



Bear Management in the Northern Dinarics - A Scenario Workshop

Workshop Report, Dolenjske Toplice, 8th November 2011



Workshop was facilitated by Aleksandra Majić Skrbinšek. Report was written by Aleksandra Majić Skrbinšek, Vesna Kereži, Urška Marinko and Annie McKee, and edited by Urška Marinko.

BOX 1

List of participating organizations (alphabetical order)

Biotechnical Faculty, University of Ljubljana, Slovenia

Committee for Monitoring of Large Carnivore Populations, Croatia

Croatian Hunting Association, Croatia

Faculty of Veterinary Medicine, Croatia

Forestry Faculty, University of Zagreb, Croatia

Hunting Association of Slovenia, Slovenia

LUB Žumberak - Gorjanci, Croatia

Ministry of Culture, Directorate for Nature Protection, Croatia

Ministry of Regional Development, Forestry and Water Management, Directorate for Hunting, Croatia

Ministry of the Environment and Spatial Planning, Slovenian Environment Agency, Slovenia

Ministry of the Environment and Spatial Planning, Sector for Nature Conservation, Slovenia

Slovenian Forestry Service, Slovenia

State Institute for Nature Protection, Croatia

The James Hutton Institute, Scotland

Workshop introduction

The workshop began with introductions by the participants and facilitators, and a summary of the registration exercise completed by the participants, highlighting their expectations for the workshop. These expectations included achieving agreements on joint and coordinated bear management, an exchange of experience and different views of bear management, the operationalization of cooperation between Slovenia and Croatia, improving current bear management and constructive discussion among participants. Participants were also encouraged to speak in their native language (either Croatian or Slovenian) to ensure they had the opportunity to express themselves fully, and to highlight any language barriers. The goal of the workshop was to create, analyse and evaluate possible scenarios for the management of bears in the Northern Dinarics.

The Scenario Analysis method - a novel approach

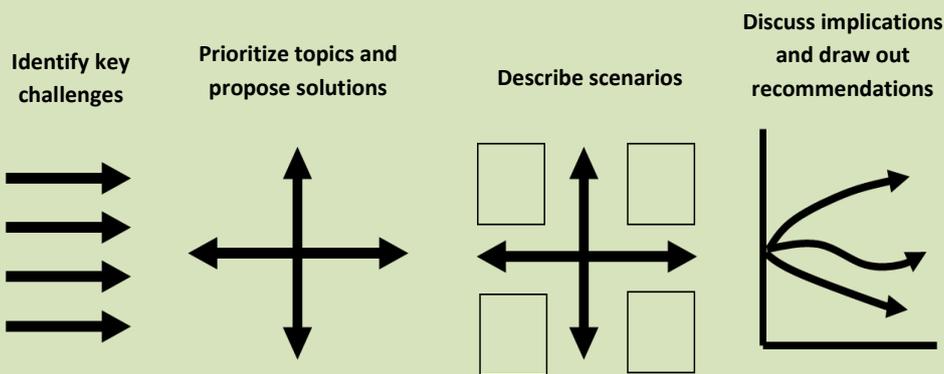
The production of scenarios provides a systematic opportunity to explore key features of alternative futures, identifying the winners and losers of each potential future, and highlighting the implications of action, a shift from the status quo and policy reform. Thus, scenario analysis is not about the likelihood of what will happen in the future but instead provides the opportunity to evaluate a range of different possible futures.

In the workshop, the facilitators presented an outline of the scenario workshop method, a novel approach to exploring stakeholder views of bear management through the exploration of alternative possible futures. The presentation emphasized that the production of scenarios through this

workshop method does not aim to predict the future, nor define probabilities, instead provides a qualitative and systematic opportunity to evaluate a range of possible futures and their implications for bear conservation. The scenario method is presented in Box 2. Indicators of 'good' scenarios are outlined in Box 3.

BOX 2

The Scenario Workshop Method ¹



The use of scenario methodology offered the opportunity to evaluate the usefulness of such a novel approach, generate baseline results for quantitative models, as well as crucially provide a better shared understanding of visions of bear management, and lead to the preparation of management recommendations.

