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**Report on the**  
**Status of Large Carnivore Conservation in the**  
**Baltic States**

and

**Action Plan for the Baltic Large Carnivore**  
**Initiative, 2001-2005**

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## 1. INTRODUCTION

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The present report has been prepared at the request of the Council of Europe with the main aim of giving an overview of the status of large carnivore conservation in the Baltic States – focussing on the developments with national action plans – and to present a work plan for the activities of the Baltic Large Carnivore Initiative, a working group formed in the spring of 2000 under the umbrella of the European Large Carnivore Initiative.

Since regaining independence in 1991, the Baltic States have had the eyes of Europe and indeed of the international community on them, including much attention directed to learning about the state of the natural environment. Perhaps the visible signs of environmental degradation in localised “hot spots” in the Baltic States as a result of Soviet military and heavy industry presence was not a surprise, but the picture of largely intact natural landscapes hosting viable populations of large carnivores -- and other natural values lost to a great part of Europe -- was not necessarily expected.

The protection of the natural environment and the conservation of large carnivores (Wolf, Eurasian Lynx, and Brown Bear) is an important issue for the three Baltic States, and with the imminent joining of the European Union, the Baltic States’ role in protecting the wider European natural heritage has been increasingly under focus.

The present report gives a general overview of the status of large carnivore protection for the three Baltic States, focusing on how the national management plans fulfil the guidelines and recommendations set out in the European Action Plans prepared by the Large Carnivore Initiative for Europe and the Council of Europe. This comparison and analysis has been possible for Estonia and Latvia, but not for Lithuania, which has not yet begun preparation of such plans. Furthermore, the report attempts to provide a framework action plan for the Baltic Large Carnivore Initiative (BLCI), which can be a tool and reference point for the ongoing work of the various scientific, governmental and non-governmental partners in the region working to ensure the long-term viability of large carnivores.

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## 2. ACKNOWLEDGEMENTS

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This report has been prepared with the assistance of many specialists from the Baltic States as well as with input from experts within the European Large Carnivore Initiative network. Much of the work got its foundation from the 3<sup>rd</sup> meeting of the Baltic Large Carnivore Initiative meeting in Siauliai, Lithuania in April 2001, where participants in the workshop contributed to the development of the BLCI action plan. Thanks to William Prates Urquhart, Alistair Bath and John Linnell from the LCIE for their guidance and input. Especially valuable input to this report has come from Janis Ozolins and Zanete Andersone from Latvia, who contributed to the analysis of the Latvian action plans as well as to the development of the revised action plan as it appears in this report. It is hoped that this report can serve as a basis for the development of the Baltic Large Carnivore Initiative.

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## 3. OVERVIEW OF STATUS OF LARGE CARNIVORE CONSERVATION IN THE BALTIC STATES

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The following section of the report aims to give a brief context for the analysis of the national action plans and their fulfilment of the recommendations given in the European Action Plans.

### 3.1 ESTONIA

Of the large carnivores, Estonia is inhabited by the wolf, lynx and brown bear, and for all three it can be said that the present populations are currently viable. With a large part of its territory covered by forests and wetlands, and with low human population density, Estonia features good natural conditions to support the life functions of these mammals. Over the last decades, conflict between these large carnivores and their only enemies, man, has been mainly centred around competition for prey species, but

has not become serious enough to endanger them. In recent history, the last time the large carnivores faced intense human pressure and were threatened was during the 1960s, in a period where extermination, especially for the wolf, was propagated. This was a reaction to very high numbers in the post WWII period, which resulted in significant conflicts with humans and a situation which seemed out of control.

According to the current official data, the Estonian wolf population is comprised of 100-150 individuals, and has remained fairly stable during the last 5 years. The present size of the lynx population is given as 600-900 individuals, and the Estonian brown bear population is estimated to be 300-500 individuals.

With the increased emphasis on joining the European Union and joining international agreements on the protection of the environment, Estonia has found it necessary to carry out inventories and create better information concerning habitats and species of international importance. In 1998, within the scope of the project, "National Inventories of Internationally Important Habitats and Species in Relation to International Conventions and Directives," the preparation of a management plan for the large carnivores was initiated. The project resulted in a draft plan, which when reviewed by the Ministry of the Environment, was found to be insufficient for effective control and management planning. It was necessary to elaborate on the draft and involve more experts from various stakeholders. A working group was formed in the autumn of 2000 involving university biologists, state officials in nature conservation, hunting and forestry, and other respected specialists. The resulting "Large Carnivore Control and Management Plan, 2002-2011" is a comprehensive document which brings the three species under a common light, and also identifies and addresses their individual conservation concerns.

The control and management plan working group worked through the first half of 2001, and on 26 July, 2001 the plan was defended in front of the state commission on species management plans, which proposed it be forwarded to the Minister of the Environment for official approval and thus would gain a legal status for implementation. At the time of this report, this has not been achieved because there is no present legislation on which to tie these management plans. Previous management plans for species have been approved and given legal status referring them to the Act on Protected Natural Objects of Estonia, as they have all been species on the state list of protected species. As this is not the case for the large carnivores, there is a legal loophole that needs to be solved. The Ministry of Environment, however, has expressed its clear will to find a solution to this problem, and to provide a legal basis for the plan's implementation, so there is reason for hope that the future for large carnivores will be more secure.

### **3.2. LATVIA**

The wolf and lynx are a natural part of the fauna of Latvia, and the brown bear occurs rarely. Like in Estonia, the natural landscape of Latvia well supports viable populations of large carnivores.

According to expert opinion, the current number of wolves in Latvia is 500-600, and for the lynx around 500 animals. The brown bear is a marginal species with only occasional occurrences and is strictly protected in Latvia.

The Latvian large carnivore action plans were elaborated as part of the framework project, "Inventories of Species and Habitats, Development of Management Plans and Capacity Building in relation to Approximation of EU Birds and Habitats Directives," which was carried out between 1998-2000 and financed by the Danish Environmental Protection Agency. The aim of the project was to assist the Latvian authorities in the field of nature conservation in their preparation for reintegration into Europe.

A contract on the elaboration of the large carnivore action plans was made with the former Latvian State Institute of Forest Inventory in November 1998. The contract also prescribed the carrying out of case studies on the reproduction of wolf and lynx as well as on brown bear status. The main project executor on the Latvian side was biologist Jānis Ozoliņš. Assistance was provided by Žanete Andersone on the wolf, Alda Pupila and Guna Bagrade on the lynx and Valdis Pilats on the brown bear. A particular study report was written on the brown bear status and it concluded that no national action plan was currently needed for this species. Study results on the wolf and lynx were included in the corresponding draft action plans. After submitting the draft action plans by 30 June 2000, a working group was established to review all drafts (13 species action plans and 1 ecosystem management plan) and to decide a proposal for their implementation. This working group elaborated a general design for national species

action plans and drafted regulations to order and work out any new plan. Concerning the drafts of the Large Carnivore Action Plans (LCAP) it was proposed to recommend them, with minor amendments, for approval and signing by the Minister of Environmental Protection and Regional Development. It was also decided to translate the complete original text of LCAP into English (Annex 2 and 3). Thus, at present, the action plans are in the hands of the Latvian ministry and are waiting for action. The actual implementation of the plan, however, has already begun with, e.g., monitoring activities and the amending procedure of the state hunting regulations. A considerable difference from European experience was that, in preparation, the authors did not widely consult other interested parties (mostly researchers not supporting conservation ideas and hunters) during the preparation of LCAPs. Communication with the holders of opposite opinions in Latvia is however suggested as one of the most important actions during the implementation process.

