt that their interests were not understood by the other stakeholders, and that there was not enough dialogue or cooperation between stakeholders. Potentially because of this lack of communication there was also a feeling of a mutual lack of will among other stakeholders to accept the underlying premises and compromises of their respective agendas. The problems with applying global solutions to diverse local problems were pointed out by many. All groups identified barriers associated with a lack of understanding of the attitudes and norms of rural people as well as a lack of socio-economic analyses of the impacts, or benefits, associated with large carnivore conservation. The fact that livestock husbandry practices in many countries have lost their adaptation to large carnivores was recognized by all stakeholder groups, as were the practical and economic challenges with reinstating these practices. Although all stakeholder groups acknowledged that there was a need for much more local level engagement, there was an underlying, but poorly articulated, difference with respect to how far this should go in terms of devolution of decision making power.

Based on the break-out groups' prioritization of the barriers, the groups held discussions concerning possible solutions. One set of ideas concerned finding solutions to knowledge-related barriers. Firstly, there was recognition of a need to better integrate science from multiple disciplines into all levels of large carnivore policy development and management. Secondly, participants underlined the need to find ways to improve the public awareness and communication of scientific knowledge. Thirdly, a number of knowledge gaps were identified; including the need for an improvement in large carnivore monitoring methods and ways to engage stakeholders in this activity, the need to gain a better understanding of the social and economic costs and benefits for rural communities associated with large carnivores, and the need to develop and communicate best practices for stakeholder engagement processes. Another set of ideas concerned ways to get past barriers related to extreme polarization and poor inter-stakeholder relations. These included; a need for the responsible authorities at regional and national levels to be more visible and accessible to stakeholders. It was also felt that they were not taking responsibility for the consequences of their large carnivore conservation policies. The potential to integrate diverse stakeholders into cooperative activities, such as monitoring and communication, so they can gain experience of working together and the need to invest in dialogue processes with professional facilitators that bring stakeholders together at different scales (local, national, European) to foster greater understanding, mutual respect and consideration, were also identified. The utility of emergency teams who could respond to acute situations was recognized. Concerning barriers related to livestock husbandry practices; the need to adapt livestock husbandry practices to the presence of large carnivores in areas where the traditions have been lost was recognized by the participants, however it was also recognized that it was a challenge to generate a will to change.

The Q-sort analysis revealed three distinct narratives among the participants, although these could be more correctly viewed as being different parts of a continuum rather than three very distinct clusters. Only one statement came across dramatically different between narratives (*the presence of*

large carnivores has a major negative impact on the quality of life in rural areas). People defining narratives 2 and 3 strongly agreed with it whereas people defining narrative 1 disagreed. It thus appears that environmentalists and people from the administration of nature conservation agencies could be underestimating the way rural stakeholders perceive the impact of large carnivores on rural life. The other statement on which one narrative agrees and another one disagrees is the statement 13 (*the continued presence of large carnivores in European Landscapes should be viewed as a source of pride*). Whereas environmentalists and environmental administrators can see the presence of carnivores as a source of pride, people in narrative 3 are strongly opposed to this idea. It has to be noticed that people in narrative 3 are mainly from countries from which carnivores are only just returning after having been extirpated in recent history. Apart from these two statements, there were no apparent strong oppositions between the different narratives, and no other statements were strongly agreed on by some groups while disagreed on by other groups. All three narrative groups significantly agreed on the idea that nature conservation in Europe should preserve the way that people interact with nature and on the national pride associated with having a production of a diversity of local and traditional food products. All three groups also disagreed with the desirability of build wind-parks and hydro-electric power plants wherever it is technically possible. Whereas hunters and livestock breeders expressed a concern for the threat posed by the concept of wilderness and its consequences, environmentalists who participated in the survey did not appear to directly advocate wilderness as a conservation goal. Rather, they favoured the development of sustainable interactions between humans and their environment. Rather than being opposed to other groups, each group's narrative expressed its main concerns for the future of their activity and/or way of life. All of them more or less agreed on the multi-functionality of landscape to the extent it allows the preservation of traditional human activities for group 3, it ensures a high level of biodiversity including large carnivores for group 1, and it is maintained under human control through hunting and more local decisions for group 2.

The different workshop methods appear to have complemented each other well and generated a wide diversity of feedback in both structured and unstructured forms. In areas where the methods collected data on overlapping issues there was a high degree of concordance, yet each provided additional insights into the issues that led to a fuller picture. Among the participants at this workshop there was certainly no support for the stereotype of a highly polarized "pro-carnivore" vs "anti-carnivore" dichotomy. In many ways it would be best to consider the points of view expressed as falling along a more or less continuous gradient. While the extreme ends of this gradient may be very far from each other, there was also considerable middle ground. The existence of this middle ground provides scope for moving forward. It was also apparent that large carnivore issues were deeply imbedded in a diversity of other issues concerning multiple policy sectors that influence the environment and rural life, including forestry, transport, agriculture and development. Although this makes the issues of dealing with large carnivores much more complex, it also provides scope for reminding many stakeholders of the existence of much common ground which tends to be forgotten in the often heated discussions over large carnivores. The discussions tended to be very much wolf focused, with only a secondary focus on bears, lynx and wolverines, implying that it may well be valuable to disentangle the debate into species specific debates rather than focusing on the broad umbrella of "large carnivores".

The following highlights some of the issues where there was broad agreement between the different stakeholder categories.

- They expressed a need to address issues related to livestock depredation using effective and locally adapted methods.
- They expressed a need to improve the capacity and competence of institutions and achieve a better coordination of policy and a greater degree of local support for these policies.
- All stakeholder groups expressed concern for the future of their activity or interest because of pressures coming from other stakeholder groups and general societal trends.
- The stakeholders argued that they were not properly understood by their counterparts.
- There was a widespread support for the adoption of flexible approaches to dealing with large carnivore management that takes into account the diversity of situations occurring across Europe.
- Many stakeholders from a diversity of backgrounds had a common perception that legislation was tending to favour protectionism of individual carnivores, rather than focusing on the viability of populations, and that this bias was problematic for building acceptance.
- There was widespread support for adopting a more knowledge based approach to management, preferably where scientific (from multiple disciplines) and local knowledge could be combined.
- There was a clearly articulated need to engage with a far wider public than the classic and readily identifiable stakeholder groups.

Despite the existence of this common ground, there were also clearly areas of disagreement and some themes that contain potential for disagreement.

- Although it was not strongly advocated by any of the environmentalist stakeholders in this workshop, many of the livestock and hunting stakeholders found the emerging wilderness discourse to be very controversial.
- There was very clear disagreement concerning the impact that large carnivores have on the quality of life among rural people.
- Environmentalists and administrators tended to favour larger scale coordination of management at the spatial scale of carnivore populations, whereas the other stakeholder groups tended to argue for more local influence and local control.
- Whereas environmentalists argued for restoration over most of the landscape and the restoration of natural ecological processes, some livestock stakeholders argued that the distribution of large carnivores should be severely limited.

Based on the responses received at this workshop there was a general enthusiastic support for a continuation of this type of dialogue based participatory process at European and more local scales. There were also some activities that were clearly recommended. Our recommendations include;

- A multi-disciplinary analysis of the costs and benefits associated with large carnivores in multi-functional landscapes would be helpful. Ideally, this should focus on both economic and non-economic costs and benefits. It should also serve to better explain the diversity of interests that the different stakeholder groups have, because it was clearly expressed by many participants that they simply do not understand the other stakeholder groups because they have little contact or insight into their world views. This goes as much for a lack of understanding of the large carnivore conservation agenda among livestock producers as for a lack of understanding by many environmentalists of the link between heritage, tradition, food production, biodiversity and livelihoods felt by livestock producers.
- A lot could be gained by trying to better integrate large carnivore conservation into the existing wildlife management structures which are well developed in many countries. These structures have good experience at negotiating multiple interest groups and are well anchored within formal property rights and responsible institutions. However, it was pointed out that they need to be much more open to consider a wider range of stakeholder interests and be more open to consider wider ecosystem level aspects of their activities. At the very least these structures should be considered as valued partners in a common effort.
- Involve a diversity of stakeholders in common activities. These could include the joint production of information materials where multiple stakeholder groups sign off on a common content and distribute the material through their respective networks. It could also include involving more stakeholders in the collection of observations that serve as the foundation for large carnivore monitoring, and transferring experience and best practice between areas.
- Because of the large scale at which large carnivore populations operate and the dramatic influence that several EU policy areas have on large carnivores and on the key stakeholders it is clearly necessary for there to be a clear and active engagement of EU level institutions in pushing the process forwards, especially with respect to achieving population level management. However, it is also clear from this workshop's discussions that this top-down guidance must leave plenty of space for a real local level influence on the way that policies are implemented at more local scales.
- Initiate dialogue forums at a more local level.
- It would be a good idea to try and test out some of these next steps within some model areas. This would provide the possibility to gain experience and develop best practices.

1 Introduction

1.1 The return of the predators.

Biodiversity conservation is always a complex procedure in our modern and crowded world. The existence of a range of international conventions and directives (e.g. Convention on Biological Diversity, Bern Convention, Birds and Habitats Directives, Bonn Convention, CITES) testify to the emergence of a widespread global commitment to conserve biodiversity. Although the overall picture may often be pessimistic, there are some species groups which are doing relatively well in some regions. It often comes as a surprise to people that the large carnivores (brown bear *Ursus arctos*, Eurasian lynx *Lynx lynx*, wolf *Canis lupus* and wolverine *Gulo gulo*), often mistakenly regarded as animals needing wilderness, are among the species that are generally holding their own, and even expanding, across large parts of their former distributions in Europe (Kaczensky et al. 2013). However, this apparent conservation success story has come at a price, as reflected in the wide diversity of conflicts that are emerging surrounding them. This report summarises the results of a stakeholder workshop that aimed to discuss these conflicts as perceived by different stakeholders and explore some potential avenues for preventing, reducing and managing these conflicts and find a way to a better future.

1.2 The contract

This report is one of the outputs of contract number 070307/2012/629085/SER/B3 between the Istituto di Ecologia Applicata and the European Commission's DG Environment. As quoted from the call for tenders from 2012: *"The overall objective is to identify practical approaches to help ensure the maintenance or achievement of the favourable conservation status of European large carnivores and to securing their coexistence with humans by reducing conflicts. The large carnivore species for this contract will be the brown bear, the wolf and the Eurasian lynx. The contractor's task will be to support the European Commission in developing elements of an EU Large Carnivore Initiative for the conservation and sustainable management of these species which were not the focus of the earlier Commission guidance document. These elements could in particular help in defining the way forward towards better cooperation of key stakeholders. The recognized successes and the lessons learnt from earlier initiatives should be fully utilized, as well as the experience of other ongoing process (Bern Convention, LCIE) will have to be drawn upon. The novel elements of the current exercise compared to the earlier work will be to explore conservation conflict-resolution mechanisms applicable to human-large carnivore conflicts and to identify 4-6 areas, involving different target species, where the mechanisms may be tried and tested by stakeholders directly involved. This work should take account of, and build on the results of previous work on conflict management and nature protection commissioned by DG Environment."* Because of the fact that wolverines share habitats with lynx and bears and have many overlapping issues we have chosen to also include a focus on them.

The specific objectives of this report is to fulfill Task 5, specifically; *"a) to identify commonalities of agendas and elements for a dialogue with stakeholders, and to prepare a scoping document with elements from Tasks 1 to 4 and other materials as a discussion document for a stakeholder workshop of one day duration; b) to assist the Commission in organizing this workshop in month 5 of the contract (identification and proposal for list of speakers and invitees, handling of invitations and correspondence with invited participants, preparation of draft agenda and background documents,*

leading workshop sessions where requested, preparing workshop minutes and conclusions, update of scoping document in light of the discussions). "

The stakeholder workshop was held in Brussels on 25th January 2013. The scoping document was sent to participants in advance of the meeting is attached in Appendix 1 of this report, and is essentially a summary of a series of reports prepared under the other tasks of this contract. The text of this report covers part b of Task 5. The agenda of the workshop is attached in Appendix 2 of this report.

1.3 Workshop goals

The workshop had two specific goals.

(1) To provide an opportunity for a selection of key stakeholders to express their concerns and interests concerning large carnivore conservation issues directly to the representatives of the European Commission.

(2) To explore some of these issues in greater detail using a structured survey and break-out group discussions. The main hopes were to identify issues where there was a high degree of common ground between stakeholders and other issues that were more divisive with the hope to identify avenues for constructive future engagement.

1.4 Workshop structure

To reach these goals a combination of four elements were included in the workshop.

(1) Plenary presentations from a few key stakeholder groups.

(2) Break-out groups that discussed a set of predefined topics – namely visions of the good life, barriers to achieving this good life, and potential solutions to overcome these barriers.

(3) A structured interview / survey method (Q-sort) was used to map the underlying values of a cross-section of the stakeholders. These were conducted during the workshop and online afterwards.

(4) A final plenary session where participants were invited to comment on the day's proceedings and the way forward.

In addition, an opening was made for written comments to be submitted both before and after the workshop.

In advance of the workshop, all participants were sent a series of draft technical reports that reviewed (a) the current status of large carnivores in Europe, (b) the progress being made towards population level management and (c) patterns of conflict and potential conflict resolution methods. Although these were available only in English, a five page summary (scoping document) was prepared and distributed in seven languages (EN, DE, FR, PL, RO, ES, IT).

In order to facilitate the representation of a diversity of participants, the Commission services arranged simultaneous translation for 7 languages (EN, FR, DE, IT, ES, PL and RO) during the plenary sessions, but was not available for the break-out groups. However, involvement was facilitated by

some of the facilitators being multi-lingual (EN, NO, DE, FR, IT, ES, SI, HR) and with the assistance of group members who helped with interpretation where needed. The computer based Q-score surveys were available in ten languages (EN, FR, DE, IT, RO, EE, LV, EST, SI, PL).

Because of time constraints there was no possibility to have in-depth discussions within groups or pursue consensus. The various participants were given the opportunity to present their views on the requested issues. The detailed statements and comments they contributed have been included in an appendix, only modified where needed to make the context understandable. In the following sections we have attempted to summarise the overall results from these break-out groups and extract some key impressions. These interpretations are purely those of the authors / facilitators.

1.5 Workshop attendance

It was attended by 81 participants, of which 68 represented a diversity of stakeholder groups. The others were officials of the European Commission and those helping to facilitate the workshop.

When placing the 68 stakeholders into broad categories the representation was as follows;

- 21 environmentalists / conservation biologists,
- 17 representing livestock and reindeer herding interests,
- 6 representing broader rural and landowner issues,
- 8 administrators from nature conservation agencies,
- 14 representing hunting interests, and
- 2 journalists.