What are the challenges in brown bear conservation in the northern Dinarics?

The workshop then sought to establish the problems or ‘challenges’ facing the organisations represented in brown bear conservation across Slovenia and Croatia. These challenges were noted during a group discussion exercise and outlined in plenary. The combined ‘key challenges’ were thus summarised:

CHALLENGE 1: Conservation status of the bear population, including monitoring of the conservation status of the bear population, contrasting the legal status of the bear across borders, the need to establish population monitoring and maintaining a desired population structure (sex, age and genetic structure), and therefore population viability; in addition to:

- Habitat issues, including the fragmentation of bear habitat with increasing urbanisation and highway barriers.
- Supplementary feeding, including a lack of understanding of the influence of supplementary feeding, unwanted side-effects of feeding practices, such as problems with wild boars and increased reproduction rates of bears.
- Commercial hunting and its possible effects on population.

BOX 3

Scenario criteria ¹

A good scenario is...

- *Plausible*
- *Grounded: based on events from the past (present)*
- *Challenges and encourages ‘thinking out of the box’*
- *Relevant – deals with important topics*
- *Internally consistent*

CHALLENGE 2: Trans-boundary cooperation in bear management, including the need to overcome inequalities in bear population interventions across Croatia and Slovenia, such as developing mutual goals for culling quotas, age and sex structures, on the population level. A lack of joint coordinating body for cross-border bear management is a challenge, which requires cooperation on high political levels and the sharing of monitoring methods, as well as the involvement of ministries and government departments, scientific researchers and top-level hunting organisations.

CHALLENGE 3: Public tolerance of bears, including the lack of understanding of and indicators by which to define ‘social carrying capacity’ and ‘bear-people conflicts’, and negative opinions held by the general public regarding bear management, for example bear damage and the risk of human attack. The key challenge to overcome for bear conservation is therefore to increase positive perceptions held by the general public regarding bear management, in addition to:

- Damages, and the responsibility of the state to provide compensation due to the protection of the bear species, in addition to huge differences in compensation levels between Slovenia, Croatia, and other EU member states, raising questions of necessity and need for discussion.
- Problematic bears and the lack of clear defining indicators or measures in place to prevent the origin of problem bears.
- Cultural and economic value of bears, and the lack of traditional use of bear products (therefore limited market), the need to increase bear value for different interest groups from both an economic and emotional perspective, and the need to establish a joint strategy for ecotourism.
- Public perceptions of orphaned bears and the difficulties of maintaining and justifying bear sanctuaries, given views on euthanasia and keeping bears in captivity.

Following this group exercise, individual participants were asked to prioritise the key challenges in order of their perceived importance to the topic; therefore each participant added a coloured dot to two topics to indicate their prioritisation. The coloured dots were also divided between representatives of Croatia and Slovenia. The results of the prioritisation exercise may be found in Box 4; subsequently the participants agreed that Challenge 3 should be linked to Challenge 2 (as closely related) for the following ‘solutions’ workshop focus.

Solutions to challenges facing bear management

The workshop participants then contributed to group discussion regarding the possible solutions to resolve the key challenges previously summarised. Participant groups presented their solutions in plenary and grouped them according to challenge; these solutions are summarized where possible and presented in Box 5.

BOX 4

Key challenge prioritization

Challenge	Croatian Participants	Slovenian Participants	Total
1	6	6	12
2	10	7	17
3	4	7	11

BOX 5: Key challenge prioritization and suggested solutions

Challenge 1: Conservation status and public tolerance

Suggested solutions

- . Joint population monitoring of abundance/number and the effective population size on the level of the northern Dinarics and other demographic parameters, including non-invasive genetic monitoring by autumn 2013.
- . To find a financial mechanism to include BIH into monitoring on the population level [cross-border].
- . Database creation for bear mortality, made available for institutions involved in bear management in each country, based on tissue sampling and defining a joint set of parameters (joint collected data).
- . Planning of culling within strict criteria of population conservation and at the same time to maximise socio-economic value with a goal of increasing social carrying capacity.
- . Intervention in population to maintain a natural sex and age population structure.
- . To form a European coalition to determine the conservation status of the bear population (those countries that have a tradition in sustainable bear management).
- . To reach an agreement on the protocols for orphaned bear management, including the potential to maintain bear sanctuaries as important for education and public perceptions.
- . To maintain and improve connections between habitats.
- . Ensure the same legal status of bears in both Croatia and Slovenia; it is suggested for bear to have a game status in both countries, which would improve public tolerance and perceptions of damages.
- . One uniform plan of bear management in Slovenia and Croatia [looking at Slovenia and Croatia as one unit], on the population level.
- . To decrease the intensity of supplementary bear feeding.