The planning period is also different. While the pan-European plans are aimed for the next ten-year period, the Latvian national LCAPs suggest to make revisions after two years, since circumstances in the Baltics could change rather drastically.

Now that significant efforts have been made to prepare feasible conservation strategies for the wolf and the lynx in Latvia, it is crucial that the plans are given the appropriate legal status and are taken into the implementation phase. At the writing of this report, the Latvian Ministry of Environmental Protection and Regional Development did not have a clear plan or procedure for adopting the plans, however indicated that this would be a priority during the fall of 2001.

### **3.3 LITHUANIA**

The wolf and lynx are regular inhabitants of the Lithuanian landscape, while the brown bear is only an occasional visitor. The wolf population has remained relatively steady over the last decade, with numbers around 500-600 individuals, and has been hunted as a large game species. Since the ratification of the Bern Convention in 1996, legislation is in place which forbids the killing of wolves from 1 April to 1 July. The lynx was a game species for 10 years between 1965 and 1975, and since then has been off the list of hunted species. In 2000, the lynx was included in the Red Book of the Lithuanian Republic, indicating it as a protected species under the III category.

Preparation of separate action plans for the conservation of wolf and lynx have not yet been undertaken, and because of this an analysis of European and national action plans has not been possible. It has been stated, however, that the preparation of national action plans will likely be undertaken in the near future, but will probably depend on getting support through a foreign funded project, as has been the case in Latvia and Estonia.

The need for these plans should be emphasised, as the Lithuanian populations of wolf and lynx are an integral part of the regional populations and their conservation and management should be co-ordinated with the efforts of surrounding countries.

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## **4. COMPARISON OF THE EUROPEAN AND NATIONAL ACTION PLANS**

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### **4.1 GOALS AND METHODS**

In the following section of the report the national action plans for large carnivore conservation are compared and analysed with the pan-European action plans prepared by the LCIE. The aim is to review how the action plans prepared at the national level in the Baltic States fulfil the recommendations set out in the European framework documents. It also serves to introduce the contents of the national action plans in a summarised form. The comparisons and discussions are presented by species and are approached and commented according to the structure of the European Action Plans.

### **4.2 WOLF**

#### **4.2.1 ESTONIA**

As is mentioned above (3.1), the Estonian Large Carnivore Control and Management Plan (ELCCMP) (Lõhmus, 2001) presents a comprehensive plan which addresses the joint as well as

individual needs of the three large carnivores present in Estonia, in order to secure their long term viability and minimal level of conflict with humans.

#### *Background Information*

For all three carnivores, the ELCCMP gives a thorough presentation of the species' distribution, numbers and biology. In the second chapter, the ecological basis for control and protection are described in significant detail, discussing the maintenance of viable large carnivore populations as well as the relationship dynamics of large carnivores and other mammal species. The background also discusses the positive role of the wolf as a keystone species to natural systems, discussing effects like the regulation of smaller predators, the influence of game ungulates to forest damage, the control of beaver numbers, and the increase in the food base for scavengers. The main negative "cost" of maintaining large carnivore populations is the loss of domestic animals.

Based on the review of the survey methods for assessing population size and distribution given in the plan, **the present size of the Estonian wolf population is given as 100-150 individuals.**

#### **Wolves and Humans**

The relationship between humans and wolves is discussed as relevant for Estonian conditions in as much as it relates to game ungulate populations (and thus competition to hunters) and the damage to livestock. Wolves have inhabited the land area of Estonia for 10,000 or more years, which is slightly earlier than when the first known human inhabitants are recorded. The numbers are thought to have remained high until the period of the second half of the 19<sup>th</sup> century when persecution of predators was widespread through Europe. Perhaps the closest to an outright extermination of the wolf comes from the post WWII efforts which was a reaction to sharp increase in numbers and thus cases of human conflict.

#### **Threats, Limiting Factors, and Obstacles to Conservation**

The threats factors and obstacles to conservation are given in Chapter 3 of the ELCCMP, which examines the main threats to carnivores collectively, and bringing out the differences where necessary. The threats that are presented are hunting and poaching, habitat destruction, decrease in abundance of prey species, disturbance, damage from roads and artificial barriers, negative public opinion, cross-breeding, and spread of disease in population. These threats are much in line with those presented in the EWAP.

For the wolf, the main threats to maintaining a viable population in Estonia are over-hunting and a negative public opinion. The other mentioned threats are not perceived to be of important concern for the wolf in the near future. The threat of hybridisation is recognised, however cases of suspected hybridisation have not been proven in the Estonian wolf population, and thus it is not presented as an important threat. It is mentioned, however, that a strategy is needed in case hybrids appear.

#### **Conservation Status and Recent Conservation Measures**

Information regarding the legal status and conservation measures are given in chapter 4 of the ELCCMP, under 4.2 – legal basis for large carnivore management. The wolf has been a hunted species in Estonia throughout history, though the numbers were very low at the beginning of the 20<sup>th</sup> century. The highest numbers were reached in the period following World War II, to which the reaction was an intensive campaign using professional hunter brigades, bounties, poison, and by which the wolf was given a free status for hunting. After the discontinuation of poisons and use of professional brigades, the numbers again rose steadily. The present legal status for the wolf is based on the hunting act passed in 1994 and the governmental decree of 1996 naming it a game species. According to this legislation, the wolf is considered "other game," and hunting is permitted year-round with all legal means and methods, except with foot-traps. The international agreements which describe the status of the wolf are also presented in the plan.

#### *Goals and Objectives*

The main objective for all three large carnivores given in the ELCCMP is their preservation as free-ranging species living in natural habitat. The specific objectives for Estonia is the maintenance of favourable status for these species, and the following goals have been specifically cited for the action plan during the period of 2001-2011:

- The number and natural functions (prey, habitat, behaviour) of Estonian large carnivore populations are preserved as much as possible to maintain the viability and evolutionary potential of these populations;
- Damages caused by large carnivores to agriculture are kept optimally low, considering the population viability;
- The possibility to hunt large carnivores is preserved.

For the wolf, between 2002-2011, the number should be maintained at a level of 100-200 individuals, which will support the wolf feeding primarily on wild animals and inhabiting natural habitat while not endangering wild boar or other game ungulates. This population size also will not likely inflict any greater damage to livestock than has been experienced in the last years, which has not caused negative public opinion. This suitable population size can be controlled through regulated hunting.

#### *Actions Required to Meet Goals and Objectives on a European Level*

The actions described in chapter 4 of the EWAP are mainly relevant and appear to have been adequately considered in the Estonian action plan. Actions under 4.8 to 4.12 have special relevance to the action plan for Estonia and have been sufficiently addressed. These are addressed in more detail under the following section.

#### *Required Actions for Estonia*

The list of actions which are given in the EWAP under country-specific actions for Estonia only very generally covers some of the needs that Estonia has identified in its own action plan, and can not be considered a sufficient list. Listed actions 2.3, 2.4, 7.4, 7.7., 8.5, and 12.2 (those listed actions not specifically speaking about actions needed on a broader European scale) have been sufficiently addressed in the national action plan, and can be found in the specific actions proposed in implementation.

More specifically, 2.3 and 2.4 have been addressed in that the national plan has been prepared and has involved experts representing a wide range of stakeholders.

Studies to assess the genetic identity of wolves (7.4) is brought out in the EWAP, but is not specifically mentioned as a priority activity in the Estonian action plan. Studies in demography are particularly stressed, as are analyses of hunted individuals (for which genetic identity is also possible), and genetic analysis of suspected wolf-dog crossbreeds is foreseen if proven hybrid cases are found and their proportion in the population can be determined, in which case the wolf management may need to be re-viewed.