The "administrators" mainly came from nature conservation agencies at various levels from regional to national or pan-European. The "environmentalists" included both conservation biologists (scientists) and members of nature conservation NGOs. A number of participants represented wider rural interests, such as landowners, farmers or peasants, and their views were attributed to which main stakeholder seemed most appropriate for the comment. Stakeholder participants came from 19 countries; Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Germany, Italy, Finland, France, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom in addition to some representatives of pan-European and Nordic umbrella bodies.

This participation provided a good representation of the key stakeholders and the diversity of national situations (ecological, social, and economic). The only obviously missing or under-represented key stakeholder groups were forestry, animal welfare, and nature-based tourism interests. It was also hard to find any practical way to represent the interests of the general public beyond the administrators who in principle represent governments elected by the public.

1.6 Conceptual framework and rationale

The underlying rationale was to try and broaden the discussion around large carnivores and place it into the wider context of how multiple interests can coexist in shared landscapes. A lot of work has been done in recent years on scenarios for European landscapes, from the perspectives of multiple disciplines. For the purposes of large carnivores we chose to view four alternative visions that have been proposed for the directions that land-use could take the landscape. Each vision exists in more

or less extreme versions with a diversity of elements, and both represent the physical landscape and way people perceive the landscape.

Vision 1: A conservation landscape. This vision is concerned about using the landscape to preserve biodiversity – both in terms of the diversity of species and the ecological processes by which species interact with their biotic and abiotic environment. There are currently many diverse versions of this conservation landscape vision. On one hand there are many advocates for the conservation of cultural landscapes where human activity is essential to maintain species rich habitats like meadows and grasslands. On the other extreme there are advocates arguing for the conservation and restoration of minimum intervention zones and wilderness. Essential to the internal differences within conservation visions are contrasting views of the appropriate relationship between humans and nature, and the fundamental issue of whether people should be viewed as a part of nature or something separated from nature.

Vision 2: A production landscape. This vision focuses on the importance of the landscape for producing goods important for humans. Agriculture, forestry and hunting have long been the primary interest groups represented in this vision, however, there is an increasing trend for other production interests such as energy (wind, hydro and biofuel) to be visible actors in this arena. There are many different visions of the desired degree of intensity of production, with alternatives ranging from extensive low intensity production to highly intensive production.

Vision 3: A recreation landscape. This is a recently emerging vision of the landscape where providing people with experiences is the main goal. This can range from low impact agro-tourism or nature-based tourism (such as hiking or bird watching), through hunting, to forms of recreation that require huge amounts of infrastructure and have high impacts, such as large hotels, ski-slopes or areas for off-road driving.

Vision 4: A heritage landscape. The idea of the heritage landscape is also a recently emerging vision. Its most formal articulation is in the European Landscape Convention. This views the whole landscape with its natural and human-modified habitats and both human structures and practices as being part of the European heritage. The preservation of this landscape can be done in a diversity of ways with more or less extreme views. One expression allows for living heritage, where change and development are possible. Another seeks to freeze a certain point in time into a museum like condition and rejects any possibility for change.

There are huge areas of overlap between these different visions, and very many compatibilities between elements and objectives. In fact, many goals from one vision are dependent on certain elements of others. For example, meadows and their associated species diversity very often depend on human mowing or livestock grazing, which can be a part of a production landscape, a heritage landscape and a recreation landscape. However, extreme versions of each vision will exclude more and more elements of the other visions. For example, real wilderness will by definition exclude most of the visions in their entirety with the possible exception of some low-impact tourism. Likewise, an extreme focus on food or energy production will exclude most other visions.

Our objective with the various tools applied at this workshop was to try and conceptually map the extent to which different stakeholders subscribed to these various visions of the future and to which extent their vision included elements of the other visions. This allows the identification of the extent

for support for a compromise vision that can be termed a multi-functional landscape as opposed to support for extreme visions that are incompatible with the idea of multi-functionality, or at least would greatly limit the numbers of functions that it could deliver.

Large carnivores are relatively flexible in terms of their ecological requirements and could persist in a wide range of these alternative visions. Wolves especially are very tolerant of human activities. However, because of the diversity of social, political, cultural and material conflicts with which they are associated conflicts can vary greatly within all scenarios both in terms of their nature and intensity. The main issue that the support for various scenarios reflects is the extent to which they are accepted as an element in the multi-functional landscape. Although large carnivores can persist as elements in a diversity of these visions, their ecological role is likely to be highly modified by humans in most of them, except for extreme wilderness versions of the conservation vision.

The workshop also aimed to try and encourage participants to think forwards towards desired futures, rather than present problems, so as to break free of past and ongoing conflicts.

1.7 Limitations of the workshop results

Although this workshop gathered a diversity of stakeholders from a variety of geographic regions that between them span a huge part of the range of situations under which large carnivore conservation is occurring, there are naturally some limitations in how far the results of this workshop can be generalised. Firstly, large carnivore conservation is occurring on such huge scales that literally millions of people are influenced by them, and influence them. Finding ways to represent all these people, apart from through the administrators from regional, national and pan-European institutions is a real challenge. Even from the ranks of the more easily defined stakeholder groups we lacked representatives of groups such as animal welfare, forestry and nature-based tourism. Finally, even from within the groups that were represented at the workshop, many more extreme factions are known to be very active in the media and politics. Therefore, the results of this workshop should be treated with some caution. They give a general impression of the views of some members of some stakeholder groups. However, this is the first such workshop to be held on this topic at a European level and represents a good foundation on which more work can be built.

2 Results from the break-out groups

2.1 Visions of the future for different stakeholder groups

Based on the statements made in the break-out groups we have attempted to compile an essence of the visions expressed by the different stakeholder groups by creating narratives from the points raised. These narratives are short, and may well be simplified, but we have attempted to extract the main issues discussed, and especially focusing on areas of agreement and concordance within the groups as well as areas of disagreement and divergence.

2.1.1 Administrators

The visions of the administrators followed the official policies of the organisations for which they worked. This group generally expressed a vision where large carnivores should be allowed to expand and occupy habitats that were suitable across Europe, and re-establish some of their ecological functions. The need for maintaining habitat connectivity was recognized. However, there was a widespread awareness of a need to balance many competing interests, find compromises and address conflicts with effective measures. It was hoped that large carnivores could be viewed as a positive experience for people. The need for population level management and cooperation between countries and agencies was acknowledged. This group attached a high value to scientific knowledge as an aid to policy implementation. The need for diverse stakeholders to feel that the management was just and fair was expressed, as was a need for inclusive democratic participatory processes.

2.1.2 Environmentalists

This group agreed on a vision of Europe where large carnivores would be widespread across the European landscape, where they would be regarded as a normal part of the landscape, and where their populations would be viable. The need for landscape scale land-use planning to hinder the loss of sufficient areas of inter-connected habitat was recognized. The group expressed a belief in the importance of scientific knowledge as a platform for decision making as well as information and communication, and the need for international cooperation. There was also an expressed desire to reduce the level of emotionality and polarization in the discussion around large carnivores. However, there were some different views about the level of conservation ambition. Some participants expressed a high level of ambition where large carnivores would be viable in demographic and ecological terms as well as having natural social structures. These visions included an expression of a future where hunters would no longer need to hunt either carnivores or ungulates because the ecological function of the large carnivores would have been restored. However, the majority of participants expressed a view where conservation ambition would be tempered with a need to find pragmatic compromises between multiple and diverse interest groups. A coexistence based on tolerance, finding solutions to conflicts and finding shared issues was desired by these participants. The potential benefits of permitting hunting of large carnivores was raised by some participants. Landscape level zoning between "wilderness" areas and multiple-use areas was identified as one approach to help integrate diverse interests.

2.1.3 Hunters

All the hunter participants recognized that large carnivores should be conserved in Europe at viable levels. There was even an explicitly expressed hope for species recovery and expansion. The visions of hunters also clearly stated a belief that large carnivore populations should be actively managed through hunting, both to maintain shyness, to limit populations at levels that contained conflicts with rural peoples, and to produce socio-economic benefits of large carnivore presence. The need for professional management, hunter training and sustainable population management was clearly expressed, as was the willingness of hunters to take part in monitoring and management activities. However, hunters did not want to be only used as "pest control" agents to kill problem carnivores, rather they expressed a desire to be included as partners in management. Hunters also expressed a clear desire for greater recognition. This concerned the recognition of the legitimacy of hunting interests, the recognition of their ecological role in managing ecosystems and of their role as conservationists. The desire for more local level management was also expressed.

2.1.4 Livestock producers

The livestock producers expressed visions where their activities would continue to exist in the future so as to maintain traditional practices, protect their legal rights, and maintain the rural landscapes. Participants from western and northern Europe (where wolves and other large carnivores are recovering after periods of absence) expressed clear views that large carnivores should be limited in terms of both numbers and distributions. They also expressed the view that there was a need to develop more effective means of both population control (of large carnivores) and of livestock protection. Issues of fear of large carnivores, and the impact that this has on other rural activities such as berry picking and outdoor recreation was also expressed by some of these participants. The special concerns of the reindeer herders of northern Fennoscandia were also identified. A desire for a greater level of local or bottom-up control was clearly expressed as well as a desire to make society more aware of the full socio-economic impact of large carnivores on livestock producers and rural people in general. In contrast, the few participants from southeastern Europe expressed the view that large carnivores were not such a huge problem relative to other threats given that their traditional livestock husbandry systems were still intact. The visions of these participants largely focused on a hope that these traditional lifestyles could be maintained intact.

2.1.5 Areas of agreement and disagreement concerning visions of desired futures

None of the stakeholder groups' visions excluded the presence of large carnivores in a future European landscape, although the livestock producers especially indicated a desire for limitations on their numbers and distributions. This was especially evident when it concerned wolves returning to areas in northern and western Europe from which they have been absent for prolonged periods. There was considerable variation both between and within stakeholder categories concerning the desired level of ambition for conservation. Participants from all stakeholder groups recognized the need for finding compromises between multiple competing interests, expressed a desire for a more informed and less emotional / polarized discussion, and recognized, either explicitly or implicitly, the legitimacy of the different stakeholder groups' activities in the landscape. There was also a widely held perception that large carnivore populations will need to be managed in some way to enable compromises to be reached. One exception was among some environmentalists who expressed a desire to see large carnivores replace hunters as regulators of large herbivores and to allow large

carnivore numbers to be regulated by their prey. The desire to find practical solutions to conflicts with livestock was expressed by all groups. One point of difference concerned the desired scale of management, with desired views ranging from local to international.

Overall, there was considerable scope within the visions of the diverse stakeholder groups represented to include both large carnivores and diverse human activities in shared landscapes, although as would be expected there were clearly major differences of opinion as to the respective weights that should be given to each interest and where the compromises should be drawn. There were also indications of underlying differences in terms of an understanding of the appropriate form of the relationship between humans and nature, especially to the extent which humans should interact with nature via activities such as hunting and livestock grazing.

2.2 Barriers to achieving these goals – organized by stakeholder group

This section describes the main barriers to reaching their visions that were identified by the different stakeholder groups.

2.2.1 Administrators

The participants with an administration background identified a large number of barriers to reaching their visions. The most prominent were a group of barriers related to rural people's attitudes towards large carnivore presence and the decision making process. It was pointed out that many rural interest groups have a low acceptance of large carnivore presence, and that these groups also felt disempowered and feared both the large carnivores directly and for the survival of their activities. The lack of local level engagement and local buy-in was frequently identified as a barrier, as was a lack of information, communication and dialogue both between stakeholders and between management agencies and stakeholders. However, it was also stated that another barrier was that the attitudes and norms of rural people were insufficiently known – and that there was a lack of knowledge about how to practically engage with rural people. It was pointed out that there was a widespread perception among many stakeholders that the administration had to deal with that a too rigid interpretation of EU legislation was leading to a perceived "over-protection" of large carnivores. A lack of funding for widespread conflict mitigation was mentioned. Ecological issues such as habitat fragmentation and illegal killing of carnivores were identified as barriers to reaching visions. The lack of holistic ecosystem level visions that integrated large carnivore conservation and stakeholder activities, including hunting, was also mentioned.

2.2.2 Environmentalists

The environmentalists identified a wide diversity of barriers to achieving their visions of an ideal future. Somewhat surprisingly given the human-modified nature of the European continent only a few of these barriers referred to ecological issues. One was the high degree of habitat fragmentation and lack of connectivity structures. The other was the small size of some source populations that do not provide much scope for expansion. Lack of an integration of scientific and ecological knowledge into management was mentioned, as was a wide variation in knowledge levels among stakeholders. Specifically mentioned were issues related to a lack of general awareness of the impacts of various wildlife management strategies and of the value of biodiversity in general. The other barriers were all institutional and social issues. Among the institutional barriers were the lack of sectorial policy integration, lack of management plans, lack of trans-boundary cooperation, lack of transparency in decision making, slow decision making, lack of institutional capacity, the impossibility of attempting to provide global solutions to diverse local contexts, and the rigidity of interpretation of European legislation. The abandonment of traditional livestock husbandry methods was identified as a cause of conflict. Many environmentalist participants identified a failure for diverse stakeholders to work together and a lack of communication and dialogue with rural people as a barrier. Interestingly some environmentalists identified the over-focus of attention on large carnivore issues as a barrier to their conservation, as well as an expression of concern that there were cases where an over-expenditure of funds on certain actions was sending out a counter-productive message that carnivores were more important than people. There was also a concern that many rural people lacked a real will to accept that they should share space with large carnivores.

2.2.3 Hunters

Hunters also expressed a diversity of points of view concerning barriers towards their future visions. Only a few of these concerned ecological issues such as a belief that prey lacked anti-predator behavior in areas where lynx and wolves recolonized. There were also mentions of a few technical wildlife management issues, such as the issue of supplementary feeding of bears (widespread in southeastern Europe) and the challenge of managing both ungulates and carnivores in systems being influenced by climate change. The loss of traditional practices with respect to living with large carnivores was also mentioned. The remaining barriers were institutional and social in nature. Hunting participants mentioned some issues related to lack of knowledge concerning identifying social and economic carrying capacities for carnivores and about ways to quantify rural norms and attitudes as barriers. Lack of cooperation and mutual understanding between stakeholders was mentioned by several participants. Based on specific statements this was attributed to a lack of tools for dialogue, widespread misperceptions of hunters, prejudice, the diversity of values, dogma and a lack of will to compromise on the part of some stakeholders. Among institutional barriers, issues such as the lack of competence, objectivity and timely action by agencies was mentioned, as was a perception of complexity, rigidity, and lack of transparency concerning European level legislation. Hunters also expressed the view that a lack of local empowerment and an attempt to react to a diversity of local situations with global models were barriers.