Challenge 2: Trans-boundary cooperation

Suggested solutions

- . Mutual understanding and definition of 'management'.
- . SOPs as a legislative basis for cooperation.
- . Frequent and good exchange of information.
- . Comparable monitoring and regulation/legislation that controls it, as well as developing a deep understanding of the biological status of the population (beyond monitoring).
- . Cooperation can be informal (this is easier from an operational point of view although potentially unstable), or formal (progressing long term goals and including 'experts').
- . Establishing joint working groups and a joint strategy (an over-arching document), with national strategy documents presenting operational elements; joint working groups should involve experts from neighbouring countries and the cooperation of expert Slovenian and Croatian committees.
- . National level groups for large carnivore management to meet at least once per year with neighbouring national level groups.
- . Significant levels of consistent collaboration in the planning and implementation of culling; comparisons of current management and identification of best practice.
- . A consistent approach taken by experts, the opportunity to influence decision-making and informal expert-level cooperation supported by government.

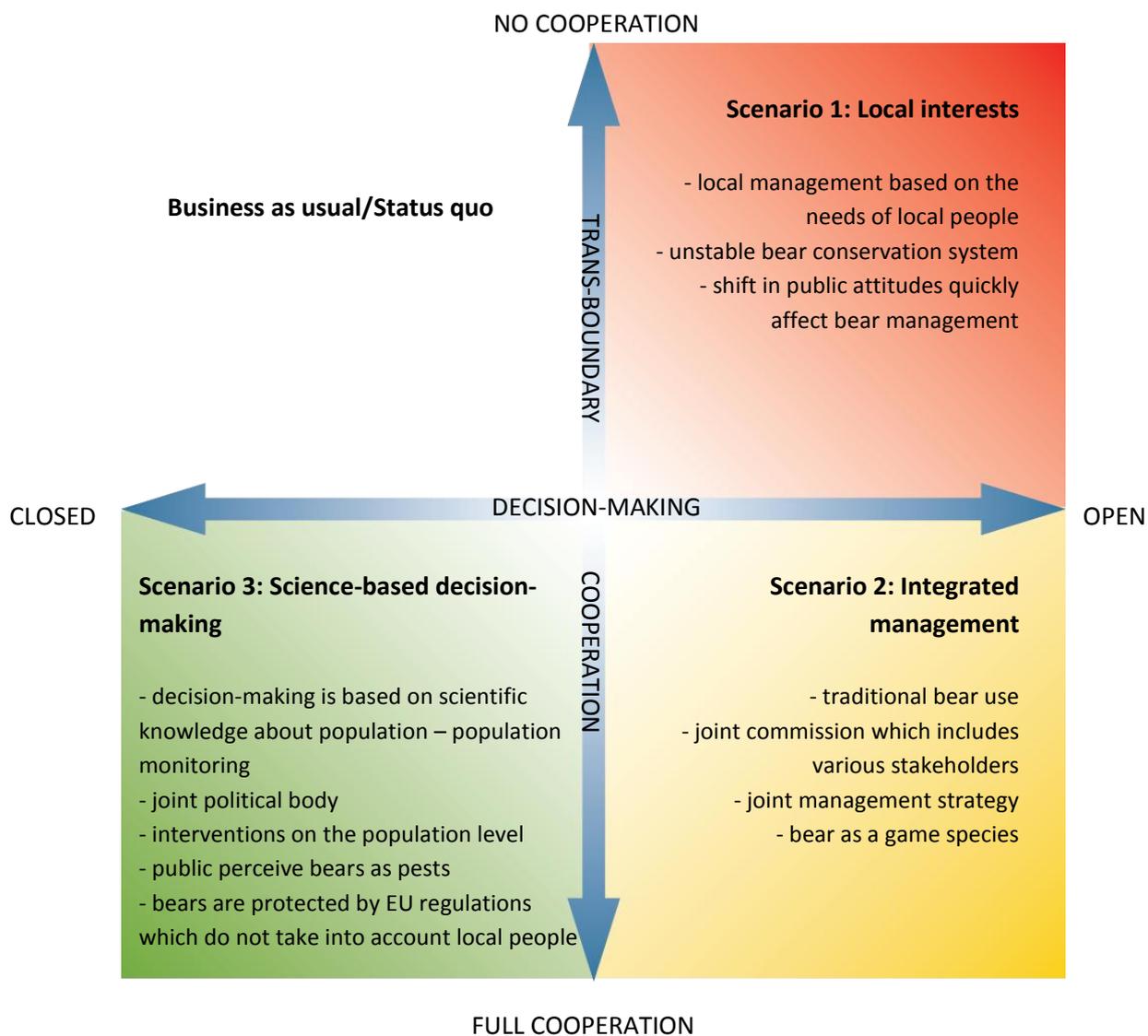


In line with the structured 'scenario method', the key challenges thus provided the basis for a set of scenario axes (Figure 1), with scenarios generated by the facilitation team utilising the ideas presented as solutions and detail of the key challenges during the workshop lunch break. The basic characteristics were presented graphically to the participants on the workshop (Figure 1). The full descriptive scenarios are presented in the following section.

Scenarios for the future of bear management in the northern Dinarics

Following the lunch break, the lead facilitator presented the scenario axis and outlines, as follows:

FIGURE 1: Axis, title and basic characteristics of scenarios



Scenario 1: Local interests

The bear is one of the game species that can be hunted. Bear management is decentralized amongst local people, whose interests play a crucial role in the planning of bear management. The decisions are made by the local bear management boards, which act on the level of regions in Slovenia and counties in Croatia. Local mayors take turns in running the presidency of the boards. Regional reports are annually collected by the national authorities and a national report on bear conservation status is produced by compiling the regional reports. The key topic discussed in the meetings of the local bear management boards is the culling of bears in order to prevent damages occurring. In these discussions, the loud interest groups usually win. The bear management is widely accepted since it is adapted to local needs. The focus of the management is how to satisfy the local interest. The bear conservation system is unstable because it is managed