The establishment of a permanent monitoring system for damages caused by wolves and other predators (7.7) has been addressed in the ELCCMP and is given high priority.

The conducting of more research on the impact of wolves and hunters on local prey (8.5) has not been specifically mentioned in the list of prioritised applied research activities in the ELCCMP, however the focus on monitoring and information systems, and the recommended approach of creating a state-funded position of large carnivore management co-ordinator, a national working group and support persons in each of the counties creates the framework within which such studies are feasible and their results can be acted upon. It is important to mention, though, that during the preparation of the ELCCMP, a study of the population dynamics between predators and prey species, also taking into account hunting pressure, was made using multiple factor regression models. This study is presented in Annex II to the plan (Annex II to this report).

For the effective implementation of the ELCCMP, the central role of an individual in the position of large carnivore control and protection co-ordinator. has been stressed, for whom one of the tasks would be the regular communication with other researchers and organisations working with large carnivore conservation. This, along with the continued participation of experts in the LCIE and BLCI should secure the holding of a close link among wolf researchers in Europe (12.2).

The following is the table from the Estonian Large Carnivore Control and Management Plan, which summarises the planned activities for the period of 2002-2011, and also gives them a priority rating. This table shows that the activities which are required within the EWAP are well considered, and in the case

that the ELCCMP is adopted, can be seen to fulfil the given recommendations. This table shows the planned activities for all three Estonian large carnivore species.

**Table 11.** Activities planned in the Estonian Large Carnivore Control and Management Plan (Lõhmus, 2001), for the years 2002-2011, with relevant priority (PR.). Essence (for V-4 also necessity) of activities marked by asterisk depend on results of Estonian negotiations with the EU.

No.	Activity	PR.	Related activities
<i>Changing and improvement of legal acts</i>			
I-1	Changing and improvement of hunting regulations	A	VI-1
I-2*	Changing and improvement of nature conservation legislation	A	V-3,4
I-3	Changing penalty fees of illegal kill	B	II-5
I-4	Modernisation of management plan	A	II-1,2
<i>Development of infrastructure</i>			
II-1	Establishment of a position of large carnivore control and protection co-ordinator	A	—
II-2	Establishment of working group for large carnivore control and protection	A	—
II-3	Training of large carnivore experts	A	II-1,2
II-4	Training of hunters in description and sampling of killed large carnivores	B	II-1,3
II-5	Improvement of control over actions with large carnivores	C	I-3
<i>Monitoring and information systems</i>			
III-1	Improvement of hunting statistics	A	IV-1,VI-1
III-2	Development of monitoring methods and concept	A	II-1,2
III-3	Monitoring	B	II-1,2;III-2
III-4	Registration of rabies cases	B	VI-3
III-5	Establishment of system for bear wintering site registration	B	II-1,II-3
<i>Applied studies</i>			
IV-1	Official census error estimation	A	III-1
IV-2	Study of demography and population growth potential	B	II-4,III-1
IV-3	Genetic study of dog-wolf crossbreeds	C	II-4,VI-2
IV-4	Study of location and quality of large carnivore habitats	C	V-1,2;VI-5
IV-5	Evaluation of disturbance effect for wintering bear population	B	III-5,V-1,2;VI-4
IV-6	Evaluation of traffic impact on large carnivore populations	C	—
IV-7	Estimation of lynx influence on roe deer population	C	—
IV-8	Sociological study about bear	C	—
<i>Habitat protection</i>			
V-1	Seasonal protection of bear wintering sites	A	III-3,IV-4
V-2	Conservation of traditional bear wintering sites	C	III-3,5;IV-4
V-3*	Analysis of expediency of large carnivore conservation areas	A	I-2, V-4
V-4*	Establishment of a large carnivore conservation area	C	V-3
<i>Control and rehabilitation</i>			
VI-1*	Regulated hunting	A	I-1,II-1,2,III-1,VI-2
VI-2	Removal of dog-wolf cross-breeds	C	IV-3
VI-3	Removal of rabid large carnivores	B	III-4
VI-4	Rehabilitation of abandoned bear cubs	A	V-1,V-2
VI-5	Additional feeding of bears	C	IV-4
<i>Dealing with damage caused by large carnivores</i>			
VII-1	Establishment of order for informing about damage	A	—
VII-2	Registration and verification of damage	A	II-3,VII-1
VII-3	Development of compensation mechanisms	C	II-2,VII-2
<i>Increasing of awareness and moulding of public attitudes</i>			
VIII-1	Publishing of folders on large carnivores	A	—
VIII-2	TV series about large carnivores	B	—
VIII-3	Publishing shortened version of action plan	A	—
VIII-4	Compilation and administration of web-page	C	—



#### 4.2.2 LATVIA

The main parts of the Latvian Wolf Action Plan (LWAP) correspond to those laid out in the European Wolf Action Plan (EWAP), which is indicative of the fact that the EWAP was used as a framework document when writing the national action plan.

The introduction, stating the overall situation of the species, is present in both plans. In the LWAP, the aim of the AP is also stated.

##### *Background Information*

The “background information” contained in the EWAP corresponds to the main section, “Biological review” in LWAP. Parts 2.1, 2.3, 2.4, 2.6 in the EWAP are covered in part 1 (Species description) of the LWAP. Part 1 of LWAP includes the following chapters: appearance and body size; indications of the wolf’s presence, habitats; diet; daily habits; reproduction; population structure; natural enemies; and competitors.

Part 2.2 of EWAP corresponds to part 2 (Population size and distribution) and part 2.5 to part 3 (Limiting factors) of the LWAP. The three main limiting factors are mentioned in the LWAP: hunting, diseases (rabies and mange) and hybridisation with dogs.

##### **Wolves and Humans**

Human-wolf relationship are not discussed in detail in the LWAP. It is only mentioned that the negative attitude dominates, the reason for which being competition for prey with hunters and some livestock damage (data on damage amount known is shown). The human dimension (HD) aspect has not been sufficiently covered in Latvia so far. Only two popular leaflets on wolf and lynx and a poster on wolf trans-boundary movements (a joint Estonian-Latvian project) were produced. However, the necessity for HD studies and for public awareness raising has been acknowledged by LWAP (under “Required Actions”). Also, the first HD study has been initiated in Latvia (with WWF-Denmark financial support) in 2001 – “Investigation of the Public opinion about large carnivores in Latvia”.

##### **Threats, Limiting Factors, and Obstacles to Conservation**

Threats listed in the EWAP are not equally important to Latvia. The most important ones for Latvia are the following: hunting and poaching, genetic identity (locally), legislation, economic conflicts (locally) and public opinion. Of those, only the first two are included into the LWAP as separate parts. Undoubtedly, hunting is the most important factor influencing the wolf population in Latvia, as more than 100 animals are hunted annually. Also interbreeding with dogs is a problem in some localities with low wolf densities. However, legislative issues, public opinion and livestock damage (locally) are not of less importance. These issues are also addressed by the LWAP but not as separate parts. The other limiting factors and threats mentioned by the EWAP (habitat quality and food availability; small number; fragmented range; fragmented management authorities, law enforcement) are not so important for the Latvian wolf population. Habitat quality is good enough and the range is quite continuous, and the population size is big enough to ensure a viable population being sustainable in the long run. Fragmentation of management authorities is not the case because the State Forest Service is the main body responsible for the wolf management and it is very well centralised. Law enforcement might be a problem if wolf becomes a protected species. In that case, poaching on wolf could be tolerated by the officials. However, it is just an assumption because it is not the case at the moment.

