



BEAR NECESSITIES

**AN ANALYSIS OF BROWN BEAR
MANAGEMENT AND TRADE
IN SELECTED RANGE STATES AND
THE EUROPEAN UNION'S ROLE
IN THE TROPHY TRADE**

AMELIE KNAPP

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Brown Bear *Ursus arctos*. Photograph credit: Mikhail Krechmar.

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An analysis of Brown Bear management and trade in selected range States and the European Union's role in the trophy trade.

By Amelie Knapp



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CONTENTS

Acknowledgements	2
Abbreviations and Terminology	3
Executive Summary	4
Introduction	7
Scope and objectives	7
Background information	7
Species description	7
Status, distribution and abundance	8
Main threats to Brown Bears	11
Brown Bear management	11
Brown Bears and trophy hunting	12
Other uses of Brown Bears	12
National and international conventions and regulations	12
Methodology	16
Data sources	16
Trade data analysis	16
Literature search	17
Results	18
Review of international trade in Brown Bears	18
Global trade in Brown Bear trophies	18
EU trade in Brown Bear trophies	21
Brown Bear management and trade in selected range States	25
Bulgaria	25
Canada (British Columbia)	27
Croatia	33
Estonia	36
Romania	38
Russian Federation	42
Slovakia	45
Slovenia	47
USA	51
Summary and review of results	56
Measures of Brown Bear management in the selected range States	56
SRG opinions and decisions	59
Conclusions	60
Recommendations	62
References	64
Annex 1: Full references for <i>in litt.</i> and pers. comm. references	69
Annex 2: All countries that have exported to the EU25 and number of trophy items	70
Annex 3: Brown Bear status in Range States which have had an SRG Opinion	71
Annex 4: Brown Bear management in Range States which have had an SRG Opinion	72
Annex 5: Past SRG Opinions and the basis for each opinion as well as any consequences	74

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ABBREVIATIONS AND TERMINOLOGY

Bear population – a bear population consists of the bears in an area that are genetically isolated, totally or substantially, from other bear populations. A population may consist of several subpopulations (Swenson *et al.*, 2000).

EU – abbreviation for European Union, which is an intergovernmental and supranational union of 25 European countries (see EU25 for list of countries), known as Member States.

EU15 – the 15 “old” European Union Member States (Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden, United Kingdom) which were part of the European Union before the accession of the 10 new Member States in May 2004.

EU25 – the 25 European Union Member States (Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden, United Kingdom).

IBA – International Association for Bear Research and Management.

IUCN/SSC – The Species Survival Commission of IUCN – The World Conservation Union.

LCIE – Large Carnivore Initiative for Europe

Lower 48 States – because management of Brown Bears differs between Alaska and the rest of the USA, the expression ‘lower 48 States’ is used to refer to the part of the USA south of Canada. Within the lower 48 States, Brown Bears occur in only four States: Idaho, Montana, Washington and Wyoming.

(Re-)exports – in the context of CITES trade data, (re-)exports refer to direct exports from the country of origin plus re-exports of specimens originating from another country.

SRG – the Scientific Review Group of the European Union consists of representatives of each EU Member State Scientific Authority and is chaired by a representative of the European Commission. The SRG examines all scientific questions related to the application of the EU Wildlife Trade Regulations.

Trophy item – unless specified otherwise, the expression ‘trophy item’ in the context of trade analysis includes the CITES Trade Database Terms bodies, skins, skulls and trophies and refers only to *Ursus arctos* (and *U. arctos* subspecies) trophy items.

EXECUTIVE SUMMARY

With a distribution spanning North America, Europe and Asia, the Brown Bear is the most wide-ranging bear species. The global population is estimated at around 180 000 Brown Bears, of which 58 000 are in North America and the rest in Eurasia. However, the current population size and global distribution only represent a small fraction of what they were a few hundred years ago. In almost half of the Brown Bear's 49 range States, the populations are thought to be declining and human-induced mortality, mainly through hunting, is one of the main causes of these declines. The Brown Bear is both a popular and a valuable trophy hunting species, attracting trophy hunters from across the world. It is one of the most popular species for European hunters, and the European Union is one of the largest importers of Brown Bear trophies. Another important source of mortality for Brown Bears is poaching for trade in body parts such as gall bladders, for use in traditional East Asian medicines.

In order to protect Brown Bears from negative impacts on their populations caused by international trade, whether this be trade in trophies, in parts and derivatives for medicinal purposes, or for other reasons, this species is listed in the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). The first populations were listed in 1975 and since 1992, all Brown Bear populations are included in either Appendix I (highest degree of protection) or Appendix II. In the EU, all Brown Bear populations are listed in Annex A of the European Union *Council Regulation (EC) No. 338/97*, that implements CITES in the 25 European Union (EU) Member States.