2.2.4 Livestock producers

In many ways the livestock producers' perceptions of barriers mirrored that of the other groups. From an ecological perspective the only issue was that of too many large carnivores in the landscape. The practical difficulties in culling large carnivores were also identified. A number of technical barriers were mentioned such as the loss of traditional livestock protection measures and the difficulty of developing new systems in areas where the traditional measures had been lost. Technical administrative issues such as the slow payment of compensation and a shortage of funding to develop new husbandry practices were also identified. Institutional issues such as a failure of agencies to implement management plans, perceived contradictions between different policies, and a general dissatisfaction with European level legislation that was regarded as being rigid and overprotective of large carnivores were mentioned. Centralised power was identified as a barrier. Many stakeholders from the livestock group also identified the diversity of points of view as a barrier, although their main focus was on the lack of mutual understanding and lack of respect shown between different stakeholders. It was also felt that some groups treated livestock interests with arrogance and actively misrepresented their interests and values.

2.2.5 Areas of agreement and disagreement concerning barriers to achieving desired futures

There was a striking degree of overlap and symmetry between the different groups in how they articulated their views of the barriers that exist to achieving their diverse visions of the future. The areas of overlap included;

(1) Almost all stakeholder groups felt that their interests were not understood by the other stakeholders, that there was not enough dialogue or cooperation between stakeholders. It was clearly stated that there was too much dogma, arrogance and mutual misrepresentation in the debate. Potentially because of this lack of communication there was also a feeling of a mutual lack of

will among other stakeholders to accept the underlying premises and compromises of their respective agendas.

(2) All stakeholder groups underlined the problems with applying global solutions to diverse local problems, and all groups had participants who were critical in some way of EU level legislation and policy that did not show enough flexibility for local situations.

(3) There was also a widespread perception of a lack of coordination and compatibility between different policy areas – such as environment, agriculture, rural development and transport – as well as a lack of a holistic landscape / ecosystem level vision that included multiple interests.

(4) All groups identified barriers associated with a lack of understanding of the attitudes and norms of rural people as well as a lack of socio-economic analyses of the impacts, or benefits, associated with large carnivore conservation.

(5) The fact that livestock husbandry practices in many countries have lost their adaptation to large carnivores was recognized by all stakeholder groups, as were the practical and economic challenges with reinstating these practices.

There were few striking differences between stakeholder groups concerning barriers, although the same barriers could well have been operating in different ways for the different stakeholders. Although all stakeholder groups acknowledged that there was a need for much more local level engagement, there was an underlying, but poorly articulated, difference with respect to how far this should go in terms of devolution of decision making power.

2.3 Barriers to achieving these goals – organized by category of barrier

Because barriers were not very different between stakeholder groups (see above) it makes sense to summarise them under more thematic headings. This is because the barriers mentioned in this discussion tend to reflect the conflicts that people perceive, and it is therefore important to understand them conceptually. This structure has also allowed the identification of potential solutions to overcome these barriers.

2.3.1 Knowledge related barriers

This set of barriers focused on two aspects of knowledge. The first related to many participants pointing out that there was a need to greatly improve the science – policy interface and see more scientific knowledge being used in management and policy development. It was also pointed out that there should be greater efforts to build on local and traditional knowledge and experience as well as finding ways to better integrate local and scientific knowledge. A second set of issues related to areas where knowledge was lacking. The most commonly mentioned concerned the lack of a detailed understanding of the full social and economic impacts, both positive and negative, of large carnivore conservation on rural communities. It was pointed out that in many areas this concerned the combined impact of multiple species. Another knowledge gap identified concerned the impact of hunting large carnivores on their demography, social structure and levels of conflict.

2.3.2 Institutional capacity

Many participants indicated that poor institutional capacity was a barrier to their visions being achieved. Issues mentioned included a widespread low level of competence, a lack of transparency, a lack of objectivity, a failure to utilize knowledge, slow administrative procedures, lack of proactive visions, and a failure to develop integrated plans or implement existing plans. The failure to effectively reconcile many competing interests was highlighted, as was the lack of budgets to fulfill the needed tasks associated with adapting to large carnivore presence.

2.3.3 Polarisation, communication, and relationships between stakeholders

The high degree of polarization and the strong emotions that characterize the debate over large carnivores was also identified as a major barrier. Stakeholders from all groups claimed that their counterparts in other groups were unwilling to cooperate or compromise. It was also felt by all groups that they were not properly understood by the other groups and that they were often misrepresented or met with arrogance and prejudice. A commonly mentioned barrier to large carnivore conservation was the perception that many rural people had not accepted the underlying premise that large carnivores should be present in the landscape. However, this was countered by the view that the role of the stakeholders in the landscape, or the impact of large carnivore conservation on their activities, was not well understood by other stakeholders or the public. A mutual lack of understanding, trust and respect between different stakeholder groups was frequently mentioned. A lack of communication was mentioned as a partial cause of these problems.

2.3.4 The need for an ecosystem level policy approach

A failure to integrate diverse policies into a holistic ecosystem approach was often mentioned. This concerns direct conflict issues such as reconciling agricultural and environmental policy and more indirect issues such as the way in which transport and recreational infrastructure fragments the landscape and reduces connectivity. As well as failing to address practical issues concerning reconciling the integration of diverse activities into shared landscapes, there was an often voiced feeling of uncertainty concerning the future of various stakeholder activities in the future. The concern was both due to uncertainty about the practical future for the activity and the political will to set the necessary policy frames for there to be a future. This was voiced by hunters concerned about the future of hunting, by livestock producers concerned for the future of their herding, and environmentalists concerned about the future fate of large carnivores and biodiversity in general.

2.3.5 Diversity of values

There was clearly an awareness of the diversity of values and economic interests held by the different stakeholder groups, and the extent of this diversity was viewed as a barrier for various groups to achieve their visions. As well as a pro and anti-carnivore line, the tensions between urban and rural values were identified. The issue of wilderness, and how different people can interpret the concept in different ways in a European context was symbolic of these tensions and appears to symbolize some fundamental differences in how people see the appropriate place of humans in nature. This was further expressed in statements about the value of biodiversity and extent to which humans should value nature for its economic benefits or other intrinsic benefits. Another area where

this diversity became apparent concerned the use of funds, with some claiming that too much was spent on conservation while others claimed that too much was being spent on agricultural subsidies and compensation.

2.3.6 Legislation

Some elements of European level policy and as well as national legislation was thought by some to be a barrier largely due to a perceived rigidity in implementation of various legal instruments, coupled with a lack of science being involved in the processes and a perception that there was not enough subsidiarity or flexibility to adapt to local conditions. Specifically, there was a perception of overprotection of large carnivores to a level that was not warranted by concerns for population viability. The difficulty in defining key concepts such as Favourable Conservation Status was mentioned. In addition, there was a perception of there being a lack of coordination between different European policy sectors, especially between agriculture and environment.

2.3.7 The scale and process of decision making

Issues concerning the spatial scale at which decisions are made were frequently made. On one hand there was a clear message that there was need to provide more decision making power to more local levels in order to allow more locally adapted policies and empower locals so as to gain greater acceptance and buy-in. The lack of stakeholder involvement in decision making was also identified as a problem. On the other hand, the need for large scale coordination of conservation planning – often across international borders – was mentioned as being crucial to ensure effective conservation of wide ranging species like large carnivores.

2.3.8 Livestock husbandry

The loss of traditional livestock husbandry methods that include protection practices in many parts of Europe was identified as a major barrier. It was also pointed out that it was difficult to re-adapt to these methods.

2.4 Potential solutions and strategies to overcome the existing barriers

Based on the break-out groups' prioritization of the barriers the groups held discussions concerning possible solutions to the barriers. There was not time to reach any consensus on the different measures, and certainly there were some solutions to one stakeholder's problems that were perceived as making another stakeholder's problems even greater, or at best were conflictful. There was not time for all barriers to be addressed, so these proposed solutions are not exhaustive, but should represent some first good ideas to address the barriers that were either regarded as being most important, or at least most amenable to intervention. There was some overlap between topics discussed in the different break-out groups – so the following categorization reflects an attempt to integrate the slightly different ways that things were structured in the different groups.

2.4.1 Solutions to knowledge related barriers

Participants recognized a need for a three pronged strategy within the field of knowledge related barriers.

Firstly, there was recognition of a need to better integrate science into all levels of large carnivore policy development and management. It was felt that there was a need to put strong pressure on the system to formalize the inclusion of objective scientific knowledge as a basis for decision making.

Secondly, participants underlined the need to find ways to improve the public awareness and communication of scientific knowledge. The following potential mechanisms were identified;

- Improve environmental education in schools to build a better societal awareness of real world issues.
- Engage journalists and the media as partners in communication.
- Promote the value of communication among scientists – encouraging them to communicate directly with the public as they are perceived as being more objective than other interest groups. However, it was also suggested that scientists should develop a sense of modesty concerning the limits of their knowledge.
- Find the good story tellers and encourage them to use their skills.
- Communicate science in an understandable way using a language that people can understand and relate to.
- Improve the perception of objectivity by engaging in cooperative communication where various stakeholder groups and / or panels of experts produce joint information on which there is a consensus understanding.
- Translation of some scientific articles into local languages to allow the nuances from the original research to come across, avoiding the tabloid impact of a focus on headlines.
- Conduct demonstration projects to show that certain measures, such as livestock protection measures, actually work in practice. In part this means readopting the old ways of doing things, as well as testing new technologies.
- Invest in information campaigns.

Thirdly, a number of knowledge gaps were identified.

- Participants identified the need for an improvement in large carnivore monitoring methods, preferably involving stakeholders in the process that could reduce some of the conflicts over numbers that are widespread.
- A need to understand the impacts of the widespread supplementary feeding of bears in southeastern Europe.
- The need to gain a better understanding of the social and economic costs and benefits for rural communities associated with large carnivores was identified by many.
- The need to better include knowledge about the social aspects of conflicts into decision making
- The need to develop a better understanding of ecosystem functions, especially the respective roles that large carnivores and hunters can play, was identified.
- There was also an expressed need to develop and communicate best practices for stakeholder engagement processes.

It was also underlined that there was a need for a greater degree of transparency and involvement in research and monitoring activities.

2.4.2 Solutions to barriers related to extreme polarization, acceptance and stakeholder relationships

While it was recognized that it was hard to change values and emotions participants identified a number of measures that could be pursued.

- There is a need for the responsible authorities at regional and national levels to be more visible and accessible to stakeholders. It was also felt that they were not taking responsibility for the consequences of their large carnivore conservation policies, as there was not sufficient investment in mitigation activities.
- There is a need for the media to become more responsible and stop presenting stereotypical and sensational accounts of everything.
- Integrate diverse stakeholders into cooperative activities, such as monitoring and communication, so they can gain experience of working together.
- Conduct studies to better document the diversity of values so different groups can gain insights into each other's perspectives.
- Normalise the presence of large carnivores in the landscape by reducing some of the special attention they get – such as through very intensive monitoring. It should be noted that this recommendation partly conflicts with another expressed desire to improve monitoring so as to give people a sense of control. However, the apparent discrepancy is mainly a matter of scale.
- Build on the experience that exists within stakeholder groups from across Europe. A specific example was to use rural people from eastern Europe where large carnivores are not a subject of fear to communicate with their counterparts in northern and western Europe where fear is widespread.
- Invest in dialogue processes with professional facilitators that bring stakeholders together at different scales (local, national, European) to foster greater understanding respect and consideration.
- Involve stakeholders in the development and implementation of management plans.

2.4.3 Solutions concerning spatial scale of management

Although there was some disagreement between stakeholder groups as to the best spatial / political scale for making decisions, it was suggested that a multi-scale approach could be adopted, with different decisions being taken at different levels. It was also pointed out that local decision making could be more acceptable if it made greater use of scientific knowledge as well as local knowledge. The establishment of local "emergency teams" who react to specific acute situations (such as with individual carnivores who develop problematic behavior or need to be rescued and acute depredation events) could be a suitable measure for local empowerment. However, the need for trans-boundary coordination was also heavily underlined in previous discussions.

2.4.4 Solutions concerning adjustment of livestock husbandry practices

The need to adapt livestock husbandry practices to the presence of large carnivores in areas where the traditions have been lost was recognized by the participants, however it was also recognized that it was a challenge to generate a will to change. From a technical point of view it was suggested that much greater effort be made to communicate the results of scientific and technical studies of the suitability of different methods as well as encourage the transfer of knowledge and experience

between herders with different experience. The continuity of traditional practices in parts of eastern and southern Europe provides much scope for this form of experience transfer. It was also clearly stated that in order to bring about change there was a need to provide funding for mitigation measures and adjust other financial mechanisms to facilitate and motivate change. Demonstration projects were specifically mentioned. Representatives of livestock stakeholders also pointed out they felt there was a need to maintain areas with no, or very few, large carnivores.

2.4.5 Legislation

It was hoped that the EU could begin to adjust the way it implements its environmental policies. Two main areas were identified. The first was an expression of hope for a greater degree of pragmatic flexibility in interpretation of legislation that could take the diversity of local situations into account. Subsidiarity was a key phrase in these discussions. The second concerned a hope for a greater degree of objectivity and science in the way that policy was interpreted. The specific issue referred to in almost all contexts was that of the ability to shoot large carnivores under derogation or annex V status.

2.4.6 Specific issues

In addition a number of potential solutions were mentioned that do not fit into the previous categories.

- The need to cull individual large carnivores (wolves and bears) that do not show the desired level of shyness in order to reduce perceptions of fear.
- The need to engage in large scale zoning that excludes large carnivores from some areas of high conflict potential-
- The potential to engage in private – public partnerships to find innovative solutions.
- The potential to show the positive economic aspects associated with large carnivores from nature-based tourism.

3.0 Results from the Q-sort analysis

3.1 The Q sort method

Q method is useful in environmental studies to reveal different social narratives existing on a particular issue. The method consists in strategically designing a list of *Q statements* which are an expression of individual opinions. In our case we designed the statements (see Appendix 3) so they express the different visions of landscape as described in the conceptual framework (section 1.6). Then, we asked *Q participants* to express opinions about the different *Q statements* by sorting them relative to each other along a gradient from "agree more" to "agree less". The result is an individual Q sort. Once collected, Q sorts are analysed through correlation and factor analysis. These analyses show the patterns in the way *Q participants* are associating opinions through the way they organize *Q statements*. These analyses are the quantitative step in the process. Then the results obtained are interpreted through the elaboration of different narratives. This interpretation is helped by the data we obtained from the different Q participants, and notably the way participants commented on the statements they put in the extreme ends of the Q sort.

Using the offline version of *FlashQ* software during the meeting held in Brussels the 25th of February 2013, we obtained 21 *Q sorts*. Then we put an online version of the same software in 10 different languages and we sent a mail to all participants to encourage them to participate to the survey. We obtained 12 additional *Q sorts* with the online version.

Using the *PQmethod* software, we ran statistical analysis of the sorts obtained. Using three factors appeared to be sufficient to explain most of the variation (29% for the first factor, 24% for the second, and 9% for the third factor, i.e. 62% of the total variation). The first two factors already explain most of the variation but using a third factor permitted a third group to emerge with its specific vision.