##### **Conservation Status and Recent Conservation Measures**

The LWAP contains a separate section dedicated to giving an overview of the national and international legislation affecting the wolf, and further discusses previous research, and habitat protection.

The wolf has been a freely hunted game animal with no restrictions for the entire 20<sup>th</sup> century, making it the only wild predator in Latvia with such status. Bounties for killing wolves were also paid.

### *Goals and Objectives*

The “Goals and objectives” are not written as a separate section in LWAP, but are included into Introduction section and the summary (in both Latvian and English). The overall goal of the LWAP is to ensure species conservation in the view of rapid economic changes in Latvia. The specific goals are:

- to ensure the spatial continuance of the population and a free ranging of animals between eastern and western sub-populations in Latvia;
- to maintain the environmental carrying capacity and fairly natural ecological functions of the species in ecosystems.

In general, these goals which are more specific to the Latvian conditions concur with those presented in the EWAP goals, which are a little broader.

### *Actions Required to Meet Goals and Objectives on a European Level*

Concerning part 4 of the EWAP, all its chapters (except for 4.6 (Wolf recovery)) are relevant to Latvia. The most essential ones are the chapters from 4.7 to 4.12. The part 4.8 (Wolves and hunters) is specifically addressed in the LWAP as well as the plan for the HD work and applied research is given.

Although the wolf is a common species in Latvia, the studies on its ecology started only at the end of the 1990s. Of the issues specifically mentioned in EWAP, the following have been studied in Latvia, at least to some extent: genetics (4.12.1.) – in collaboration with Italian and Swedish colleagues; mortality and population dynamics (4.12.3) – based on investigation of hunted animals and census data from the State Forest Service; wolf – prey relationships (4.12.4) – food habits studied by scat and stomach content analysis. The need for more applied research (especially using radio-telemetry) has been acknowledged in LWAP.

Making the wolf economically profitable (4.9) is not an issue that has been addressed in Latvia before, though it could have potential as a conservation tool. It is closely linked with the HD issues – if people see that the “harmful” animal can give them some profit, they are more likely to accept it.

### *Required Actions for Latvia*

**Country specific actions** (listed in EWAP) covered by LWAP include the following parts: 4.1, 4.2, 6.2, 7.2, 7.4, 7.7, 8.1, 8.2, 8.3, 8.5, 11.1, 12.2, 12.3.

More specifically to address the actions, a national wolf plan (4.1) has been developed, and co-ordination work (4.2) is done at the ministerial level.

The genetic identity of local wolves (7.4) have been checked by the Italian and Swedish colleagues working with the largest genetic data bases on wolves.

The first monitoring of wolf damages was started by the State Forest Service as all such cases should be reported to the local forestry unit and then to the central office in Riga. If the system continues to work, it will allow obtaining precise data on the amount of damage.

Changes in hunting regulations (8.2) have been proposed and are in process now. Also, state bounties were abolished (8.3).

Research (8.5) on the impact of wolves and hunters on prey is ongoing. However, fundraising is necessary in order to start radio-telemetry projects.

Maintaining a close link between the researchers in Europe (8.12) is done through LCIE and BLCI.

The rest of the actions counted are either partly fulfilled or not fulfilled but their necessity is acknowledged in LWAP (either directly or indirectly).

Some parts were not specifically addressed by LWAP: 7.3, 7.8, 10.1, 12.1, for the following reasons:

A census of existing facilities with captive wolves (7.3) is not a priority as there are very few places where wolves are kept in enclosures in Latvia;

Definition of the most suitable compensation scheme (7.8) is not included into LWAP, although in future, if wolf hunting is restricted, there will be a need for such a scheme.

Identification of opinion leaders and stakeholders in wolf management and setting up local management boards (10.1) is not included into LWAP. At the moment, all wolf management is done in a centralised way.

Co-ordination of scientific research at European level (12.1) was also not mentioned by the LWAP, although it is certainly an important issue.

The missing parts (important for the country but overlooked in the LWAP) should be incorporated into the joint Baltic Large Carnivore Action Plan.

#### 4.2.3 LITHUANIA

Lithuania has not yet begun the process of developing a wolf action plan, however, considering the planned accession with the EU, it is likely to have higher priority in the near future. In response to Lithuania's ratification of the Bern Convention in 1996, under which an exemption was given regarding the wolf, the government did impose a ban on the wolf hunt from the period of 1 April to 1 July. Thus, as far as legislation imposing a wolf hunting season, Lithuania is ahead of Estonia and Latvia. Lithuania should be able to take advantage of the valuable experience gained in the Latvian and Estonian processes of developing the action plans.

### 4.3 LYNX

#### 4.3.1 ESTONIA

##### *Background Information*

As is indicated in the above section on the wolf, the ELCCMP presents as background information for the three large carnivore species a thorough overview of numbers and distribution, and biology. Additionally an extensive chapter is dedicated to the presentation of the ecological basis for control and protection.

Based on the review of the survey methods for assessing population size and distribution given in the plan, which reveals quite great contradictions in methods, **the present size of the Estonian lynx population is estimated at 600-900 individuals**, and considering that the hunting pressure of the last few years (~200 ind.) has risen above the sustainable share of 10-15%. In the case that Estonia becomes a member of the EU, the responsibility for protecting the lynx will be important, as the population may make up nearly 20% of the expected EU populations, by which, with other circumstances being equal, the lynx would deserve higher conservation status than the wolf.

##### **Lynxes and Humans**

The lynx-human relationship is seen mainly as it concerns the game/prey relationship, and the ELCCMP brings out the lynx-roe deer relationship particularly. Because the roe deer is a main game species in Estonia and is also the chief prey animal for the lynx, an understanding has spread amongst hunters that the lynx has caused a collapse in the roe deer population and hindered its recovery. An action item has been given to a study of this relationship, though it is not seen as a high priority as a preliminary analysis did not support the proposed relation.

##### **Threats, Limiting Factors, and Obstacles to Conservation**

In the ELAP, the most important threats to the lynx on the European scale are related with the lynx-human relationship, i.e. deterioration of habitat and prey base and direct human caused mortality, as well as negative human attitudes. Diseases, demographic and genetic factors are also cited, though there is little data about the extent of the threat.

As is described in the above section on the wolf, the ELCCMP presents the threats affecting the large carnivores collectively, and cites the main limiting factors as over-hunting and poaching, habitat

destruction, decrease in abundance of prey species, disturbance, damage from roads and artificial barriers, negative public opinion, cross-breeding, and spread of disease in population. For the lynx, only the threat of over-hunting can be seen as a big risk in the next 10-year period according to the plan, and the plan suggests the reduction of the hunting level to 10% of the official population estimate (from 12-17% from 1996-1999), which can be increased after close monitoring.

### **Conservation Status and Recent Conservation Measures**

The history of lynx populations in Estonia is very similar to that of the wolf, having had a relatively low population at the beginning of the 20<sup>th</sup> century, a high number following WWII, which was responded to by introduction of bounty hunting, proscription of the species, use of poisons, and hunting in brigades. This led to near extinction of the species until the use of poisons and hunting brigades were stopped.

The 1994 Law on Hunting Management and the 1996 confirmed List of Game has listed the lynx as a large game mammal, for which a license must be applied for in every case and for which a hunting season is issued. Large fines are charged (~1000 EUR) for illegal killing, and this is tripled for the taking of a pregnant female. Lynx is permitted to hunt by using the methods of decoy, stalking, chase, and with dogs during the season from 1 November to 28 February.