on a very small spatial level. There is a lack of cross-border consistency and knowledge exchange regarding important issues (deciding culling quotas, structure of culling, sex and age) of bear management, and bear monitoring is state limited. The experts, as one of the stakeholders, often stand on weak ground and their opinions are rarely taken into account. There are few human-bear conflicts and the social carrying capacity is well known. The bear management strongly relies on socio-economic data and can change overnight as a consequence of a quick shift in public attitudes, which adds to the instability of the conservation system.

Scenario 2: Integrated management

Since the status of bears as a game species was agreed through trans-boundary collaboration, there has been an increase in the traditional use of bears and bear products in both Croatia and Slovenia, in particular a rise in the market for bear meat in the urban areas of Slovenia. Culling is planned in a way that maximises the income from trophy hunting. Foreign hunters visit both Slovenia and Croatia for the bear hunting experience. Local tourism businesses are making considerable profit by providing services to the foreign guests. The initial income from the trophy hunting has inspired the local businesses to ensure more sustainable use of the bear, so they have started offering "experience bears" tours within their eco-tourism provision. The commercial value of bears has increased, however it is uncertain how this has influenced public tolerance of the increasing bear population as damage compensation payments are no longer provided by the government. A levy is being collected from all the profit-making uses of bears. The collected money is used for population monitoring and research, as well as to pay for organizing workshops and meetings of the different interest groups to talk about the goals and implementation of the bear management. Cross-border bear management is undertaken by a joint commission that incorporates representatives from the different 'bear' stakeholder groups. The commission have a statutory duty to produce a joint management strategy, which is reviewed on a five-year basis, with goals and action points progressed through bi-annual meetings. Reaching decisions and compromise with a large and varied management structure is difficult, requires a lot of resources, and the commission struggles to finalise the review period. Administrative obstacles of cross-border issues also arise and there are many disagreements regarding financial aspects. Due to its complex functioning system, the commission fails to act quickly in urgent cases, thus creating a lot of turmoil amongst the public, who are in need of quick and concrete solutions. National sub-groups enforce the operational aspects of the joint strategy, which includes consistent, cross-border population monitoring and cull plans, with the aim of ensuring a mixed/the appropriate age, sex and genetic structure, and a sustainable bear population.