As a consequence, all respondents included in the analysis correspond to a "narrative" defined by a factor (1, 2, or 3) and the z-score of the different statements in this factor. Ranking the z-scores allows us to build an ideal sort for each factor. The statistical analysis defines the typical statements (ranked significantly differently between a given factor and all other factors) and thus to build a narrative corresponding to each factor. In addition, we also obtained a list of the consensus statements i.e. those that were not ranked differently by any factors.

3.2 Descriptions of the three different narratives

Narrative 1: 17 informants constitute the first narrative. All stakeholders categorized as environmentalists (10/10) are in this group, as well as most of the administrators from nature conservation agencies (4/5). Only one hunter is in this group (1/9). Two stakeholders representing farmers' interests (2/9) are also in this group but one of them has more a hybrid position between narrative 1 and narrative 3.

According to the participants who clustered into narrative 1, high biodiversity is always positive for humans. They mainly oppose the widespread construction of infrastructure (highways, railways,

forest roads, hydropower plants, and windmills) and the freedom for forest owners to plant whichever tree species maximizes their profit.

They consider the continued presence of large carnivores as a source of pride and as a necessity for the functioning of European ecosystems. For them, large carnivores should return to all places where they formally occurred. The participants in this cluster believed that large carnivores don't have any major impact on the quality of rural life. In case they have an impact, they believe it is the duty of livestock owners to protect their flocks against large carnivores.

Despite the diversity of opinions expressed in this group, the general vision is not focused on extreme wilderness visions. People in this group tend to accord importance to the preservation of interactions between humans and the environment as well as wild species and they also show concerns about the preservation of traditional breeds.

Narrative 2: 13 informants define the second narrative. They are mainly from the hunter (7/9) and the livestock producer (4/9) stakeholder groups. One administrator from a nature conservation (1/5) agency, as well as one stakeholder representing land owners (1/1) were also included in this narrative. People defining this narrative oppose the idea that restoring wilderness should be a goal for conservation. They rather consider that nature conservation should preserve the way people interact with the environment as well as the landscape produced by traditional rural activities, considering that rural abandonment doesn't favour biodiversity. Although this group is opposed to the idea of wilderness, it also considers that infrastructure development like wind parks and hydro-electric power plants, as well as uncontrolled tree planting for maximal production can be threats. Among the interactions between humans and their environment, hunting is seen as necessary to control wild animals but also as having a positive social function in rural areas. In addition, hunting is considered as a potential solution to increase rural acceptance of large carnivores, all the more as they believe that these species do not only survive in wilderness and fear that their presence has a major negative impact on the quality of life in rural areas.

In order to achieve their narrative, people in this group strongly agree that decisions about land use and biodiversity conservation should primarily be made at the local level.

Narrative 3: Four informants defined this third narrative. Three of them belong to the livestock producer stakeholder group (3/9) and one belongs to the hunter stakeholder group (1/9). Compared to people defining narrative 2, people defining narrative 3 appear to be even more focused on their opposition to the concept of wilderness and the consequences it represent for the maintenance of traditions and cultural heritage.

Thus, this group voices a strong opposition to restoring wilderness to as much Europe as possible as a goal for conservation, especially if it is associated with an intensification of agriculture in other parts. Traditional farming practices have to be maintained even if not cost-effective, as well as traditional livestock breeds. Landscapes produced by traditional farming and livestock grazing should be preserved, not only for cultural heritage but also because rural abandonment doesn't favour biological diversity in Europe.

While the production of a diversity of local and traditional food products is a source of national pride, it is far from the case for the continued presence of large carnivores in European landscapes. Not

only are large carnivores believed to have a negative impact on the quality of rural life but they are also seen as threatening small livestock breeders more than big producers, and thus impacting more traditional activities.

3.3 Discussion

The results of this Q-sort survey have to be treated with caution. Not all stakeholders present in the Brussels meeting participated in the survey. Moreover, it must be remembered that people's ability to express themselves is limited by the statements provided, although we chose statements carefully in a way to represent the discourses that are commonly expressed in large carnivore related discussions. Nonetheless, all methods have their limitations and this one allows us to draw some general conclusions which can help understanding some issues of how different stakeholders relate to each other.

A first general remark is that there is a relative continuity among stakeholders concerning the opinions they chose to express through this survey. Even if they statistically clustered into different narratives, there were very few strong oppositions appearing in the opinions expressed by people in our sample. This result confirms the impressions from the small-group discussions.

The only statement with a strongly positive z-score in one factor and strongly negative in others is the statement 5 (*the presence of large carnivores has a major negative impact on the quality of life in rural areas*). People defining narratives 2 and 3 strongly agree with it whereas people defining narrative 1 disagree. It thus appears that environmentalists and people from administration of nature conservation agencies could be underestimating the way rural stakeholders perceive the impact of large carnivores on rural life. The other statement on which a narrative agrees and another one disagrees is the statement 13 (*the continued presence of large carnivores in European Landscapes should be viewed as a source of pride*). Whereas environmentalists and environmental administrators can see the presence of carnivores as a source of pride, people in narrative 3 are strongly opposed to this idea. It has to be noticed that people in narrative 3 are mainly from countries from which carnivores are only just returning after having been extirpated in recent history. Therefore, one possible explanation is that presumably the success in eradicating large carnivores from rural areas was considered as a source of pride until recently, and traditional activities developed in their absence are not very compatible with their comeback. Apart from these two statements (statement 5 and statement 13), there are no apparent strong oppositions between the different narratives, and no other statements are strongly agreed on by some groups (+3 or +2) while disagreed on by other groups (-2 or -3).

For other statements an analysis of the differences between each factors (1 vs. 2; 1 vs. 3; 2 vs. 3) shows that differences between z-scores of the different factors are rarely important and they generally correspond to statements considered very important from some narrative (negatively or positively), and which are given less importance from other narratives (as shown in the tables 1, 2, and 3 in Appendix 4 and for a list of statements Appendix 3).

The statistical analysis also provides a list of consensus statements, i.e. a list of the statements for which there are no significant differences between any pair of factors.

It has to be noticed that all three groups significantly agree on the idea that nature conservation in Europe should preserve the way that people interact with nature as well as the wild species (statement n° 33) and on the national pride to have a production of a diversity of local and traditional food products. All three groups also disagree with the desirability of build wind-parks and hydro-electric power plants wherever it is technically possible and on the absence of restriction for owners in the way they renovate historical buildings.

It thus appears that all three groups are quite sensitive to the preservation of sustainable relationships with the environment notably through traditional activities and of elements of traditional landscapes, protecting them from uncontrolled development of energy production infrastructures.

Rather than being opposed to other groups, each group's narrative expresses its main concerns for the future of their activity and/or way of life.

The first group (narrative 1) clearly expressed a concern for environmental destruction provoked by infrastructure development and overexploitation. Even if this group appears to hope for an increase in biodiversity as well as an expansion of carnivore populations, wilderness doesn't appear as a clearly stated goal and they rather hope to preserve sustainable interactions between humans and their environment.

The second group (narrative 2) expresses a concern for maintaining a control over nature in general – including large carnivores, notably through hunting, and for preserving traditional rural landscapes. Above all this group advocates decisions concerning conservation and land use being made at a more local level. They consider both uncontrolled infrastructure development and wilderness as threats.

The third group (narrative 3) is clearly concerned about the future of traditional activities and the associated landscapes and products. They feel all this is threatened by the concept of wilderness, large carnivores, rural abandonment, and agriculture intensification.

3.4 Conclusion

As a conclusion, the results of this survey show:

The different groups corresponding to the different narratives are not strongly clustered, rather they represent points along a continuum. The different stakeholders are not randomly spread inside these groups. Narratives 1 and 2 are clearly defined by environmentalists and administrators of environmental agencies on one side, and hunters and farmers on the other side. Narrative 3 is also defined by farmers and hunters and could appear as a slightly more radical branch of narrative 2.

Despite the different narratives, there are no strong oppositions between the different stakeholder groups. The question of the perception of the severity of the negative impact of large carnivores on rural areas remains a central point of discord between environmentalists and administrators of environmental agencies on one side, and hunters and livestock breeders on the other side.

Whereas hunters and livestock breeders express a concern for the threat posed by the concept of wilderness and its consequences, environmentalists who participated to the survey don't appear to

directly advocate wilderness as a conservation goal. Rather, they favoured the development of sustainable interactions between humans and their environment.

As a consequence, considering the limitations implied by this survey, we can nonetheless consider that there are no fundamental oppositions between stakeholders. No respondents were advocating a landscape purely dedicated to wilderness or to production activities. All of them more or less agree on the multi-functionality of landscape to the extent it allows the preservation of traditional human activities for group 3, it ensures a high level of biodiversity including large carnivores for group 1, and it is maintained under human control through hunting and more local decisions for group 2.

4 Summary of plenary sessions

4.1 Invited stakeholder presentations from the morning plenary lectures

Tapio Juhani Rintala – Sheep farmer from Finland

This presentation describes the recent return of wolves to a rural area in western Finland from the point of view of a sheep farmer. It described the depredation on sheep farms and the killing of dogs and a horse. Although electric fencing and night-time enclosures had been introduced this was regarded as creating extra work. The negative impact of wolves on the quality of life was described, including the observation that the family's use of nature and the outdoors had decreased because of fear. The presenter described his difficulty in understanding why wolves should be protected in Finland when they were so abundant in neighbouring Russia and explained that he believed that wolves should be present in the "wilderness" and not in "fields and yards". A desire to see wolves adopting a greater degree of shyness was also expressed.

Yves Lecocq – Federation of Associations for Hunting and Conservation of the EU

The presentation gave a brief introduction to hunting in Europe, explaining that there were 7 million hunters from diverse backgrounds that are active on 65% of the European landscape. It then went on to explain FACE's policy on large carnivores. This states that they believe that carnivores should be managed for long term viability (based on science and at the population level) and for acceptance by local people (that would require adapting management to local situations and establishing clear and predictable frameworks). The need for local involvement and balancing biological and social carrying capacity was underlined. The range of conflicts that hunters experience with large carnivores was described. It was explained that hunters sought to be involved in large carnivore management because they were influenced by carnivores, had an influence on them, and were actively interested in them. The potential benefits of allowing well regulated hunting of large carnivores were explained.

Luis Suarez – World Wide Fund for Nature – Spain

The talk opened by recognizing the existence of real conflicts between rural people and large carnivores, but went on to point out that there were solutions to many of these, and that large carnivores had important ecosystem functions as well as making areas more attractive to many people. In terms of preventing livestock depredation it was explained that traditional practices needed to be recovered and adapted to modern circumstances on a large scale which would require the active involvement of the agricultural sector. The potential to use large carnivores as a quality marketing tool was highlighted. The talk concluded by stating that the knowledge and expertise existed – it just needed to be implemented in a way that was science based, and managed to include diverse local views while also coordinating actions at the population level.

4.2 Closing plenary session with spontaneous contributions from the participants

Seventeen stakeholders took the opportunity to speak. These represented administrators at national and pan-European levels, sheep farmers, reindeer herders, hunters, conservation NGOs, conservation biologists and wider rural interests.

None had negative words to say about the day's workshop and virtually all took the opportunity to say positive words about the meeting and the opportunity to engage with the Commission and other stakeholders in this way. Many clearly stated that they would like to see similar meetings continue and be complemented by more local level initiatives that created opportunities for dialogue.

The following summarises some of the take home messages presented by the different categories of stakeholders. The contributions of different individuals within the same category have been integrated to produce a more coherent and concise summary.

4.2.1 Administration

- It was useful to gain insight into the diversity of situations found across Europe.
- Clearly the situation was very dynamic in many areas.
- It was positive to hear so many voices willing to work together to achieve some form of coexistence.
- There was a need for a scientific platform in management that included evaluations of the impacts of management actions.
- That common populations needed common monitoring protocols in order to compare data.
- That there was a need to communicate the goals of the Habitat Directive and work towards these goals in a flexible manner
- There was a need to understand the social aspects of conflicts and realize that money could not fix all problems.

4.2.2 Environmentalists

- One speaker pointed out that the status of large carnivores was diverse and dynamic across Europe and that the implementation of legislation should adapt to the different situations. However, another argued against flexibility because it may lead to a weakening of conservation ambition.
- The need to focus on populations and ensure that neighbours worked together, was underlined. The need for all countries to contribute in a common effort was mentioned.
- There was a desire to see a clear statement from the EC that large carnivore conservation was going to be taken seriously.

- It was pointed out that it was one thing to argue for flexibility in order to be able to shoot large carnivores but that people must not forget that prevention through better husbandry practices is the only real solution for conflicts with livestock.

4.2.3 Livestock interests

- It was pointed out that all countries are facing similar challenges with livestock and large carnivores.

- It was expected that the EC take responsibility for the consequences of the Habitats Directive and come up with funding for livestock protection measures that work.

- The livestock producers and reindeer herders both expressed concern for the future viability of their professions and cultures, requesting rapid action to address conflicts.

- Speakers from southeastern Europe pointed out that effective livestock protection measures are essentially traditional measures and hoped that the EC's support for large carnivore conservation could also support traditional ways of living and thereby traditional livestock breeds.

- There was a clear expression of the need for local involvement in large carnivore management.

4.2.4 Hunters

- There was a clear expression of mounting frustration on a local level where hunters were feeling subject to a top down control by a distant Brussels.

- There was a need to better document the impacts of large carnivores on rural communities.

- It was hoped that the EC could adopt flexible approaches, focusing on the attainment of the goal of the Habitats Directive which should be measured in terms of the status of the population.

- The threat of taking countries to court for hunting of large carnivores was viewed as being likely to seriously escalate conflicts.

- There was a need to integrate large carnivore conservation into existing wildlife management institutions and practices.

- The advantages of hunting large carnivores needed to be realized.

5 Conclusions

In this section we try and bring together the main conclusions that came from the plenary discussions, the break-out groups and the Q-sort analysis. The different methods appear to have complemented each other well and generated a wide diversity of feedback in both structured and unstructured forms. In areas where the methods collected data on overlapping issues there was a high degree of concordance, yet each provided additional insights into the issues that led to a fuller picture. That being said, this only attempts to represent the views expressed by the participants at the workshop. While these came from a diversity of stakeholder categories and geographical backgrounds they are obviously not fully representative of the wide diversity of views that exist on the topic. There are many extreme points of view on all sides that are commonly voiced in the media that were not heard in the workshop and some stakeholder groups were not represented at all.

The results of this workshop revealed some clear differences in terms of interests and priorities of the different stakeholder groups as could be expected from their different stakes in the discussion. However, there was a wide diversity of points of view expressed by all stakeholder categories. Among the participants at this workshop there was certainly no support for the stereotype of a highly polarized "pro-carnivore" vs "anti-carnivore" dichotomy. In many ways it would be best to consider the points of view expressed as falling along a more or less continuous gradient. While the extreme ends of this gradient may be very far from each other, there was also considerable middle ground. The existence of this middle ground provides scope for moving further.