#### *Goals and Objectives*

The main objective for all three large carnivores given in the ELCCMP is their preservation as free-ranging species living in natural habitat. The specific objectives for Estonia is the maintenance of favourable status for these species, and goals specifically cited for the action plan of 2002-2011 are the following:

- The number and natural functions (prey, habitat, behaviour) of Estonian large carnivore populations are preserved as much as possible to maintain the viability and evolutionary potential of these populations;
- Damages caused by large carnivores to agriculture are kept optimally low, considering the population viability;
- The possibility to hunt large carnivores is preserved.

For the lynx in Estonia, it is necessary to maintain a population size of at least 500 individuals. Because even higher numbers have not caused important damages to agriculture, the reduction of numbers is not required, though regulated hunting is useful in keeping the animals human-shy. The present hunting potential for the lynx population is satisfactory.

#### *Actions Required to Meet Goals and Objectives on a European Level*

The European Lynx Action Plan (ELAP) stresses the importance of co-ordinated international conservation efforts, and foresees actions within the following categories: policy and species conservation (4.1), recovery of endangered or extinct populations (4.2), resource management (4.3), conflicts with humans (4.4), public awareness and involvement (4.5), and research and monitoring (4.6). All of these are relevant for the Estonian situation, with the exception of actions for the recovery of populations (4.2), and have been addressed, as elaborated below.

#### *Required Actions for Estonia*

The list of actions given in the ELAP under country-specific actions for Estonia can be considered comprehensive, and has been appropriately addressed in the national action plan. The table of actions for implementation of the ELCCMP is presented in the previous section on the wolf. Specific actions concerning the lynx are highlighted below:

- changing and improving of legislation – the proposal for changing legislation are based on the goal of better regulating the hunting of the lynx, not necessarily to have it included in the list of Estonian protected species.

- the national plan proposes to change the hunting season for lynx from 1 December to 29 February, to forbid the killing of female lynxes with kittens, and to instigate a national monitoring program and system for state level decision board on lynx management issues and quotas.
- developing infrastructure – this includes the placing of a country co-ordinator, expert advisory group, training for hunters and specialists, and improvement of functioning of system dealing with trade issues (trophies).
- Monitoring and information systems – improved systems are needed to be able to allow clear yearly quota setting from the state level, and regular review of population size, the conservation status and hunting effects. The Estonian plan foresees the further detailing of the census statistics, the development of a new monitoring method and conception, and registration of cases of rabies.
- Applied research – the Estonian plan points out that several aspects of large carnivore biology is poorly or averagely studied, and proposed to take up some more important studies with great practical value, including the following for the lynx:
  - assessing the error factor of official census through winter standardised track counts for lynx;
  - studies of demography and population growth potential;
  - habitat requirement studies;
  - evaluation of influence of traffic accidents on the populations;
  - estimation of lynx influence on roe deer population – as the roe deer as a main game species and main prey species for the lynx is a potential source of human-carnivore competition and conflict.
- Habitat protection – the making of an analysis of the expediency of large carnivore conservation areas, and the possible establishment of a large carnivore conservation area is proposed in the national plan.
- Control and rehabilitation – under which is foreseen regulated hunting and the removal of rabid animals for the lynx.
- Dealing with damage caused by large carnivores – entailing the setting up of a system for informing about damage, the registration and verification of damage, and the development of a compensation mechanism.
- Increasing awareness and shaping public attitudes – which is planned to be approached through the printing of folders, a TV series, popular version of the management plan, and the making of an internet site.

#### 4.3.2 LATVIA

##### *Background Information*

The “background information” contained in the European Lynx Action Plan (ELAP) corresponds to the main section, “Biological review” in the LLAP. A thorough species description is given in the LLAP, which corresponds to the background information given in chapter 2 of the ELAP, and includes the following chapters: appearance and body size; signs in nature; habitat; diet; reproduction; population structure; and natural enemies and competitors.

Part 2.2 of EWAP corresponds to part 2 (Population size and distribution) and part 2.5 to part 3 (Limiting factors) of the LWAP. The three main limiting factors are mentioned in the LWAP: hunting, diseases (rabies and mange) and hybridisation with dogs.

### **Threats, Limiting Factors, and Obstacles to Conservation**

Only two main limiting factors are elaborately described in the LLAP: hunting and habitat fragmentation. Currently, both factors acting together cause one main threat: the isolation at some extent between the western and eastern sub-population. Three zones, where hunting and habitat are of particular importance, are named in the chapter “3.2. Habitat fragmentation”. This opinion or conclusion is supported by distribution maps where occurrences of lynx are shown in 1998, 1999, 2000 and for the whole period 1995-2000 on average.

In the ELAP, more limiting factors are considered as threats, which is understandable because on the European scale they have really led to decline or extinction, however only the above threats are seen to put the Latvian lynx population at risk in the next 5-year period.

Negative human attitude was not mentioned as a separate threat in the LLAP because contrary to the wolf we did not feel it in non-hunting society concerning the lynx. The ongoing inquiry on human dimensions in Latvia will tell us the truth.

### **Conservation Status and Recent Conservation Measures**

The LLAP has a separate section named “Former Status” which describes the legal status of the lynx in Latvia and internationally.

In the last century the lynx has always been a game species and during some periods was hunted as a pest species without restriction. Since 1985 the closed season for hunting is between 16 March and 30 September.

#### *Goals and Objectives*

As in the case of the wolf action plan, “Goals and objectives” are not written as a separate section in LLAP but included into Introduction section and the Summary. This difference is explained by its different population status in Latvia. It has a viable population and has never been extinct, therefore the maintenance of the existing population and habitat conditions is the only goal at present. There is another grouping of tasks among titles “Objectives”, “Priorities”, “Broad policies”, “Actions” etc. in LLAP compared to ELAP but it makes a little impact on main goal of the document.

In the LLAP there is an annex with a joint project proposal on how to implement large carnivore action plans. The same concerns the recommendation about “a single body” that is responsible for all LC species (page 10, ELAP under title Common Themes). Instead of this we propose in LLAP a frame work of all relevant bodies but there is no clearness in pan-European point of view, who or what should be a central body at national level. So we can assume, there are no contradictions in general between action plans.

#### *Actions Required to Meet Goals and Objectives on a European Level*

One action from ELAP is not relevant for Latvia: “Recovery of endangered or extinct populations.”

As to the general **policy** in the chapter 4.1 of the ELAP, all actions are covered by LLAP. The corresponding chapter in LLAP named “Broad policy” is rather a vision of ideal lynx status for Latvia. Certain actions how to insure this status are listed under titles “Required legal status,” “Habitat protection and lynx protection within protected areas” and “Regulations for exploitation.” Writing this, we were confident that an overall harvesting ban of lynx in Latvia would worsen the species conservation status because (1) we can not foresee the reaction at population level of suddenly lacking mortality factor since the hunting on lynx was present for centuries, (2) we do not know whether the carrying capacity of Latvia can ensure survival of a growing population before a dispersal to adjacent areas would occur, (3) it could strengthen the still comparatively favourable public attitude to the species. As the ELAP accepts a careful harvest of lynx when the population can tolerate it, there are no contradictions between action plans.

As to the **resource management**, there is very little mentioned in the LLAP. The lacking resource (forest cover, prey animals etc.) in Latvia is far behind the direct persecution and we had the

opinion, that the isolation of eastern and western sub-populations is caused mainly by high hunting pressure. By limiting the killings of individuals, we could ensure a good animal exchange between both areas because deforestation is not a real obstacle in Latvia. The need to incorporate lynx predation in the hunting management we relate in the LLAP to the building of public awareness. Actually this might be a separate action rooted in scientific research and minimisation of conflicts with humans.