Scenario 3: Science-based decision-making

The decision-making process is based on scientific knowledge regarding population and monitoring. Therefore, there is a good level of knowledge about the effects of feeding, genetic structure of the population, population size and population trends, so we have enough data to implement a culling system that will maintain the sex and age structure at the proper level. Monitoring and legal status of the bear is harmonized among the two countries and there is a rich scientific database shared between the countries. There is a formally-organized joint political body between Croatia and Slovenia, and common legislation defining this joint management. Due to a top-down decision making process, the protection under the EU legislative does not take into account the needs of local people. As a result, the decision-making process is simplified as the decision-makers need only to accept the proposals from the scientists. Because decision-making is only influenced by scientists, it inevitably excludes other interest groups. This causes negative attitudes towards bears within the general public, who perceive them as pests. However, due to a lack of social research (human dimensions), the actual opinions and attitudes towards bears are not well understood. Since the bear has the status of a protected species and interest groups are not involved in the decision-making, there is opposition to management from the hunters and farmers. Therefore, bears don't have any economic and traditional social value for the people that share the same space as the bears. There is a low social carrying capacity and a lot of damage compensation. Many see bear management as rigid and impractical, and view bear conservation as imposed conservation. Some speculate that a lot of poaching is occurring. Due to the nature of bear management governance (cooperation, science led decision-making), it is possible to prevent further defragmentation of habitats. For instance, at some hot-spots, new connections between patchy areas of habitat have been established (providing crossings for wildlife).

At this point, participants raised concerns regarding the basis for the scenario outlines, their relevance to the workshop, and uncertainty as to their use in developing serious and practical strategies for bear management. This was taken on board by the facilitation team and with further explanation and reassurance of the potential, and novel, use of the method, the participants contributed suggested changes to the scenarios (to ensure they were in line with the criteria outlined in Box 3), and continued with the analysis phase.



Scenario analysis

Participants remained in their group allocation and undertook an analysis of the scenario outlines, identifying and noting the potential advantages and disadvantages to their interests given the characteristics of each of the scenarios. Advantages and disadvantages for long-term brown bear conservation are presented in Box 6, and form the basis for the interpretation of recommendations for bear management.

BOX 6: Analysis of the advantages and disadvantages of each of the scenarios

Scenario 1: Local interests

Advantages

- ✓ Interests of local community recognized and taken into account.
- ✓ High level of acceptance and satisfaction about management within local community.
- ✓ Minimal human-bear conflict.
- ✓ Management is well adapted to the local environment.
- ✓ Quick resolution of human-bear conflict situations.
- ✓ High level of adaptability within management.
- ✓ Minimal damage done by bears; any damages are well accepted.



Disadvantages

- ✓ Loss of population-based management (does not and cannot take into account population parameters as it is too local and therefore unsustainable).
- ✓ Public attitudes directly influence management (a probability of quick manipulation).
- ✓ Interests of local community are above conservation of bear population (a long term loss for bears).
- ✓ Interests of the local community are imposed over anybody else.
- ✓ Local knowledge is limited and lacks professional expertise.
- ✓ System is too open and allows the interests of particular individuals to overpower other interests.
- ✓ Habitat for bears is larger than the local community area (and larger than the hunting ground).
- ✓ Biology of the species is not taken into account.
- ✓ From a legal and governance point of view this scenario is not acceptable.