As well as regulating international trade in Brown Bears, the EU Wildlife Trade Regulations give the European Commission the possibility, based on the outcome of its consultation with the Member States, to suspend imports into the EU of certain species from particular countries, if the EU Member States are unable to advise that "the introduction into the Community would not have a harmful effect on the conservation status of species or on the extent of the territory occupied by the relevant population of the species". The wildlife trade Scientific Review Group (SRG) of the EU may give a Positive or Negative Opinion to a species/country combination after reviewing that country's trade in, and management of, a species. A Negative Opinion results in an immediate halt of issuance by all EU Member States of import permits for that species/country combination.

For trophies, the SRG currently has issued a Negative Opinion for British Columbia (Canada) and, until October 2005, also had a Negative Opinion for Romania. In the past, the SRG has also issued Positive or Negative Opinions for seven other range States: Bulgaria, Croatia, Estonia, the Russian Federation, Slovakia, Slovenia and the USA.

Using CITES trade data for 1975-2003, this report analyses the international trade in Brown Bear trophies and the role the EU plays in this trade. A detailed trade analysis was conducted for the nine range States for which SRG Opinions have been issued (listed above). The report also presents information on the status and distribution of Brown Bears in these nine range States, threats to the species and management and conservation measures. In addition, the basis for the SRG Opinions is reviewed and assessed in order to determine whether these EU decisions have influenced the status or management of Brown Bears in those countries.

A total of 14 067 Brown Bear trophy items (bodies, skins, skulls and trophies) were reported in international trade between 1975 and 2003. During this period, Canada was the largest (re-)exporter of Brown Bear trophy items, followed by the Russian Federation and the USA, which together accounted for 85% of global (re-)exports. The 25 EU Member States were the second largest importers of trophy items after the USA. Imports of trophies by the 15 "old" Member States were much larger than those by the 10 new Member States but the reverse was observed in the case of trophy exports.

Between 1997 and 2005, the SRG has given five range States a Positive Opinion and four range States both Positive and Negative Opinions at different points in time. For most range States reviewed, the exported trophies accounted for only a small fraction of annual national bear harvest. Where the SRG has given a Negative Opinion, the basis for the Opinion is mostly related to concerns about the effectiveness of the management measures in place in the country of origin to ensure that the levels of harvest and export are not detrimental. In some instances, the SRG's Negative Opinions have had positive outcomes, for example, they may have catalysed the development of a Brown Bear management plan in Croatia and Romania. However, sufficient implementation of recommended management measures is also important and the SRG has maintained Negative Opinions for British Columbia and, until recently, for Romania, because it did not consider such implementation of their management strategies to be sufficient.

Given the differences in management measures and in the amount and detail of information available on Brown Bear status in various range States, it is very difficult to compare the situation in two countries. However, the amount and quality of data available on bears in one country provide an indication of the quality of management within the country. In cases where the SRG receives conflicting information on the status of a population or management in a range State, the opinion of an independent body such as the Bear Specialist Group of the IUCN-World Conservation Union's Species Survival Commission (IUCN/SSC Bear Specialist Group) or the International Bear Association (IBA) may be useful.

Of the nine countries reviewed, all had a national Brown Bear management plan apart from Bulgaria, the Russian Federation and Slovakia. The methodology used to estimate the population size of Brown Bears varied in each range State. In Estonia, the population estimate is based on harvest statistics, whereas in Croatia, Romania, Slovenia and Slovakia, the official population estimates are based on the sum of Brown Bear hunters' estimates in different hunting units. In British Columbia and in the USA, on the other hand, other methods are used such as expert opinion supplemented by multiple regression methods and mark-recapture and radio-tracking. The official population estimates in British Columbia, Romania, Slovakia and Slovenia have been criticised by national scientists and/or international conservation non-governmental organisations (NGOs) as being inaccurate or overestimates of the actual population size.

Currently, the age and sex of harvested bears is monitored in British Columbia, Croatia, Romania, Slovenia and the USA and many of the range States reviewed have also adopted measures aimed at preventing the disproportionate taking of certain age/sex categories in the population. In Slovakia and Slovenia, there are measures in place to reduce the number of large bears harvested. In Romania females and their young may not be killed and in British Columbia, there is a sub-quota setting the maximum female mortality to 30% of the total human-caused mortality for the population.