It was also apparent that large carnivore issues were deeply imbedded in a diversity of other issues concerning multiple policy sectors that influence the environment and rural life, including forestry, transport, agriculture and development. Although this makes the issues of dealing with large carnivores much more complex, it also provides scope for reminding many stakeholders of the existence of much common ground which tends to be forgotten in the often heated discussions over large carnivores.

One message that came across was the diversity of local situations. This is partly reflected in the fact that the status of large carnivore populations varies across Europe from large and healthy to small and endangered. However, the major division seemed to be between areas in western, central and northern Europe where large carnivores are recovering after a long absence and areas in southern and eastern Europe where they have been present for longer. These differences appeared to greatly influence the types and intensities of conflicts that were associated with large carnivore conservation. The discussions tended to be very much wolf focused, with only a secondary focus on bears, lynx and wolverines, implying that it may well be valuable to disentangle the debate into species specific debates rather than focusing on the broad umbrella of "large carnivores".

The following highlights some of the issues where there was broad agreement between the different stakeholder categories.

- They expressed a broad interest in, and concern for, nature. Although the different stakeholders may mean quite different things by "nature" there was common ground in an opposition to widespread development of energy producing infrastructure (wind and hydro power), forestry monocultures and intensive agriculture.

- They expressed a need to address issues related to livestock depredation using effective and locally adapted methods.
- They expressed a need to improve the capacity and competence of institutions and achieve a better coordination of policy and a greater degree of local support for these policies.
- All stakeholder groups expressed concern for the future of their activity or interest because of pressures coming from other stakeholder groups.
- The stakeholders argued that they were not properly understood by their counterparts in other stakeholder groups, and felt that interactions were associated with arrogance, prejudice, lack of respect and misrepresentation. Information, dialogue and improved communication were mentioned by all as means to improve this situation.
- There was a widespread support for the adoption of flexible approaches to dealing with large carnivore management that takes into account the diversity of situations occurring across Europe.
- Many stakeholders from a diversity of backgrounds had a common perception that legislation was tending to favour protectionism of individual carnivores, rather than focusing on the viability of populations, and that this bias was problematic for building acceptance.
- There was widespread support for adopting a more knowledge based approach to management, preferably where scientific and local knowledge could be combined. Population monitoring was frequently mentioned as an area in need of better investment and where the two knowledge forms could be integrated.
- All groups also called for a greater need for multidisciplinary scientific approaches to obtain better data on the impacts of large carnivores on rural communities, although as we shall see below, this issue is also quite divisive.
- There was a clearly articulated need to engage with a far wider public than the classic and readily identifiable stakeholder groups.

Despite the existence of this common ground, there were also clearly areas of disagreement and some themes that contain potential for disagreement.

- Although it was not strongly advocated by any of the environmentalist stakeholders in this workshop, many of the livestock and hunting stakeholders found the emerging wilderness discourse to be very controversial. This is quite understandable as it implies by definition the end of their way of life, be it hunting or livestock grazing. There was widespread awareness of the fact that large carnivores do not need wilderness.
- There was very clear disagreement concerning the impact that large carnivores have on the quality of life among rural people. Most of the livestock and hunting stakeholders found the tendency of

environmentalists to down-play the negative impacts of large carnivores to be very provocative. However, it must be stated that the livestock and hunting stakeholders from eastern and southeastern Europe did not view their impact so negatively. On the other hand the environmentalists, with some support from hunters, wanted to highlight the ethical, ecological and economic benefits that could potentially arise from large carnivore presence.

- Environmentalists and administrators tended to favour larger scale coordination of management at the spatial scale of carnivore populations, whereas the other stakeholder groups tended to argue for more local influence and local control. Although these two trends may appear to be in opposition, some participants pointed out that they can be integrated through multi-scale approaches where different decisions are made at different levels.
- There were also clear differences in the level of ambition for large carnivore recovery. While some environmentalists argued for restoration over most of the landscape and the restoration of natural ecological processes, some livestock stakeholders argued that large carnivores should be heavily zoned, being mainly limited to protected areas or some distant wilderness, and their numbers regulated outside these areas. However, most participants seemed to have more nuanced views than these extremes.

In terms of the landscape scenarios that we identified at the start, we found clear support from almost all participants for adopting a compromise scenario that integrates elements of conservation, production, heritage and recreation in the same landscape. Although there may well be very large differences in the given weights attached to each element by the different stakeholders, most of the participants acknowledged the legitimacy and value of the others' interests within a shared space. This acceptance of the possibility and need to adopt a multi-functional landscape approach opens the way for a variety of processes to negotiate potential compromises that secure the interests of all parties. However, it is important to be aware that large carnivore conservation is like any other political issue and that these negotiations and compromises are likely to constitute a continuous process for which there is no definitive "solution". Rather the goal should be to ensure that the processes are conducted in a constructive manner based on mutual respect and understanding. It would also be advantageous for all parts to try and disconnect the large carnivore debate from other political debates and focus on issues for what they are rather than for their symbolic content.

Based on the discussions and input from this workshop, and the other background documents produced under this contract, it is possible to identify some elements of how this compromise could look if policy and legislation were coordinated and adapted accordingly.

- An acceptance of underlying rights, concerns and fears felt by all sides.
- An acceptance of the need and desirability of compromise by all interest groups. This would recognize the legitimacy of all their agendas (hunting, livestock grazing, large carnivore conservation) and the need for it to occur in shared multi-functional landscapes. This requires hunters and livestock producers to show an acceptance of the right of environmentalists and society at large to pursue a large carnivore conservation agenda across large parts of the European landscape. It also requires environmentalists and society at large to affirm a commitment to the continuation of livestock

production and hunting and to help support and facilitate their adaptation to a landscape of which large carnivores are a part.

- There would be a need to adapt livestock husbandry to the presence of large carnivores. There is considerable experience of this from many areas, although there are clearly costs associated with it, and some special challenges for some regions, such as reindeer herding and Alpine sheep grazing. However, generally speaking there is experience to show that adaptation is possible which allows livestock production in carnivore areas as well as the continued maintenance of traditional activities and species and heritage rich cultural landscapes.
- Well regulated hunting of a diversity of game species could continue, including large herbivores and large carnivores in areas where their populations are large enough and where legislation allows for it. There may also be a need for lethal control as a component of livestock protection and in response to other conflicts.
- A multi-scale governance structure could be adopted that allows large scale coordination and the establishment of clear frames within which there would be scope for strong local level involvement and action.
- Local stakeholders could be involved in conducting research and monitoring populations.
- Well regulated, low impact recreation could be developed within constraints concerning local acceptance and environmental sustainability.

6 Recommendations for next steps

The following is a short list of recommendations for next steps which emerged from the participants at the workshop.

- Based on the responses received there was a general enthusiastic support for a continuation of this type of dialogue based participatory process at European and more local scales. These could have been conducted within the frames of developing population-level management plans which would ideally have brought stakeholder groups, administrators, and scientists together.
- A multi-disciplinary analysis of the costs and benefits associated with large carnivores in multi-functional landscapes would be helpful. Ideally, this should focus on both economic and non-economic costs and benefits. It should also serve to better explain the diversity of interests that the different stakeholder groups have, because it was clearly expressed by many participants that they simply do not understand the other stakeholder groups because they have little contact or insight into their world views. This goes as much for a lack of understanding of the large carnivore conservation agenda among livestock producers as for a lack of understanding by many environmentalists of the link between heritage, tradition, food production, biodiversity and livelihoods felt by livestock producers.

- A lot could be gained by trying to better integrate large carnivore conservation into the existing wildlife management structures which are well developed in many countries. These structures have good experience at negotiating multiple interest groups and are well anchored within formal property rights and responsible institutions. However, it was pointed out that they need to be much more open to consider a wider range of stakeholder interests and be more open to consider wider ecosystem level aspects of their activities. At the very least these structures should be considered as valued partners in a common effort.
- Involve a diversity of stakeholders in common activities. These could include the joint production of information materials where multiple stakeholder groups sign off on a common content and distribute the material through their respective networks. It could also include involving more stakeholders in the collection of observations that serve as the foundation for large carnivore monitoring, and transferring experience and best practice between areas.
- Initiate dialogue forums at a more local level.
- Because of the large scale at which large carnivore populations operate and the dramatic influence that several EU policy areas have on large carnivores and on the key stakeholders it is clearly necessary for there to be a clear and active engagement of EU level institutions in pushing the process forwards, especially with respect to achieving population level management. However, it is also clear from this workshop's discussions that this top-down guidance must leave plenty of space for a real local level influence on the way that policies are implemented at more local scales.
- It would be a good idea to try and test out some of these next steps within some model areas. This would provide the possibility to gain experience and develop best practices.

Appendix 1: Scoping document prepared as background material for the workshop

Foundation for engagement with stakeholders on issues related to large carnivore management in Europe.

1. Introduction

The conservation and sustainable management of large carnivores (the brown bear, the wolf, the wolverine and the two lynx species) in Europe has received a lot of attention during the past decades. Some species are returning to parts of Europe from where they became extinct many years ago. In other areas they are not doing so well and are in need of active conservation measures.

The guidelines for population level management of large carnivores in Europe were published by the European Commission in 2008. There is continued attention focused on the problems stemming from co-existence with large carnivores, from the general public, the responsible authorities and affected stakeholders.

Early in 2012 DG Environment initiated a dialogue among the relevant stakeholders to work towards improving the prospects of coexistence of humans with large carnivore species such as the brown bear, the wolf, the wolverine and the Eurasian lynx in the European Union.

Following some preliminary consultations with a small group of stakeholders during 2012, the DG Environment has organized a stakeholder workshop to be held in January 2013 to discuss the situation of the Large Carnivore Species in the EU.

2. Objective

This document aims to provide some background for the workshop and identify some potential areas for concrete engagement between the DG Environment and various stakeholders in large carnivore conservation. Specifically, it briefly summarises the results from some of the tasks that were included in contract N°070307/2012/629085/SER/B3 between the Istituto di Ecologia Applicata and the DG Environment and outlines a first step forward for a process of engaging with stakeholders.

3. The status of large carnivores in Europe

Large carnivores are currently found across a significant proportion of the European continent. For wolf, lynx and bear we currently recognize ten functional population units for each species, while wolverines are limited to two populations. Large carnivores occur in a great diversity of conservation contexts in Europe, as well as being embedded in a diversity of ecological, social, cultural and political situations. There are several very large and robust populations that number in the thousands of animals, and some very small and highly vulnerable populations that only have some tens of animals. Accordingly, IUCN threat assessments for individual populations vary from “Least Concern” to “Critically Endangered”. Bears illustrate this diversity well with four populations numbering from 1700 to 7000 individuals, three populations numbering from 200 to 700 individuals, and three with less than 100 individuals. A similar diversity of situation exists for lynx and wolf populations (see Kaczensky et al. 2013 for full details).

The quality of monitoring systems varies dramatically across Europe. Based on the data available it appears that most large carnivore populations in Europe are stable or increasing. There are some exceptions, however. The Sierra Morena wolf population in southern Spain is on the edge of disappearing, bears in the population segment in central Austria appear to have become extinct, and wolves in Finland have undergone a dramatic decline, although this seems to have stabilised. The situation for many of the reintroduced lynx populations in central Europe (Vosges, Jura, Alps, Dinaric Mountains) also appears to have stagnated. Finally there are some small populations, such as Balkan lynx, Central European Lowland wolf population, Apennine bears, and Pyrenean bears that are still very small and isolated. Because many populations cross multiple inter- and intra-national jurisdictional borders there can be a high degree of variability in data quality from different parts of a population's distribution (e.g. for brown bears in the Dinaric-Pindos mountain range that span 9 countries, only two of which are currently in the EU).

Across this diversity of situations there is a similar diversity in the extent to which the populations are believed to be threatened by different factors (Kaczensky et al. 2013). We can broadly group these into several threat categories.

- a) Expansion of transport, recreational and energy production **infrastructure** into large carnivore habitats as well as **disturbance** effects from human activities.
- b) The intrinsic **vulnerability of small populations**.
- c) The weakness of many **institutions** and a lack of **population level management plans**.
- d) Widespread **conflict** and **poor tolerance** by certain elements of the rural population in many areas.
- e) Issues related to management of **prey base** and **forest management** in some specific regions.

4. The contribution of LIFE projects to conserving large carnivores

During the last 20 years a total of 70 LIFE projects have focused on large carnivores within the EU. The focus has been largely on the smaller and most endangered populations of bears and wolves, and most projects have focused on small target areas. Although it is hard to evaluate impacts, many of the projects seem to have been successful in reaching at least some of their goals, although the extent to which the project activities became institutionalised after the projects' end varies widely. Despite this, LIFE projects have developed a range of relevant best-practice experience, especially related to conflicts with livestock, and provide an invaluable source of experience (Salvatori 2013).

5. Towards population level management

Achieving coordinated management plans at the population level has been identified as being crucial for both securing the long term viability of large carnivores and providing a framework for institutionalising actions to address conflicts. A recent review of progress on this front has revealed that while there is extensive cross-border cooperation at a technical level between scientists, there is very little administrative or political level cooperation, and no coordinated population level management plans exist as of yet (Blanco 2013). This situation creates a great deal of uncertainty for many stakeholders.

6. Conflicts associated with large carnivores

Quantitative surveys repeatedly demonstrate that there is widespread support among both urban and rural publics for the conservation of large carnivores across Europe. However, focused research has documented a wide diversity of conflicts associated with the presence, and absence, of large carnivores. The level and nature of conflict varies dramatically across Europe, and when comparing between areas apparently has little relationship with the size of the large carnivore population. It is possible to recognize five main dimensions of conflict (Linnell 2013).

- a) Conflicts about substance – concerning “how things are” – including issues like depredation on livestock, reindeer or beehives, the killing of hunting dogs and damage to property.
- b) Conflicts about knowledge – concerning “how things are perceived”. On one level this reflects a genuine information deficit where people are simply not aware of the results of recent research or have little direct personal experience with large carnivores. On the other hand it reflects a deeper tension between scientific knowledge and other forms of local knowledge based on tradition and individual experience.
- c) Conflicts over values and norms – concerning the things that people “believe to be good or bad, or right or wrong”. These are some very fundamental issues related to the values associated with carnivore conservation, however the carnivores have also become symbolic of many wider issues related to ongoing threats to rural lifestyles and traditional practices as well as a changing relationship between people and nature.
- d) Conflicts over procedures – concerning “the way things are done”. These conflicts are centered around issues of power and influence, with a heavy focus on perceptions of justice and fairness. Legislation, the way it is developed, and the way it is implemented are central elements.
- e) Conflicts over relationships – concerning “how people or organisations behave towards each other”. These conflicts are about issues such as trust, respect and tolerance.