**Conflicts with humans** are more broadly considered in the ELAP than the LLAP. Depredation on livestock is not known in Latvia at all but we still have theoretically mentioned the need for a compensation system if damages would occur. Harvest of local population is suggested by LLAP as a main tool in the respect of competition to hunters. ELAP accepts it. In future, we could include an adapted management of the ungulate species (action 4.4.4. in ELAP) for Latvia too however it has been always taken into account in practice.

**Public awareness and involvement** in ELAP are prescribed taking into account the contrast between urban centres and rural regions. Although this contrast seems to be even more remarkable in Latvia compared with the so called West, our approach is more likely focused on hunters and non-hunters. Since the lynx is an almost complete forest dweller, it depends mainly on people who visit forest and make decisions on forest in Latvia. In the LLAP, three main target groups are mentioned: hunters, foresters (they are mostly hunters too) and students (relevant universities and high schools). We suppose that for those groups, touches with the forest are almost equal regardless of the address where they live. The on-going inquiry on human dimensions will give us an answer whether this opinion is right. Additionally, tourists and land owners might be of importance because we find it easy to lead a message to those groups (agencies, consulting centres, local news papers etc.).

One can conclude that the LLAP actions in building public awareness are less aimed at certain local authorities as it required by ELAP. We explain this with generally little experience in public education on environmental issues and suggest to start from national experts as executors of educational work.

Prescribing **research and monitoring** actions in the LLAP, some existing national preliminary studies, gaps and priorities in our knowledge were considered. Our main shortage compared with the ELAP is lacking a strategy for an internationally or at least regionally calibrated monitoring methods.

#### *Required Actions for Latvia*

The actions listed in the ELAP are reduced to eight points concerning Latvia. The point 4.1.1. is a formal legal background for any action and does not need further comments. The point 4.1.3. is fully covered by the LLAP. The point 4.3.2. is considered by the definition of certain areas where the harvesting of lynx should be lower or completely banned. The habitat protection is less relevant there because the forest cover is rather increasing in Latvia. Only old forest is decreasing but, on the other hand, human disturbance is even less in young forest stands, and ungulate density is also promoted by forest cutting if an area is maintained as recovering forest land or has been replanted. The point 4.4.5. is fully included in the LLAP. The point 4.5.1. is included in the LLAP and started with an issue of leaflet on lynx. The point 4.6.1. about applied research is included too, and a good base for co-ordinated approach might be the studies conducted by Guna Bagrade on lynx parasites and foraging in Latvia (master thesis at Latvian university) and corresponding research in Estonia. However, an overall calibration of methods might be a problem described above. The point 4.6.2. is included and developing in Latvia except for any co-ordination among countries. The Latvian-Estonian cross-border project is an evidence that this problem might be overstepped but joint funding seems to be a necessary precondition for that. The point 4.6.5. is closely related to point 4.6.1. and additionally might include certain co-operation with ungulate experts which is not mentioned in the LLAP but has been taken into account already in reality when applying for national research grants.

The main required actions for the conservation of the lynx in Latvia are proposed in the LLAP in the following areas:

- Broad policy – to maintain favourable conservation status, there is a need to: avoid further fragmentation of wooded land that is lynx habitat; avoid increase in area where lynx is not

present; foster a positive public attitude; maintain functions of the natural ecosystems; and to allow the continuation of controlled sport hunting;

- Required legal status – it is recommended that the closed hunting season be extended to the period from 1 April till 30 November, and further restrictions are placed on methods;
- Habitat protection and protection within protected areas – while no added measures are considered necessary for creating special lynx protection areas, the hunting of lynx within protected territories should be forbidden, especially in areas which are key in connecting the east and western populations;
- Regulations for exploitation – the hunting must be carefully controlled during the hunting season and using appropriate methods. Reporting of hunting and other deaths to lynx should be well accounted for;
- Minimisation of conflicts with humans – includes developing a reporting and compensation system for damages, especially when occurring in protected areas.
- International co-operation – to secure regional and European-wide co-operation and exchange of information regarding conservation efforts.

#### 4.3.3 LITHUANIA

The lynx has been on the list of species in the Red Book of the Lithuanian Republic since 2000, indicating its condition as an endangered and protected species under the 3<sup>rd</sup> category. Hunting was permitted during the period from 1965-1975, and since then has not been a hunted game species. The population has been estimated at around 100 individuals during the last 10 years, without a serious downward trend, but without notable increase either. Taking into consideration the status of the lynx, it is important to pay greater attention to the lynx through monitoring and research, and is highly important that a conservation plan be prepared and adopted.

### 4.4 BROWN BEAR

#### 4.4.1 ESTONIA

##### *Background Information*

As is mentioned in the previous sections, the ELCCMP gives a thorough presentation of the three large carnivores' distribution, numbers and biology. An ecological basis for control and protection are described in significant detail in chapter 2, where the maintenance of viable large carnivore populations and the relationship dynamics of large carnivores and other mammal species are discussed.

The brown bear population in Estonia is considered to be the most vulnerable of the three large carnivore species. The population is considered relatively isolated, especially if to consider the possible border fencing along the Russian-Estonian border. Migration over the Narva River in north-east Estonia is not considered very probable. It is likely that the small Latvian brown bear population is dependant on Estonia's. The population is presently stable but vulnerable and thus a decline in the numbers should be carefully avoided.

Based on the review of the survey methods for assessing population size and distribution given in the plan, and admitting that the brown bear is the most difficult of the large carnivores to count, and the discrepancy in the counting data, **the present size of the Estonian brown bear population is given to be 300-500 individuals.**

##### **Brown Bears and Humans**

The relationship is not specially discussed in the background section of the ELCCMP.

##### **Threats, Limiting Factors, and Obstacles to Conservation**

The threats to brown bears described in the ELCCMP are over-hunting, poaching, loss of habitat, disturbance, death by roads and artificial obstructions, and unfavourable public opinion.



Over-hunting and disturbance are considered the greatest threats for the brown bear in the next ten-year period. In the past years, quotas have been set for hunting between 4.4% and 6.7% of the officially counted population size, and while the plan suggests that the continuation of hunting – as long as it stays below natural population growth rate – is acceptable and is safe for the population, the hunting quota should be reduced to compensate for the error factor in the official numbers, and the effects of other negative factors which have notably decreased the natural population growth rate.

### **Conservation Status and Recent Conservation Measures**

The Brown Bear has not been a game species for a long time in Estonia. In the middle of the 20th century it was rare enough to warrant inclusion into the list of protected species in late 1958, where it remained until 1980. After the application of strict protection and practice of rehabilitation measures (i.e. the establishment of forage fields) the numbers increased and the bear became a common widespread species on the Estonian mainland. Damages to crops and bee hives appeared and in 1980 the bear was taken off the list of protected species and included to list of large game species.

The hunting of brown bear is permitted by the stalking method from 1 August to 30 September, and by stalking and dogs (except beagle) from 1-31 October on an individual permit basis. Additional conditions include a passing of a preliminary shooting test and the use of bullet (except full-mantle) with calibre not less than 6.5 mm and weight not less than 9 grams.

#### *Goals and Objectives*

The main objective for the three large carnivores given in the ELCCMP is their preservation as free-ranging species living in natural habitat. The specific objectives for Estonia is the maintenance of favourable status for these species, and the following goals have been specifically cited for the action plan during the period of 2001-2011:

- The number and natural functions (prey, habitat, behavior) of Estonian large carnivore populations are preserved as much as possible to maintain the viability and evolutionary potential of these populations;
- Damages caused by large carnivores to agriculture are kept optimally low, considering the population viability;
- The possibility to hunt large carnivores is preserved.