Scenario 2: Integrated management

Advantages

- ✓ Integrated bear management at the population level (wide 'consensus').
- ✓ Increases socio-economic value of bear for different interest groups.
- ✓ Results in positive attitudes towards bears.
- ✓ Increase in social carrying capacity.
- ✓ Balanced between interest of bear management and local community.
- ✓ Recognizes the necessity to manage species at the population level.
- ✓ Generates more money for conservation.
- ✓ Greater power of influencing other international decision making processes due to joint Cro-Slo trans-boundary cooperation.
- ✓ Better integrated management that incorporates biology of the species.

Disadvantages

- ✓ Complexity of management due to different interests (e.g. science and other experts).
- ✓ Difficult to ensure that the joint commission will actually be operational.
- ✓ Long term process.
- ✓ Lack of new knowledge/insights because there is no scientific research.
- ✓ Entropy - there is a lot of energy being used to balance different interests.
- ✓ Problems with responsibility for particular actions (one partner can always point the finger toward the other, or towards the EU).
- ✓ Not adaptable.
- ✓ There is a fear that the utilization of bears will overpower the conservation of bears.
- ✓ Increased possibilities for problems emerging from local pressures (e.g. decrease in abundance of local population and local habitat quality).
- ✓ Less money for projects like LIFE and INTERREG, and for research in general.

Scenario 3: Science-based decision-making

Advantages

- ✓ Good knowledge regarding population and parameters that affect it.
- ✓ A type of management that includes the complete knowledge about population and its biology.
- ✓ Able to predict consequences.
- ✓ Efficient and simplistic management with easier implementation of knowledge (science and experts participate in management).
- ✓ Less dependence on daily politics.
- ✓ Easier to implement unpopular decisions.
- ✓ Temporarily the population can be conserved (i.e. short term bear conservation).



Disadvantages

- ✓ There is a gap between what the real situation is and what interest groups want (i.e. what interest groups think and want regarding bear conservation is not incorporated in bear management).
- ✓ It decreases acceptability, tolerance and the value of bear in society.
- ✓ Bear is not considered part of the natural heritage.
- ✓ Uncontrolled illegal interventions in bear populations are carried out by individual interest groups.
- ✓ Bear conservation interests are above the interests of local communities, decreasing the tolerance toward bears.
- ✓ Public perception of bears is negative and bear conservation is considered as imposed conservation.
- ✓ Does not include all elements of society.
- ✓ Management is very rigid and impractical.
- ✓ EU regulations neglect specific local characteristics.
- ✓ Due to science-based decision-making that excludes other interests groups, there is a high probability of opposition that might have a negative impact on conservation.

Participant reflections and project next steps

A short questionnaire was used to evaluate the workshop and scenario workshop method adopted.

Participants' expectations of the workshop were mostly met (13 of 18 responses). Participant explanations and comments included that the workshop was a highly anticipated initiative and opportunity for open discussion regarding bear management with the key stakeholders, as well as for making connections and exchanging ideas. Trans-boundary meetings are crucial for the effective management of a shared population and both countries showed a great deal of interest in future collaboration. The workshop was considered an interesting new approach to addressing problems and finding the right resolutions for both countries. Participants shared some concerns as well. They missed achieving concrete results and outputs for future cooperation and felt that the topic was too broad. They stressed the need for trans-boundary cooperation in defining the next operational steps, and the need to use the data obtained in the workshop.

Participants were satisfied with the workshop approach (17 of 18 responses). The facilitation was considered correct and the innovative method was properly used. It was described as a well conceived way of working and reaching agreements. Participants suggested looking at the meaning and role of the competent institutions and ministries, due to their lack of authority. The workshop moved towards a common goal, but focussed on expressing opinions regarding large carnivores in principle, rather than operationally. There were no agreements, responsibilities and rights defined. Other concerns that the participants shared with the research team included that there was little time to explain the new method and its purpose, a lack of time for required discussions and solution-generating. In the second part of the scenario workshop (drawing the axes) there was some confusion and difficulties in understanding of the method. Some participants suggested more emphasis on the presentation of the method, perhaps illustrated with a case study. In general participants saw great potential in the method, with increasing familiarity.