There are two key findings. One is that not all of the conflicts are directly associated with the large carnivores themselves, but are linked with the way that they are, or are not, managed. Two is that most of the intense conflicts are between different stakeholder groups rather than between any given stakeholder group and large carnivores. Because most of these conflicts concern a diversity of stakeholders, it is evident that finding solutions involves engaging with a diversity of stakeholders.

7. Who are the stakeholders?

Relevant stakeholders are both those that are influenced by, and those who influence large carnivores. Because of the scales at which large carnivore conservation occurs this involves a wide range of groups. These include livestock producers, reindeer herders, hunters, foresters, environmentalists, outdoor recreationists, ecotourism operators, animal welfare groups, scientists, policy makers as well as more diffuse groupings such as rural residents and, not least, the wider public. Recognising that conflicts are often a result of the interactions between stakeholders, rather than a result of interactions with the large carnivores directly, it is crucial to engage with the full range of stakeholders who are relevant within a specific context.

8. How to engage with stakeholders?

There is a wide diversity of ways in which to have meaningful engagement with stakeholders (Linnell 2013). Some of the most promising include;

- a) Co-production of information materials between scientists, experts and key stakeholders.
- b) Providing technical and economic assistance to help adopt technical measures to reduce material conflict.
- c) Engage key stakeholder groups in joint activities, such as population monitoring.
- d) Develop emergency teams with broad composition to respond to acute conflicts and incidents.
- e) Developing formal contact forums where stakeholders and decision makers can interact.
- f) Involving stakeholders in the development of regional, national and population level management in some form of consultative or participatory manner.

9. First steps

One of the main lessons from best-practice within conflict resolution is that there is a need to build mutual insight into stakeholders' respective interests and to find common ground. This requires an initial broadening of the topic being considered beyond the conflictful issue (the way large carnivores are managed). Such an approach also fits well with our evolving understanding of the conflicts associated with large carnivores that has highlighted the importance of wider issues. Based on the way conflicts are discussed, it is suggested that the rural landscape (with its human and non-human elements) would be a suitable focus for these wider discussions.

Therefore, the first steps in any process should allow a diversity of the most relevant stakeholders to present their point of view concerning their broad interests (how they perceive the "good life") with respect to the rural landscapes they inhabit or visit, what they see as the main obstacles to achieving these goals, and what they see as potential solutions to these obstacles. The extent to which large carnivores enter into these broad issues is a key element important for giving context to large carnivore conflicts. Such a process can help the various stakeholders to gain insight into what the other stakeholders value in the landscape and what their interests are. Such material provides a basis for identifying common values and common interests which are a good starting point for constructive engagement. It can also identify areas of disagreement, and identify the nature of this disagreement. Organizing such a process also confirms the legitimacy of multiple interests within shared landscapes.

It is crucial that such a process is conducted in a structured manner that promotes constructive sharing of ideas and builds trust and understanding.

Such a first step could then open the way for a range of more targeted activities that deal with more specific issues.

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- Linnell, J. (2013) *From conflict to coexistence? Insights from multi-disciplinary research into the relationships between people, large carnivores and institutions*. Istituto di Ecologia Applicata, Rome, Italy.
- Salvatori, V. (2013) *Large carnivore conservation and management in Europe: the contribution of EC co-funded LIFE projects*. Istituto di Ecologia Applicata, Rome, Italy.

Appendix 2: Agenda for the workshop



STAKEHOLDER WORKSHOP

ON EU ACTION ON LARGE CARNIVORES

Venue: Albert Borschette Conference Center of the European Commission,
36 rue Froissart, B- 1040 Brussels

Date : 25th January, 2013, 10:00- 17:00 hrs

Room: 1.A

Agenda

1. Welcome and introduction to the workshop

Pia Bucella, Director for Nature, Biodiversity & Land Use, Directorate General for the Environment, European Commission

2. The current status of Large Carnivore Populations in Europe

Luigi Boitani, Director, Istituto di Ecologia Applicata, Rome & Large Carnivore Initiative for Europe

3. The contribution of the LIFE programme to the conservation of Large Carnivores in the EU.

Angelo Salsi, Head of LIFE-Nature Unit, Directorate General for the Environment, European Commission

4. Scene-setting statements:

Coexistence with Large Carnivores from the farmers' perspective

Tapio Juhani Rintala, Central Union Agricultural Producers, Finland

Coexistence with Large Carnivores from the hunters' perspective

Yves Lecocq, FACE-European Federation of Associations for Hunting and Conservation

Coexistence with Large Carnivores from the environmental non-governmental organisations' perspective

Luis Suarez, WWF- Spain

5. Forward-looking collective visioning as a means to develop possible scenarios for a sustainable coexistence between large carnivores and people: Introduction to the discussions in small groups.

John Linnell, Norwegian Institute for Nature Research & Large Carnivore Initiative for Europe

6. Discussions in break-out groups

Block 1: Desired visions of the future:

to explore the desired shape of the landscape, and both the participants' desired place (activity) and the desired role of large carnivores in this landscape.

LUNCH BREAK

Block 2: Barriers and obstacles:

to identify problems in reaching these desired end points.

Block 3: Solutions:

to find ways to overcome these obstacles.

7. Plenary: Reports from break-out groups.

Facilitator/reporter for each group will summarize main findings

8. Summary and the way forward.

Panel discussion with speakers and the audience

9. Conclusions

Pia Bucella, Director for Nature, Biodiversity & Land Use, Directorate General for the Environment, European Commission

Appendix 3: The statements used in the Q-sort analysis

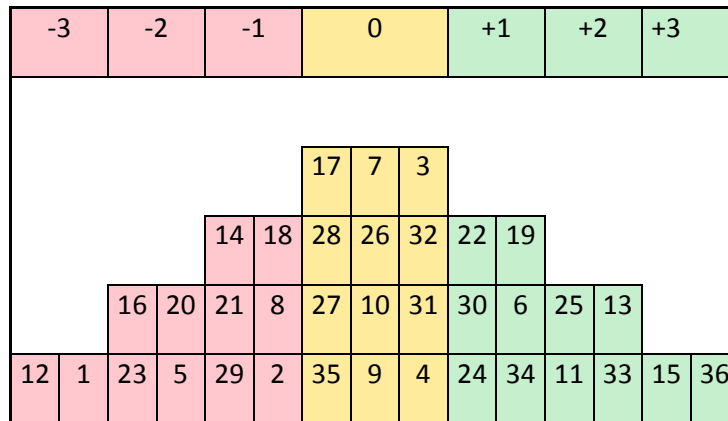
1. Forest owners should be allowed to plant which ever tree species maximizing their profit
2. Protected areas are not crucial for nature conservation
3. It is a good idea to intensify agriculture in some areas to allow marginal areas to become wilderness
4. Hikers should have the freedom to walk anywhere in mountains and forests
5. The presence of large carnivores has a major negative impact on the quality of life in rural areas
6. Developing ski-slopes or areas for off-road motor vehicle driving has negative impacts on the quality of life in rural areas
7. Large carnivores are threatening small livestock producers more than big producers
8. There should be no restrictions on the rights of owners to modernize historical buildings
9. Rural abandonment favors biological diversity in Europe
10. Hunting has an important positive social function in rural communities
11. It is livestock owners' duty to protect their animals against large carnivores
12. More forest roads should be constructed to make it easier to harvest timber
13. The continued presence of large carnivores in European landscapes should be viewed as a source of pride
14. Decisions about landuse and biodiversity conservation should primarily be made at the local level
15. The widespread construction of modern highways and high speed railways threatens the natural values of the rural landscape
16. Large carnivores should not be allowed to return to all areas where they formally occurred
17. Ecotourism has the potential to make a significant contribution to rural economies
18. Large carnivores can only survive in wilderness
19. Landscapes produced by traditional farming and livestock grazing practices should be preserved as valuable parts of our cultural heritage
20. It should be permitted to build wind-parks and hydro-electric power plants wherever it is technically possible
21. Tourism is a threat for the authenticity of rural traditions
22. The presence of dead-wood in the forest is a sign of a healthy forest ecosystem
23. There is no point in preserving traditional livestock breeds
24. Hunting animals only for a trophy should be forbidden
25. Large carnivores are critical for the functioning of European ecosystems
26. The picking of mushrooms and berries should be restricted for non-local residents
27. Traditional farming practices should be maintained even if they are not cost-effective
28. Restoring wilderness (i.e. a place free from human intervention) to as much of Europe as possible should be the ultimate goal for European conservation
29. Agricultural production has to be increased in Europe to feed a growing population
30. The feeding of game animals for hunting should not be permitted
31. The legal hunting of large carnivores increases their acceptance by rural communities
32. Shrub encroachment on meadows is a threat for biodiversity
33. Nature conservation in Europe should preserve the way that people interact with nature as well as the wild species

34. The production of a diversity of local and traditional food products is a source of national pride
35. It is not necessary to hunt wild animals to control their populations
36. A high biodiversity is always positive for human well-being

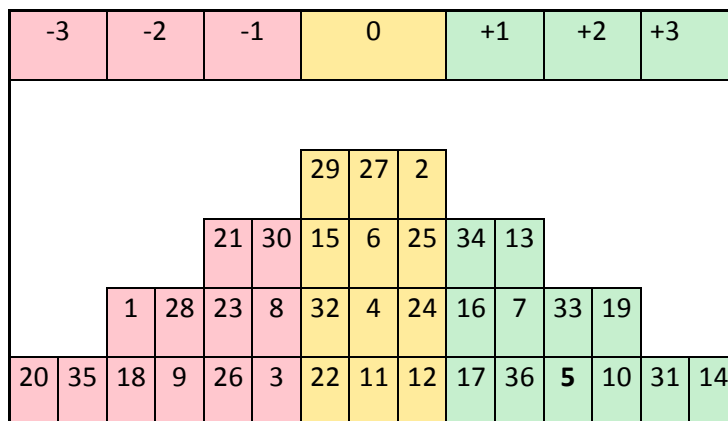
Appendix 4: Results from the Q sort analysis

The ideal sorts for the different narratives are shown below. The gradient goes from "agree less" (-3) to "agree more" (+3). The numbers in the pyramid refer to the statements in Appendix 3.

Ideal sort for narrative 1 according to z-scores:



Ideal sort for narrative 2 according to z-scores:



Ideal sort for narrative 3 according to z-scores:

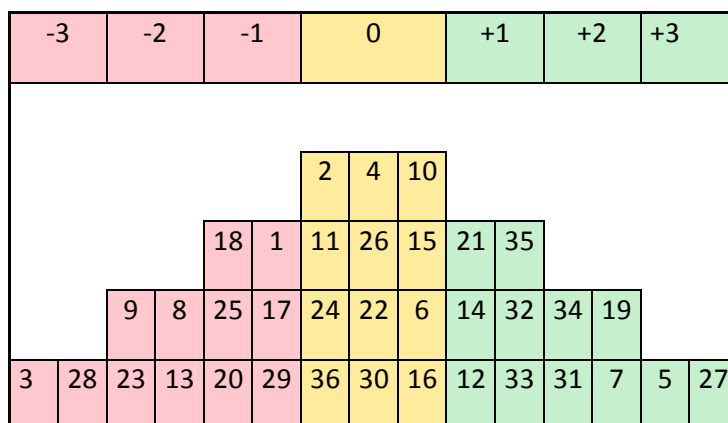


Figure 1 Visual display of where individual respondents are placed along factors 1 and 2, with the clusters for Narratives 1,2 and 3.

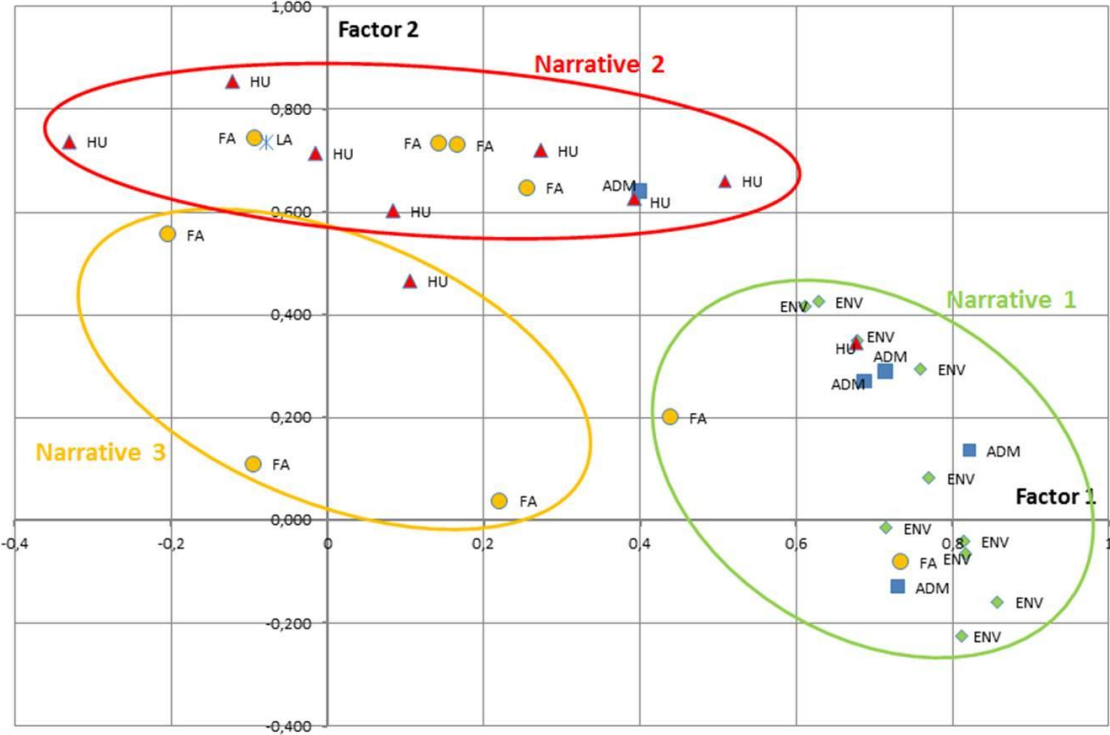


Figure 2 Visual display of where individual respondents are placed along factors 1 and 3, with the clusters for Narratives 1,2 and 3.