Based on the range States reviewed, in Europe Brown Bears appear to be managed at the country level, with little evidence of management at the population level, or of cross-border collaboration between range States that share populations. In British Columbia and in the lower 48 United States on the other hand, Brown Bear management is conducted at the population level.

Recommendations to the Scientific Review Group (SRG) and EU Member States

- The SRG should decide on the minimum set of population and management data needed in order to review a case to form an Opinion. The SRG should encourage range States to provide the most recent and scientific data available so that the SRG can make a justified judgement based on the amount and objectivity of the scientific data provided and on their analysis.
- The SRG should seek the opinion of expert groups, such as the IUCN/SSC Bear Specialist Group or the International Bear Association in cases where the SRG receives conflicting reports regarding the status or management of bear populations in a certain country.

- The SRG should provide more detailed information about the basis of, and the reasons behind, any Positive or Negative Opinion given and should provide range States with detailed guidelines on what type of information it requires to review any existing Opinion.
- Where appropriate, the SRG and EU Member States should explore the feasibility of providing financial and/or technical assistance to range States to assist them with data collection for population estimates, writing management plans and devising measures for sustainable management of bears.

Recommendations to range States

- Bulgaria, the Russian Federation and Slovakia should produce a management plan for Brown Bears, following the guidelines set out in the *Action Plan for the Conservation of the Brown Bear (Ursus arctos) in Europe*.
- When drawing up a management plan for transboundary Brown Bear populations, range States should consult with neighbouring countries with which they share a Brown Bear population.
- Range States should calculate their annual hunting levels based on sound biological data and the hunt should be flexible and vary as the population size varies. In order to establish sustainable hunting rates for their populations, range States should factor in accidental deaths, unknown unreported deaths and those due to poaching, and adjust their quotas annually based on census and mortality information.
- Range States should ensure that the bear harvest does not affect the population structure. To this effect, hunting quotas should be set for different age/sex classes of bears, based on the monitoring not only of the number of bears killed each year (legally, illegally and accidentally) but also of the sex and age of the bears.
- Range States should develop compensation schemes for bear damage, if they do not currently have these.
- Range States should only permit hunting of Brown Bear populations that are documented to be viable and where management measures are in place stating the population size targets and how hunting will be used to reach these targets.
- Range States and the wider scientific community should investigate the presence and status of the Brown Bear in Bhutan and Mexico, where Brown Bear presence is currently uncertain.

Recommendations to Non-Governmental Organisations and other institutions

- National and international Non-Governmental Organisations and institutions concerned with the status, management, use and trade of Brown Bears, as well as other relevant stakeholders, should assist range States in improving Brown Bear management with their expertise and experience, and where possible, with funding.

INTRODUCTION

Scope and objectives

Brown Bears *Ursus arctos* are a high profile conservation priority. They are popular animals for hunters and at the global level, the European Union (EU) plays an important role in the trade of Brown Bear trophies, mainly as an importer. The accession of the ten new Member States in 2004 brought in more Brown Bear range States and increased the EU's role as an exporter of Brown Bear trophies.

In the EU, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is jointly implemented by all 25 EU Member States through *Council Regulation (EC) No. 338/97* and related Commission Regulations. *Council Regulation (EC) 338/97* aims to ensure that imports of species listed in the Annexes do not have a harmful effect on the conservation status of the species and this Regulation provides the European Commission with the possibility of suspending imports into the EU with regard to certain species and countries, if the EU Member States are concerned that trade is having a negative impact on wild populations. Such decisions may be triggered by concerns raised by one or more Member States or by the wildlife trade Scientific Review Group (SRG) of the EU with regard to the conservation impact of the trade, following an assessment of compliance with the relevant requirements contained in *Council Regulation (EC) 338/97*. The SRG can issue a Positive or a Negative Opinion for imports of a certain species from a range State. When this Opinion is Negative, EU Member States must immediately stop issuing import permits for that species/country combination, resulting in a cessation of imports until the Negative Opinion is removed. Since 1997, the European Commission, based on Member States' views, has adopted a Positive or a Negative Opinion for Brown Bears from nine range States based on the assessment of the SRG.

The aim of this report is to review the situation for Brown Bears in each of these nine range States, focusing on the status of the species in the country, the threats faced, the levels of trophy trade and the management and conservation measures in place. In addition, the basis for the SRG decisions are reviewed and an assessment of the SRG's Opinions is made. The report also examines the trade in Brown Bear trophies world-wide, with a particular focus on the role of the EU.

Trophy hunting is a practice that generates enormous controversy and it is not the purpose of this report to explore this controversy. It is also not the purpose of this report to provide a comprehensive assessment of the status of Brown Bears, although as much up-to-date information as possible is included.