Via e-mail workshop participants were asked to give comments on the workshop and the draft report distributed to them. Participants once again commended the initiative of organizing the workshop and the importance of trans-boundary meetings. At times it was mentioned that the scenario workshop method is still not enough clear since none of the scenarios have been selected as the best one. They see the advantages of the method in clearly defining the positives and negatives to approaches in bear management. One participant pointed out that the abundance of bears must be consistent with bear habitat capacity in the broadest sense, in order to prevent damages to the private property. He proposed supplementary bear feeding on the feeding sites as an effective way to maintain relatively high densities of animals.

Recommendations for bear management in the Northern Dinarics

From a review of the literature which deals with institutional aspects of bear management in Slovenia and Croatia and information presented in this report, we made recommendations for long-term conservation of bear in the Northern Dinarics. Recommendations contain strategic directions and indicate objectives that were repeatedly identified by workshop participants as desirable.

RECOMMENDATIONS

- *Good knowledge and understanding of the bear population status on one hand, and social carrying capacity on the other hand, is crucial for efficient bear conservation. The effectiveness of the management measures undertaken should be evaluated in that respect on a regular basis.*
- *A system of cross-border cooperation should be put in place. Frequent and systematically-organized information exchange should be a starting point. Subsequently more formal cooperation should be initiated, and joint vision and management goals developed. The selection of the measures needed to reach the goals and their subsequent effectiveness should be discussed on the bilateral level; however their actual implementation should be flexible and adaptive to national/local needs. The final aim should be coordinated management at the (meta-)population level.*
- *Management should try to maximize the benefits for local inhabitants in a way that will not endanger the long-term survival of the bear population. The measures to achieve this should not only be directed to the use of culling: ecotourism opportunities should also be investigated and developed in this respect, as well as the direct involvement of the public in bear management. Such strategies have great potential in increasing general understanding and support of bear management amongst the interested public.*
- *A platform for a more intensive dialogue among different stakeholders from both countries should be established. Resulting experience exchange and social learning will allow for better solutions in the long run. To avoid only the loudest groups influencing decisions, great care has to be taken that all interests have the opportunity to raise their voices.*
- *In order to achieve and maintain high social carrying capacity, greater emphasis should be given to the prevention of bear-human conflicts including the damages to agriculture and habituation of bears (a direct threat to people's lives).*
- *Awareness-raising should be undertaken on the local scale to educate and inform local communities of the need to manage and conserve bears. Scientists should be supported to translate ecological monitoring and social survey findings for a non-expert audience, ideally ensuring mutual support for scientific data collection on bear management from the local community.*
- *We should seek to change the attention from species-focused conservation to holistic, ecosystem scale monitoring and knowledge exchange regarding the benefits of ecosystem conservation, in order to raise public awareness about the important role of bears in the ecosystem.*

Literature and more about scenario analysis

- ¹ Brummell, A., MacGillivray, G. 2008. Scenario Planning - A Tool for Navigating Strategic Risk. Scenarios to Strategy Inc. (self published).
- Chermack, T. J., Lynham, S. A., Ruona, W. E. A. 2001. A Review of Scenario Planning Literature. Future research quarterly.
- Moen, R, Ronsson, R. 2009. Scenarios in the context of Future Forests
- Patel, M., Kok, K., Rothman, D. S. 2007. Participatory scenario construction in land use analysis: An insight into the experiences created by stakeholder involvement in the Northern Mediterranean. Land Use Policy, 24, 546–561.
- Peterson, G. D., Cuning, G. S., Carpenter, S. R. 2003. Scenario planning: A Tool for Conservation in an Uncertain World. Conservation Biology 17 (2), 358–366.
- Swart, R. J., Paskin, P., Robinson, J. 2010. The problem of the future: sustainability science and scenario analysis. Global Environmental Change, 14, 137–146.

Acknowledgements

The workshop was organized by the Biotechnical Faculty, University of Ljubljana and Faculty of Veterinary Medicine, University of Zagreb under FP7 project »HUNTING for sustainability« (2112160) funded by the European Commission. We thank workshop participants for their constructive cooperation and important contribution to the research process. We hope that the results of the workshop will contribute to an improvement in bear management.

<http://fp7hunt.net/>