For the brown bear, the maintenance of a bear population at least 500 strong is considered necessary to achieve the above goals. Even though higher numbers (peak of 800) have not been seen to cause too many conflicts and damage to agriculture, hunting should be continued to keep the bears people shy. Other factors considering the hunting practice for bears will depend on further negotiations with the EU regarding the applied-for exemptions as well as the improvement of the presently low population growth trend.

#### *Actions Required to Meet Goals and Objectives on a European Level*

Of the actions that are required to meet the goal and objectives of the EBAP, the most relevant for Estonia are species conservation (4.1), stressing the need for the management plan on the national level; habitat protection (4.3); Public awareness, education and information (4.7); and research and monitoring (4.8). These are elaborated below.

#### *Required Actions for Estonia*

The list of required actions to meet the conservation goals for the bear by country in the EBAP only mentions 2 actions for Estonia – related to research and monitoring – which obviously is not sufficient.

According to the ELCCMP, the following actions are needed to meet the goal of maintaining a viable free-ranging population of the brown bear living in natural habitat in Estonia:

- changing and improving of legislation – the proposal for changing legislation are based on the goal of better regulating the hunting of the large carnivores, not necessarily to have them included on the list of Estonian protected species.

- For the bear, it is proposed to change the hunting season to the period of 15 August to 15 October, and to forbid hunting with dogs and chase-hunting, and to forbid the killing of female bears that are with cubs and same-year cubs.
- The plan proposes to increase the fine for illegal killing of bear
- developing infrastructure – this includes the placing of a country co-ordinator, expert advisory group, training for hunters and specialists, and improvement of functioning of system dealing with trade issues.
- Monitoring and information systems – improved systems are needed to be able to allow clear quota setting, and regular review of population size, the conservation status and hunting effects. The Estonian plan foresees the further detailing of the census statistics, the development of a new monitoring method and concept, and the establishing of a bear wintering-site registration system.
- Applied research – the Estonian plan points out that several aspects of large carnivore biology is poorly or averagely studied, and proposed to take up some more important studies with great practical value, including the following:
  - error estimation of the official census using telemetric studies or genetic mark-recapture studies of bear (the latter is now being done at Tartu University);
  - studies of demography and population growth potential
  - habitat requirement studies
  - evaluation of disturbance effect on wintering bear population;
  - sociological study about bear – a study of public opinion, like done concerning the wolf in Estonia, should be made, as the bear is perhaps of greater conservation concern.
- Habitat protection – under which is planned the seasonal protection of bear wintering sites (from hunting and logging), the conservation of traditional bear wintering sites, the making of an analysis of the expediency of large carnivore conservation areas, and the possible establishment of a large carnivore conservation area.
- Control and rehabilitation – under which is foreseen regulated hunting, the rehabilitation of abandoned bear cubs, and the additional feeding of bears.
- Dealing with damage caused by large carnivores – which entails the setting up of a system for informing about damage, the registration and verification of damage, and the development of a compensation mechanism.
- Increasing awareness and shaping public attitudes – which is planned to be approached through the printing of folders, a TV series, popular version of the management plan, and the making of an internet site.

#### 4.4.2 LATVIA

As indicated in section 3.2, while in the planning process for preparing species management plans in Latvia, a review was conducted which resulted in the decision not to include an action plan for the brown bear. The bear is a fully protected species with very limited distribution in Latvia, likely depending on the Estonian population. Research activities and monitoring should regularly be carried out, and the situation carefully observed. In the future, the preparation of an action plan for the bear in Latvia may be important.

#### 4.4.3 LITHUANIA

The brown bear has only been recorded as an occasional visitor in Lithuania, and therefore no action plan has been prepared or is foreseen.

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## 5. ACTION PLAN FOR THE BALTIC LARGE CARNIVORE INITIATIVE

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## 5.1 LFA MATRIX

## ACTION PLAN FOR THE BALTIC LARGE CARNIVORE INITIATIVE (BLCI) FOR THE PERIOD 2001-2005

Objective	Actions	Means of Verification	Time	Status/ comments
1 Large carnivore conservation / management is an integral part of the Baltic countries accession process to the EU	<u>1.1 Action:</u> Ensure the application of the Habitats Directive (+ other environmental legislation) takes into account the particular needs of the region (hunting, etc.)	Admittance to the EU with the proposed exemptions and action plans for LC conservation	By EU accession date (2004 ?)	Consultations with CoE and EC regarding the conditions and needs of BSs for LC conservation have been held
	<u>1.2 Action:</u> Ensure that the national action plans receive formal legal status	Plans approved by governments of each of the BSs	Before accession	Lithuania has not yet started to elaborate LC action plans
2 Reliable methods are being used to obtain robust data that will reduce data conflicts and improve the scientific basis for LC management	<u>2.1 Action:</u> Prepare an overview of all ongoing scientific activities in each of the BSs, to be reviewed and updated once per year by the BLCI	List of scientific activities, projects, studies, updated once per year	1 Nov 01	List should be available mainly on the BLCI web-site
	<u>2.2 Action:</u> Prepare a list of published articles on LCs	List available on internet site	April 02	
	<u>2.3 Action:</u> Organise regular meetings for BLCI including information exchange	Minutes from meetings		2 meetings suggested for BLCI core group, 1 of which could be for broader audience

Objective	Actions	Means of Verification	Time	Status/ comments
	<u>2.4 Action:</u> Develop practical and co-ordinated monitoring system ensuring linkage between monitoring and quota setting	Report of monitoring methodology	2005	Updates should be given annually at meetings
	<u>2.5 Action:</u> Develop fundable projects which link policy and fieldwork, to include: Telemetry-based studies on space use and predation; Methodology to improve data on conflicts with livestock and dogs Continuation of cross-border movement studies	Comprehensive research project proposal prepared	Dec. 2001	John Linnell, with ZA, HV, LB preparing joint proposal for needed research activities  Draft to be discussed at LCIE meeting in Poland in Oct. '01  Cross-border project involving Border Guards to monitor movement started in 1999
3 Hunting legislation, training and education meet LC conservation requirements	<u>3.1 Action:</u> Reform hunting legislation	Hunting laws in BS are in accordance with LC conservation action plans	By end of 2002	Est & Lat – draft laws prepared Amending of Hunting Regulations in Latvia is currently in process; a closed season for wolf hunting will likely be approved, however it will be at best a compromise solution between hunters and conservationists, and at least at first step it will not coincide with all demands of action plan. Lith – law changed in 1996 banning wolf hunt bet '01 Apr. and '01 July.
	<u>3.2 Action:</u> Revise ecological section of hunting exam (enlarge and make it more comprehensive)	Chapter on LC biology, conservation and management in examination requirements	2003	Est - Hunting organisations have been well represented in LC action plan working group Lat – graduation from obligatory hunters' school before passing hunters' exam is proposed by a new amendment to hunting legislation