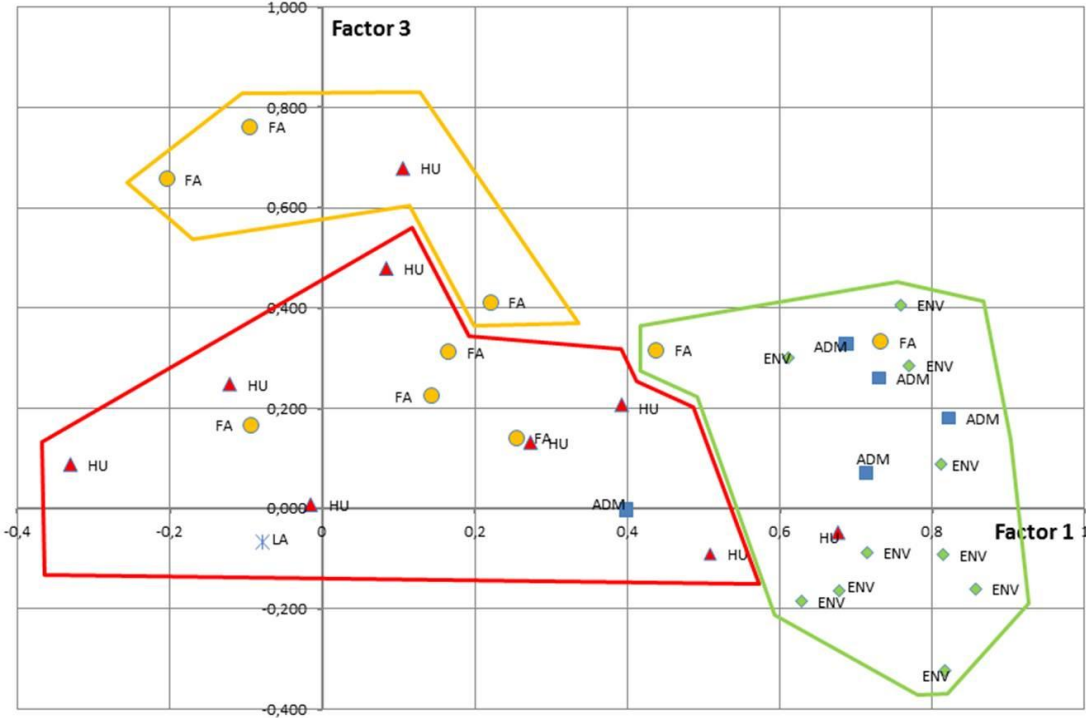


Table 1: Main differences between factors 1 and 2

N°	Statement	Type 1	Type 2	Difference
35	It is not necessary to hunt wild animals...	0.285	-2.196	2.480
25	Large carnivores are critical for the...	1.473	-0.294	1.767
16	Large carnivores should not be allowed...	-1.265	0.646	-1.911
14	Decisions about landuse and biodiversity...	0.521	1.697	-2.218
31	The legal hunting of large carnivores...	0.382	2.257	-2.639
5	The presence of large carnivores has a major...	-1.583	1.237	-2.820

Table 2: Main differences between factors 1 and 3

N°	Statement	Type 1	Type 3	Difference
28	Restoring wilderness to as much of Europe...	0.466	-2.414	2.881
25	Large carnivores are critical for the...	1.473	-0.951	2.424
13	The continued presence of large carnivores...	1.219	-1.048	2.267
3	It is a good idea to intensify agriculture...	-0.227	-2.104	1.877
9	Rural abandonment favors biological...	-0.022	-1.756	1.733
16	Large carnivores should not be allowed...	-1.265	0.632	-1.897
12	More forest roads should be constructed...	-1.761	0.726	-2.487
5	The presence of large carnivores has...	-1.583	1.253	-2.836

Table 3: Main differences between factors 2 and 3

N°	Statement	Type 2	Type 3	Difference
13	The continued presence of large carnivores...	0.606	-1.048	1.654
35	It is not necessary to hunt wild animals...	-2.196	0.734	-2.930

Table 4: Consensus Statements between the 3 factors

N°	Statement	Factors					
		1		2		3	
		Q-SV	Z	Q-SV	Z	Q-SV	Z
4	Hikers should have the freedom to walk...	0	-0.42	0	-0.06	0	0.01
8*	There should be no restrictions on the rights...	-1	-0.78	-1	-0.64	-2	-1.06
20	It should be permitted to build wind-parks and...	-2	-1.39	-3	-1.39	-1	-0.84
33*	Nature conservation in Europe should preserve...	2	1.10	2	1.26	1	0.96
34	The production of a diversity of local and...	1	0.54	1	0.97	2	1.05

(all Listed Statements are Non-Significant at $P > .01$, and Those Flagged With an * are also Non-Significant at $P > .05$)

Appendix 5: Recording of break out group work.

These are transcriptions of the detailed visions, barriers and solutions proposed by break-out group participants and recorded on flip-charts. The texts have been expanded slightly to make them more understandable. The abbreviation "LC" refers to "large carnivores".

The first task was to describe a desired, but plausible, vision for 20 years into the future for the stakeholders' activity with respect to large carnivores. The second task was to identify barriers to achieving this vision. The third task was to identify potential solutions to overcome these barriers. There were four break out groups with from 13 to 19 members. Visions and barriers were attributed to the participant's stakeholder category, apart from some statements that appeared from several participants or where it was not clear which interest group a participant was referring to at a given moment. Solutions were not linked to category because they emerged much more from group discussion.

Grp	Stakeholder	Task	Text
1	Environmental	Vision	Less emotion, more pragmatic. All stakeholders accept compromise. LCs – part of landscape – viable corridors.
1	Environmental	Vision	Viable populations in Europe, including Germany – increase acceptance – issues and problems should be addressed – improve knowledge base – Germany should have national management coordination
1	Hunting	Vision	LCs part of biodiversity – less polarization – adaptive tools – hunters recognized as part of ecological processes.
1	Environmental	Vision	Viable pops (wolf and lynx) in all available habitats. Demographic and ecological viability. Intact social organization in LC populations. Connectivity – forest – permeable infrastructure. LCs – will help regulate ungulates. Livestock – better protection – fence, fladry, LGDs. More people enjoy nature with LCs
1	Environmental	Vision	LC recovery will continue – will be normal part of fauna over most of Europe, return to past situation, hunters / farmers adapt and accept that they must adapt to societal demands
1	Journalist	Vision	Belgium will avoid other's mistakes, Italian wolves and Polish wolves will meet. Perverse impacts of compensation removed.
1	Journalist	Vision	Dutch – will have some LCs in NL – see conflicts outside reserves – viability?
1	Livestock	Vision	Still possible to have livestock and cope with LCs
1	Hunting	Vision	Secure LC pops in Italy. Government takes measures and

			takes responsibility. Hunters integral part of management removal should be possible – LCs (wolf and bear) become game
1	Administration	Vision	Italian, Polish and German populations could mix in Germany. Need population level management – adapt definitions
1	Administration	Vision	Viable populations in Europe, including Germany – increase acceptance – issues and problems should be addressed – improve knowledge base – Germany should have national management coordination
1	Administration	Vision	Viable pops (wolf and lynx) in all available habitats. Demographic and ecological viability. Intact social organization in LC populations. Connectivity – forest – permeable infrastructure. LCs will help regulate ungulates. Livestock – better protection – fence, fladry, LGDs. More people enjoy nature with LCs
1	Livestock	Vision	Finland should have less problems with LCs in the future – less fear, and people can still enjoy nature. There should be a living countryside, with problem wolf removal, hunting to maintain wolf shyness, and with less bears – local authorities should be able to give permits to kill LCs, Reindeer conflict is hard to mitigate therefore we should minimize LCs populations
1	Hunting	Vision	Estonia. Wolverines return. Bears in annex V – limit pop at present social capacity – balance LCs and ungulates – issues with climate
1	Hunting	Vision	Slovenia – social carrying capacity as now – spread LCs out – north and south – hunting important activity – sustainable, appreciate conservation role of hunters – LCs as game – role of hunters in rural community
1	Rural / Livestock	Vision	Romania has most LCs and most sheep production. Raise awareness of the existing human wildlife relationship. Stop trophy hunting and show the real, local, value of wildlife. Maintain the present values and awareness of mitigation measures.
1	Livestock	Vision	Bulgaria has historical tolerance of LCs among farmers. Farmers have more conflicts with hunters as livestock guarding dogs get shot. In the future the situation should be as now in Bulgaria (other areas have lost their tradition) – LC

			corridors should be maintained, tolerance is important, and education is needed. LCs should be viewed as nature' regulators, not hunters.
1	Hunting	Vision	Denmark point of view is that wolves are not invited, but are welcome if they come. For Europe, wolves should occur in sustainable and viable populations, and their presence should be normalized. General frames are good, but there is a need for more local acceptance which will require making some concessions to local issues. There is a need to ensure that hunting remains acceptable to the wider public.
1	Administration	Vision	Referring to official Finnish strategy (5 yr time scale) for ambition. Game (incl LC) should be a source of wellbeing, populations should be viable, use should be sustainable. Compromises will be needed between competing interests. Must broaden the scope beyond hunting interests including recreation, such as bear watching. Conflicts should be kept under control. Ethical and responsible management will be established.
1	Environmental	Vision	Agree with ideas of having LCs widely distributed in landscape with demographic and ecological viability. Use diverse local tools. High public acceptance. Hunters won't need to regulate ungulates or carnivores. Effective mitigation of conflicts. International cooperation.
1	Environmental	Vision	Croatia – manage conflicts now as LC populations are growing. Save the LCs where they are now in these large populations in eastern Europe. Set limits for acceptable human impacts on nature (roads, winds, cabins) through zoning. Cost – benefit vary from areas depending on maintaining traditional husbandry systems. Ecological benefits of LCs. Ecotourism potential. Hunting of bears can provide income and this increased acceptance may reduce poaching
1	Administration	Vision	Hope for future with cooperation.
2	Environmental	Vision	Continue working for biodiversity and maintaining ecological balance.
2	Livestock	Vision	Maintaining reindeer husbandry practices and traditions and rights (tolerate about 5% losses to LCs)
2	Environmental	Vision	Restoring LCs in Europe, maintain their habitat, in coexistence with people

2	Livestock	Vision	Preserve rural landscape and traditional activities. Maintain zones in areas of sheep breeding activities where a regulation of wolf numbers is more flexible.
2	Rural	Vision	Living countryside by delegation decisions to national / regional authorities (lower than EU level)
2	Environmental	Vision	Increase acceptance for LCs through information and communication
2	Hunting	Vision	Involve hunters in monitoring and management of wolves and ungulates to maintain wildness of wolves
2	Livestock	Vision	Full compensation of values (including immaterial) lost by farmers and delegation to regional or national authorities
2	Environmental	Vision	Better involvement of hunters and farmers. Gain achievements through dialogue
2	Hunting	Vision	Continue hunting in a biodiversity rich landscape (including LCs) where the burden is shared by society (i.e. hunting is not same thing as pest control)
2	Environmental	Vision	Less polarization (e.g. black vs white), less overemphasis on LCs. Recognition of shared issues
2	Administration	Vision	Respect for scientific knowledge and adopt a population level (transboundary) approach to maintain connectivity
2	Livestock	Vision	Tools to manage populations (especially wolves) and compensation shared by society
2	Rural / Livestock	Vision	Maintain pastoralism under conditions that contribute to livelihoods
3	Hunting	Vision	All LCs are present, but with fewer problems and with hunting recognized as part of conservation
3	Rural	Vision	More balance between different interests. More knowledge about socio-economics so that we can predict impacts
3	Environmental	Vision	More tolerance and modesty in use of natural resources – ensure sufficient amount of resources for each activity
3	Environmental	Vision	Well managed LC populations in favourable conservation status and extensive farming practices assured
3	Environmental	Vision	Decentralised decision making informed by good science

3	Environmental	Vision	Balanced nature including both wilderness areas and sustainably used natural areas
3	Hunting	Vision	Coexistence between LCs and humans with sustainable wildlife management that takes into account attitudes of local people
3	Administration	Vision	Balance between wildlife populations and the damages that they cause. Prevailing feeling of justice among people
3	Livestock	Vision	Less reductionist thinking about LCs – should be put in a wider context (including livelihoods and general biodiversity). More emphasis in habitat directive considering people as a positive force for nature (natural vs semi-natural habitats)
3	Livestock	Vision	The management of LCs needs to consider that sheep farming provides both livelihoods and habitats because in some areas other activities are not possible. Losses, both direct and indirect, taken into account and fully compensated. More collaboration and information sharing with farmers by local authorities
3	Environmental	Vision	Management of LCs should be based on sound scientific research from different disciplines (understanding LCs, habitat, socioeconomics) – leading to a better future for all (people, livestock, LCs)
3	Administration	Vision	Abruzzo bear population in better conservation status, expanding outside the park borders – with different administrations seriously working together on common management of bear issues.
3	?	Vision	Better technologies / measures to prevent damages (old and new)
4	Hunting	Vision	LCs are managed professionally with full integration of hunters as conservationists supported by adequate training
4	Hunting	Vision	Hunters' interests should be more recognized and taken into consideration
4	Livestock	Vision	Minimise damages by wolves to sheep in the Alps
4	Hunting	Vision	Populations of LCs managed so as to ensure human safety
4	Hunting	Vision	Bottom up approach to governance for local management of LCs

4	Livestock	Vision	Balanced coexistence of LC and reindeer herding through bottom-up approach to LC management in full consideration of indigenous people's rights
4	Livestock	Vision	Rural economic activities maintained in coexistence with LCs through bottom-up approach.
4	Environmental	Vision	Integrated approach to conservation where interests of all stakeholders are taken into consideration and ensure healthy and connected populations of LCs
4	Livestock	Vision	Coexistence of livestock breeders and LCs in remote mountains areas that are currently being abandoned
4	Environmental	Vision	Functional ecosystems with LCs and humans in coexistence through proactive management practices based on scientific knowledge vs reaction to fear
4	Administration	Vision	All socio-economically and environmentally viable areas for LCs are occupied by them. Coexistence becomes a success with democratic participation of all stakeholders at all levels
4	Livestock	Vision	LC presence and reindeer herding in a balance
1	?	Barriers	The difficulty of reaching all relevant stakeholders, including new stakeholders such as rural residents
1	?	Barriers	The hysterical reactions to wolves which appears in areas where they recolonise
1	?	Barriers	Lack of awareness of best practices in areas such as livestock protection
1	?	Barriers	Lack of transboundary responsibility / cooperation
1	?	Barriers	Lack of understanding of human ecology and psychology behind our reactions to events
1	?	Barriers	Political misuse of LCs in wider political debates
1	Environmental	Barriers	Lack of science based decisions
1	Environmental	Barriers	Lack of skills at managing social issues in management
1	Environmental	Barriers	Strong emotions in the debate
1	Environmental	Barriers	Lack of institutional capacity
1	Hunting	Barriers	Too great a distance between decision makers and people on the ground