ACTION PLAN FOR BALTIC LARGE CARNIVORE INITIATIVE, 2001-2005

Objective	Actions	Means of Verification	Time	Status/ comments
	<u>3.3 Action:</u> Produce LC education materials for hunters and other groups of society	Informational materials are produced and distributed to hunters via hunters magazines, general media, meetings, internet, etc.	ongoing	Est – popular version of action plan to be distributed in autumn '01 Lat – national hunters' magazine, distribution of leaflets, national web-site in Internet, discussion articles in news papers (both opinions)
4 Ensure long term funding for LC conservation issues in the Baltics	<u>4.1 Action:</u> Develop a common strategy for fundraising	BLCI report including work plan and funding priorities	July 2001	CoE report on status of LC protection and action plan to be basis for activity and fundraising in future
	<u>4.2 Action:</u> Develop BLCI brochure and other information resources: slides, audiotapes, video, printed materials etc., to be used in awareness- and fundraising efforts	Ready-made resources for distribution on website, use in articles, etc.	Brochure 2003 Ongoing	Proceedings from HD symposium available LCIE website to include BLCI information, regularly updated by BLCI co-ordinator
	<u>4.3 Action:</u> Propose mechanism to safeguard project funding	?	?	A fund manager for the BLCI would be needed
5 The majority within each interest group is positive towards the maintenance of LCs at favourable conservation status	<u>5.1 Action:</u> Compile baseline study of existing attitudes in the region	Reports of attitudes of LC in all three Baltic countries published	March 2002	Est & Lith – first HD studies completed and published in Lith HD symposium proceedings of Apr. '01 showing generally positive attitudes  - HD proceedings will be published on LCIE website by July '01  Lat – HD study to be completed by March '02
	<u>5.2 Action:</u> Design targeted education / communication campaign	Public awareness/ comm. strategy component included in report	July '02	Est. – popular version of management plan for stakeholders and broad public will be ready in Sept. '01. Lat. – leaflets on wolf and lynx have been prepared (2000)
	5.2.1 make available material for public awareness raising work	Materials compiled and available for communication work, incl. LCIE species information adapted for the BSs.	Oct. '01	Est & Lat – wolf poster published Lith.- presentation by RV at HD symposium in Apr. '01; very little information exists

Objective	Actions	Means of Verification	Time	Status/ comments
	5.2.2 co-ordinate materials and inform people through existing channels and means, i.e. presentations, articles, lectures, internet, etc.	List of publications and activities ongoing or completed in each of the BSs, to be updated once per year	2001-2005	- news stories can be published on LCIE website  - scientific article produced by HO, ZA, & JO by Dec. '01
	5.2.3 publish news stories from the region on web page	BLCI site established under the LCIE website with news from BSs	Oct. '01	- news and information can now be sent to LCIE webmaster for posting
	<u>5.3 Action:</u> Keep lines of communication and information flow open with various interest groups	Main stakeholder contact network with key persons in place and they are receiving information regularly	2001-2005	Lists of key contact points in BS within stakeholder groups have been prepared by May '01
	<u>5.4 Action:</u> Develop training + capacity building aspects on human dimensions (HD)	HD training manual completed and distributed to key persons and institutions in the BS	2001	HD manual has been completed by AB HD manual will be published on LCIE website by July '01  HD manual disseminated to relevant contacts at Baltic universities and institutions
6 Develop guidelines to ensure that the exploitation of forest resources is compatible with LC conservation	<u>6.1 Action:</u> Develop guidelines to reduce disturbance to denning bears	Guidelines are developed to be included in national action plans and legislation	2003	Est & Lat – materials and guidelines have been included in the draft management plans Lat- No bear management plan for Latvia! Might be a point of local management plans for specially protected areas. Solution might be found conducting the Danish EMERALD project, in frame of that we are doing inventory of protected areas.

ACTION PLAN FOR BALTIC LARGE CARNIVORE INITIATIVE, 2001-2005

Objective	Actions	Means of Verification	Time	Status/ comments
	<p><u>6.2 Action:</u> Manage the exploitation of ungulates and beaver so that an adequate prey base is secured</p>	<p>Viable populations of prey species exist to support LCs and people</p>	<p>2001-2005</p>	<p>Lat – financial background is of importance because the hunters pay the same rent to government for carnivores holding hunting area than for carnivores free area.</p>
	<p>6.2.1 Coordinate with LHI and prey biologists</p>	<p>Network in place and communication working</p>	<p>Dec. 2001</p>	<p>Network of contacts in prey biology has been identified</p>
	<p><u>6.3 Action:</u> Investigate the availability of mast foods for LCs in the face of changing land use</p>	<p>Research conducted and scientific articles about the results prepared</p>	<p>2001-2005</p>	<p>Est – HV and students will begin food study of bear in '01; lynx studies have been carried out. Lat – a small research project is started at the Forest Research Institute “Silava” in 2001 under title “Study of interactions between wildlife and game management at the consumer level of forest ecosystems”</p>

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## 6. CONCLUSIONS

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When considering the protection and management of large carnivores on a European scale, the Baltic States play a crucial role. In contrast to other European countries where large carnivore conservation has much to do with re-introduction of species in selected suitable areas, and involve great efforts to shape a favourable public opinion, the Baltic States have healthy populations throughout their territories which have co-existed with man throughout history. Suitable natural habitats for these key indicators of intact natural ecosystems are an important value that the Baltic States bring to the European Union.

The European Action Plans for the Wolf, Lynx and Brown Bear by the Large Carnivore Initiative for Europe (LCIE) has laid an important framework which has been made available to the Baltic States in developing management plans for their particular countries and situations. This report has attempted to examine the extent to which the national action plans have met the recommendations set out more broadly in the European Action Plans.

Latvia and Estonia, within the national process of approximation to EU requirements, have made significant progress in bringing their large carnivore conservation and management to a level that should help to ensure the long-term sustainability of these species by developing action plans for the conservation and management. Lithuania, despite not having yet prepared action plans, has taken needed steps to ensure viability of the populations.. For the species which are not importantly endangered at present, it has been important to review the management principles and practices in lieu of the present situation in a rapidly changing social and economic context. In all three Baltic countries, it is clear that controlled hunting of the wolf is part of the best conservation strategy.

Latvian specialists have prepared action plans for the wolf and lynx which correspond to the main goals and principles set out for the larger European region by the LCIE. It will be important that the government makes a commitment to implement the action plans and support the process.

Estonia has also completed the process of preparing a comprehensive control and management plan, aimed to secure the wolf, lynx and brown bear as free-ranging species in natural habitat in Estonia for the next 10-year period. This plan needs to be placed within a clearer legislative framework which will provide the means and measures for the plan to be implemented.

Lithuania has a strong and important wolf population and an endangered lynx population which are of high regional and European importance, but for which action plans have not been made. During the last two years, Lithuania has made great steps in the preparation process for joining the EU in the field of nature conservation, and it is important that in work of the near future a protection and management plan be developed. With the available experience in the two other Baltic states, there should be a good groundwork from which to proceed.

The national action plans are a critical part of the process that can help to achieve the goals that have been set out at the European scale. But as the populations of large carnivores are dependent on very large territories, supporting the regional and population approach to protection is clearly key. Monitoring of the populations in the region based on a co-operative approach and good information exchange among scientists, experts and officials will be important in order to secure effective protection.

The Baltic Large Carnivore Initiative (BLCI) has begun as a crucial network of scientists, conservationists, state officials and other stakeholder representatives from the Baltic States (and other experts from Europe and N. America), which provides the necessary framework for information exchange and for approaching large carnivore research management issues from the population and regional level. As the nature of the large carnivores requires a transnational approach to management, all efforts should be encouraged to strengthen the co-operation and the network. The regional approach can than be more clearly fit into the larger continental perspective that is being condoned by the LCIE.



The Baltic Large Carnivore Initiative is the proper forum within which to exchange information, plan and implement joint activities, and develop strategies for regional conservation efforts, and the action plan should be used in order to focus the activities and aid in developing the structure.

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## ANNEXES

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1. MANAGEMENT PLAN FOR THE CONTROL AND CONSERVATION OF ESTONIAN LARGE CARNIVORES
2. ACTION PLAN FOR THE CONSERVATION OF THE EURASIAN LYNX IN LATVIA
3. ACTION PLAN FOR THE CONSERVATION OF WOLF IN LATVIA