1	Hunting	Barriers	Reaction delays by authorities
1	Hunting	Barriers	Too much dogma in the discussions
1	Environmental	Barriers	Lack of knowledge among foresters about the ecological role of LCs
1	Environmental	Barriers	Lack of awareness of the ecological impact of hunting management systems
1	Environmental	Barriers	Lack of will for hunters and farmers to share space
1	Journalist	Barriers	Contrasting visions of man and nature
1	Journalist	Barriers	Negative effects of misguided livestock compensation systems
1	Journalist	Barriers	Resistance to change among some stakeholders
1	Journalist	Barriers	Short term view of local politicians
1	Journalist	Barriers	Impact of few unfortunate events on public perceptions
1	Journalist	Barriers	Lack of experience of living with wildlife in many areas where LCs are recolonising
1	Livestock	Barriers	Alpine areas with their extensive livestock production systems are very hard to adapt to situations with LCs
1	Livestock	Barriers	Livestock husbandry is not adapted to LCs
1	Livestock	Barriers	Political will is lacking, as are the financial mechanisms
1	Hunting	Barriers	Lack of awareness and understanding of ecological processes
1	Hunting	Barriers	Lack of knowledge
1	Hunting	Barriers	Mistrust between stakeholders
1	Administration	Barriers	Fear of LCs
1	Administration	Barriers	Lack of acceptance of LC presence among shepherds and hunters
1	Administration	Barriers	Obstacles to migration / dispersal of LCs across our fragmented landscapes
1	Livestock	Barriers	Economic limitations
1	Livestock	Barriers	Lack of political will for more LC control / culling / hunting

1	Livestock	Barriers	Legal obstacles
1	Hunting	Barriers	Bears should be on Annex V of the Habitats Directive
1	Hunting	Barriers	Difficulty of managing the harvest of LC prey (deer, boar) in the face of complex issues such as climate change and supplementary feeding in a system with predators – challenge is to maintain the present balance into the future.
1	Hunting	Barriers	Difficulty of natural recolonisation of wolverines to Estonia
1	Hunting	Barriers	The difficulty of identifying the social carrying capacity for LCs of different areas
1	Hunting	Barriers	Changing hunting systems have led to a loss of local involvement
1	Hunting	Barriers	Gap between local and scientific knowledge is too big
1	Hunting	Barriers	Lack of acceptance among local people
1	Hunting	Barriers	Lack of holistic view of environment
1	Hunting	Barriers	Lack of knowledge in management agencies
1	Hunting	Barriers	Polarised views against killing animals
1	Hunting	Barriers	Public opinion and social carrying capacity are shaped by chance events
1	Livestock	Barriers	Lack of awareness of rural issues among public
1	Livestock	Barriers	Lack of EC flexibility concerning LC management
1	Livestock	Barriers	The landscape in Western Europe is too crowded – conservation effort should focus on the existing large populations
1	Livestock	Barriers	Poor management structures as too much power lies within the hunting lobby
1	Journalist	Barriers	Lack of and poor communication of science
1	Hunting	Barriers	Lack of will of hunters to consider other interests
1	Hunting	Barriers	Not enough subsidiarity in decision making
1	Administration	Barriers	Feeling of loss of control in rural communities
1	Administration	Barriers	Funding for large scale mitigation of livestock production systems is lacking

1	Administration	Barriers	How to include social issues into management?
1	Administration	Barriers	Illegal killing of LCs
1	Administration	Barriers	Need for an ecosystem approach (including hunters as integral parts of the ecosystem)
1	Environmental	Barriers	Confusion between cause and effect concerning the effects of culling and lethal control on conflicts
1	Environmental	Barriers	Lack of funding for connectivity structures / green bridges
1	Environmental	Barriers	Lack of public involvement and NGO oversight and influence into government decisions
1	Environmental	Barriers	Poor management plans in neighbouring countries that can potentially create sink effects
1	Administration	Barriers	Over-protection of LCs
1	Environmental	Barriers	Acceptance varies – is influenced by economy, habitat, knowledge / education and management system
1	?	Barriers	Lack of political will and not enough influence of technical staff in these political debates
2	?	Barriers	Information / communication not based on ideologies
2	Environmental	Barriers	People are not aware about importance of biodiversity
2	Environmental	Barriers	Prioritising of species
2	Environmental	Barriers	People not working together
2	Environmental	Barriers	Tendency to seek global solutions (which does not work)
2	Livestock	Barriers	Too high populations of carnivores
2	Livestock	Barriers	Lack of implementation of management plans
2	Livestock	Barriers	EU legislation
2	Livestock	Barriers	Insufficient involvement of local people
2	Environmental	Barriers	Ecological barriers and lack of connectivity
2	Environmental	Barriers	Source populations are too small
2	Environmental	Barriers	Lack of locally adapted technical solutions
2	Livestock	Barriers	Misrepresentation (ideologies)

2	Livestock	Barriers	Technical means to regulate wolf population are not sufficient
2	Livestock	Barriers	Livestock protection methods are not effective
2	Livestock	Barriers	Contradictions of EU laws
2	Rural	Barriers	Decisions are made too far away
2	Rural	Barriers	Lack of cooperation between agriculture and environment DGs in EU
2	Rural	Barriers	No reciprocity in the system (EU - local)
2	Rural	Barriers	Centralisation of power, threats from the EU, no empowerment of people
2	Environmental	Barriers	Lack of institutional capacity
2	Environmental	Barriers	More weight on LCs than on local people
2	Hunting	Barriers	Misperceptions towards hunters
2	Hunting	Barriers	Lack of anti-predator behavior in prey in areas newly colonized by wolves
2	Hunting	Barriers	Lack of knowledge of stakeholders
2	Hunting	Barriers	Lack of dialogue tools (wildlife human dimensions)
2	Hunting	Barriers	EU legislation is not transparent – too hard to understand
2	Environmental	Barriers	Different levels of knowledge
2	Environmental	Barriers	Everyone has his / her own interests
2	Environmental	Barriers	Traditions to protect livestock are lost
2	Hunting	Barriers	No objective criteria to include species on specific annexes
2	Hunting	Barriers	Lack of flexibility of EU legal framework
2	Environmental	Barriers	People have fixed views / difficult to change
2	Administration	Barriers	Habitat fragmentation
2	Administration	Barriers	Low awareness of ecosystem connectivity
2	Administration	Barriers	Discussions are too much on national level
2	Livestock	Barriers	Misrepresentation (ideologies)

3	?	Barriers	Lack of integrated planning
3	?	Barriers	Lack of vision in the administration – too reactive and not proactive
3	?	Barriers	Lack of coordination among different activities (conflicting goals)
3	?	Barriers	Lack of timely compensation
3	?	Barriers	Lack of trust between stakeholders
3	Hunting	Barriers	Lack of knowledge about the impacts of hunting on LCs
3	Hunting	Barriers	Diversity of local situations presents a challenge because solutions cannot be copied
3	Hunting	Barriers	Supplementary feeding is adding to the problem (bear habituation)
3	Hunting	Barriers	Lack of acceptance by the people for management, plans, policies and strategies
3	Hunting	Barriers	Lack of understanding and cooperation between stakeholders
3	Hunting	Barriers	Social conflicts among rural and urban values and realities
3	Rural	Barriers	Projects starting without local participation are creating opposition – must bring the decisions closer to home
3	Rural	Barriers	Lack of understanding about the real costs of conservation
3	Rural	Barriers	Lack of communication and lack of participation in decision making
3	Rural	Barriers	Lack of understanding and cooperation between stakeholders
3	Rural	Barriers	Current livestock practices are not compatible with the return of LCs
3	Rural	Barriers	Rurality is changing as urban people see it as a playground
3	Rural	Barriers	Social conflicts among rural and urban values and realities
3	Environmental	Barriers	Lack of education and awareness about the subject
3	Environmental	Barriers	Mismanagement of funds. Conservation is giving a wrong message – that a lot of money is used for non-practical

			solutions – such as flying wolves with helicopters
3	Environmental	Barriers	Loss of traditional practices that have supported coexistence in many parts of Europe.
3	?	Barriers	Unclear definition of Favourable Conservation Status
3	?	Barriers	Lack of good management plans
3	?	Barriers	Lack of clear policy for extensive farming
3	?	Barriers	Lack of cooperation between countries sharing populations
3	Environmental	Barriers	Lack of political will to solve the problems
3	Environmental	Barriers	Lack of quick response and actions by government agencies for problems at the local level
3	Environmental	Barriers	Projects starting without local participation are creating opposition – must bring the decisions closer to home
3	Environmental	Barriers	Lack of communication and lack of participation in decision making
3	Environmental	Barriers	Lack of transparency in decision making
3	Environmental	Barriers	Different understandings of what wilderness is in Europe
3	Environmental	Barriers	Lack of spatial planning
3	Environmental	Barriers	Too much emphasis on money and not enough respect for natural processes
3	Environmental	Barriers	Mismanagement of funds. Conservation is giving a wrong message – that a lot of money is used for non-practical solutions – such as flying wolves with helicopters
3	Hunting	Barriers	Lack of knowledge about local peoples' attitudes and norms
3	Hunting	Barriers	Projects starting without local participation are creating opposition – must bring the decisions closer to home
3	Hunting	Barriers	Lack of communication and lack of participation in decision making
3	Hunting	Barriers	Lack of understanding and cooperation between stakeholders
3	Hunting	Barriers	Loss of traditional practices that have supported coexistence in many parts of Europe.

3	Hunting	Barriers	Social conflicts among rural and urban values and realities
3	Administration	Barriers	Lack of knowledge about local peoples' attitudes and norms
3	Administration	Barriers	Projects starting without local participation are creating opposition – must bring the decisions closer to home
3	Administration	Barriers	Lack of communication and lack of participation in decision making
4		Barriers	Lack of value for traditional knowledge
4		Barriers	Lack of time
4	Hunting	Barriers	Prejudices
4	Hunting	Barriers	Lack of objectivity in decision making
4	Hunting	Barriers	Lack of professional competence in responsible authorities
4	Hunting	Barriers	Diversity of values
4	Hunting	Barriers	Lack of flexibility of EC
4	Hunting	Barriers	Lack of knowledge of ecological and socio-economic carrying capacity
4	Livestock	Barriers	Diversity of values
4	Livestock	Barriers	Limited freedom to interpret legislation
4	Hunting	Barriers	Conservationists not ready to compromise
4	Hunting	Barriers	Lack of flexibility in legislation
4	Hunting	Barriers	Lack of local empowerment
4	Livestock	Barriers	Different values treated with arrogance and lack of respect
4	Livestock	Barriers	Lack of knowledge and lack of interest in reindeer herding issues
4	Livestock	Barriers	Lack of knowledge on socio-economic impacts
4	Environmental	Barriers	Lack of integration in management
4	Livestock	Barriers	Slow procedures for compensation policy
4	Environmental	Barriers	Different economic interests
4	Environmental	Barriers	Lack of flexibility of EC

4	Environmental	Barriers	Conservation approach is NIMBY (Not In My Back Yard)
4	Administration	Barriers	Lack of dialogue among stakeholders
4	Administration	Barriers	Lack of flexibility / arrogance in application of legislation
4	Livestock	Barriers	Absence of common sense
4	Livestock	Barriers	Lack of integrated assessment of impact of all predators
4	Livestock	Barriers	Lack of knowledge about reindeer herding

1	Solutions	<p>#1: How to improve the science-policy interface</p> <ul style="list-style-type: none"> - Improve environmental education in schools - Engage journalists and media as partners - Apply social pressure to include science in decision making and politics - Promote communication and find the good story tellers - Cooperative communication where various groups produce joint information - Encourage researchers to speak directly as they are viewed as honest brokers - Translation of scientific articles into languages to allow the nuances to come across – not just the headlines. - Create "Councils" whereby a group work together to produce an overview / consensus view of the state of knowledge - Formalise the use of science in decision making - Demonstration projects to show that things work - Promote a sense of modesty among scientists <p>A number of key knowledge needs were also identified</p> <ul style="list-style-type: none"> - The need for better monitoring methods - The need to gain a better understanding about to include the social aspects of conflicts into decision making - A need to better understand ecosystem functions, especially the respective roles that large carnivores and hunters can play <p>A need to promote livestock protection methods was also identified</p> <ul style="list-style-type: none"> - Communicate the scientific study of such methods - Experience transfer between herders with different experience - A need to foster a will to change - A need for funding for change - The need to be proactive and build trust
1	Solutions	<p>#2 How to reduce the extreme emotions and polarized views in large carnivore management</p> <ul style="list-style-type: none"> - Hard to change emotions or predict how they will be displayed - There is a need to normalise LCs, help people see them as normal parts of the landscape - Fear can be reduced by introducing perspective through showing the experience from life in other areas where large carnivores are regarded as being normal animals - Integrate diverse stakeholders into cooperative activities - Stop detailed monitoring – as the level of detail that some countries have about carnivores makes them very "abnormal" compared to other species. - Increasing monitoring activities may also help people feel that there is some control over the situation. - Time and experience will help. - The old ways of doing things must be relearnt. - There is a need for authorities to be visible and to take responsibility - There is a need to get the media to become more responsible - Cooperative education with multiple stakeholders involved.
2	Solutions	<ul style="list-style-type: none"> - EU policy and legislation could be adjusted - Misperceptions should be addressed via information and communication

		<ul style="list-style-type: none"> - Repeat such stakeholder dialogue meetings on different levels – population, national, regional, EU – possible per species - Include stakeholders into the development of management plans and implement them together - Number of LCs needs to be limited in some areas - Allow for local solutions – considering LC populations – refer to Habitat Directive and population management guidelines – need to have flexibility in interpreting directive - Importance of population level management plans - Sweden would like to have an exception to manage wolves and don't want to ruin national consensus between stakeholders by taking member states to court - Need social-economic studies of LCs on rural people and potential for LCs on tourism as basis for management plans - Change legislation to permit use of hunting as a management tool to engage human population - More transparency in informing the public about both positive and negative aspects of large carnivores – and include communication about collaboration processes - EU you should start facilitating stakeholder processes in various countries
3	Solutions	<p>#1 Science</p> <ul style="list-style-type: none"> - Integrating science in all levels of management and decision making - Filling the gaps where knowledge is missing - Invest into a science of finding compromises (human dimensions and social sciences) - Invest more funding into research and monitoring of LC populations
3	Solutions	<p># 2 Management at a local level</p> <ul style="list-style-type: none"> - Local communities empowered to make local decisions based on scientific and local knowledge - Establish local emergency groups (to deal with LC situations) - Adopt multiscale approach to solving the problems - More transparency in information and monitoring data - Participatory processes - Encouraging scientific transparency - Communicate science in an understandable way - Urbanised (not shy) wolves should be killed
3	Solutions	<p># 3 Farming practices</p> <ul style="list-style-type: none"> - Develop traditional farming practices - Integrated planning involving different sectors - Adjusting the funds for local people in areas with LCs - Better financial support for traditional ways of farming - Distribute knowledge about prevention measures - Make sure that people use preventative measures (don't pay compensation) - Maintains some areas without LCs
4	Solutions	<p>#1 Diversity of values</p> <ul style="list-style-type: none"> - Studies to better understand values - Zoning

		<ul style="list-style-type: none"> - Information programmes - Meetings with professional facilitators - Start a dialogue process - Increase respect and consideration - Private public partnerships for innovative solutions - Make LCs economically attractive
4	Solutions	<p>#2 Legislation</p> <ul style="list-style-type: none"> - More pragmatism from EC - More flexibility - Participatory management plans