Background information

Species description

Bears are the largest land carnivores (Anon., 2005b). Brown Bears are members of the mammalian order Carnivora, family Ursidae (Herrero, 1999) and are one of eight species of bear in the world (International Association for Bear Research and Management, 1999). Brown Bears are called Grizzly Bears throughout the lower 48 States of the United States and the interior (non-coastal) regions of Alaska and Canada. However, for simplicity, the term Brown Bear will be used throughout the report.

Brown Bears are omnivorous, with a diet consisting largely of vegetation although invertebrates, fish, and mammals are also frequently eaten. Foods include berries, green vegetation, hard mast and meat, obtained either as prey, as carcasses or as baits (Swenson *et al.*, 2000). The distribution and abundance of food, in particular high energy foods, affects the size of a bear's home range. Home ranges are typically very large and a large area is needed to maintain viable populations (Herrero, 1999). The weight of an individual varies substantially with time of year and area of distribution with adult males usually weighing 135 to 390 kg and females weighing 95 to 205 kg (International Association for Bear Research and Management, 1999).

Brown Bears have a long life span, late sexual maturity, protracted reproductive cycles (Anon., 2005b) and a low reproductive rate (Servheen, 2001). In the wild, Brown Bears can live for 20 to 30 years, although most die in their first few years of life (Wilson & Ruff, 1999). Brown Bears are polygamous and mating occurs around mid-May to early July. The effective gestation period is six to eight weeks and females give birth to between one and four small (0.5 kg) helpless cubs in their den in January-February. In general, some Brown Bears in Europe have a higher reproductive rate than those in North America. In late autumn, bears start hibernating for three to seven months although in southern countries some bears might be active all year. Brown Bears exhibit male-biased dispersal, whilst females tend to establish their home ranges in or near their mothers' home range (Swenson *et al.*, 2000).

Status, distribution and abundance

As with many species, the taxonomy of Brown Bears differs depending on the source consulted. The IUCN/SSC Bears Status Survey and Conservation Action Plan (Servheen *et al.*, 1999) mentions five subspecies of *Ursus arctos*: *U. a. arctos*, *U. a. horribilis*, *U. a. isabellinus*, *U. a. middendorffi* and *U. a. pruinosus*. *Ursus arctos nelsoni*, which occurred in Mexico and the USA, is considered to be extinct since the 1980s. *Ursus arctos* is classified as *Lower risk/least concern* in the 2004 IUCN Red List of Threatened Species (IUCN, 2004).

Brown Bears occupy the widest range of habitats of any bear species (including dense forests, subalpine mountain areas and tundra), and are widespread throughout the Northern Hemisphere, occurring in Asia, Europe and North America (Servheen, 2001). The species is found in 49 range States (Servheen *et al.*, 1999; UNEP-WCMC, 2005) (see **Table 1**). The Brown Bear is the only bear species in Europe although they have virtually disappeared from central and western Europe. Their present geographical distribution in Europe is shown in **Figure 1**.

Table 1

Brown Bear range States

Afghanistan	Greece	Poland
Albania	Hungary ¹	Romania
Armenia ¹	India	Russian Federation
Azerbaijan	Iraq	Serbia and Montenegro
Austria ²	Iran (Islamic Republic of)	Slovakia
Belarus	Italy	Slovenia
Bhutan ¹	Japan	Spain
Bosnia and Herzegovina	Kazakhstan	Sweden
Bulgaria	Korea (DPR) ¹	Syrian Arab Republic
Canada	Kyrgyzstan	Tajikistan
China	Latvia	Turkey
Croatia	Macedonia (FYR)	Turkmenistan
Czech Republic	Mexico ¹	Ukraine
Estonia	Mongolia	USA
Finland	Nepal ¹	Uzbekistan
France	Norway	
Georgia	Pakistan	

Source: Servheen *et al.*, (1999), UNEP-WCMC (2005a).

Mexico and Bhutan are both listed as range States by UNEP-WCMC, and CITES Parties listed the Brown Bear populations in these range States on Appendix I in 1990. However, according to the Bear Specialist Group of the IUCN-World Conservation Union's Species Survival Commission (IUCN/SSC Bear Specialist Group)'s recent reassessment of the Brown Bear, this species is now extinct in Mexico and in Bhutan its native presence is possible but not confirmed (IUCN/SSC Bear Specialist Group, *in litt.*, 2005).

¹ These are considered range States by UNEP-WCMC (2005a) but not by Servheen *et al.* (1999).

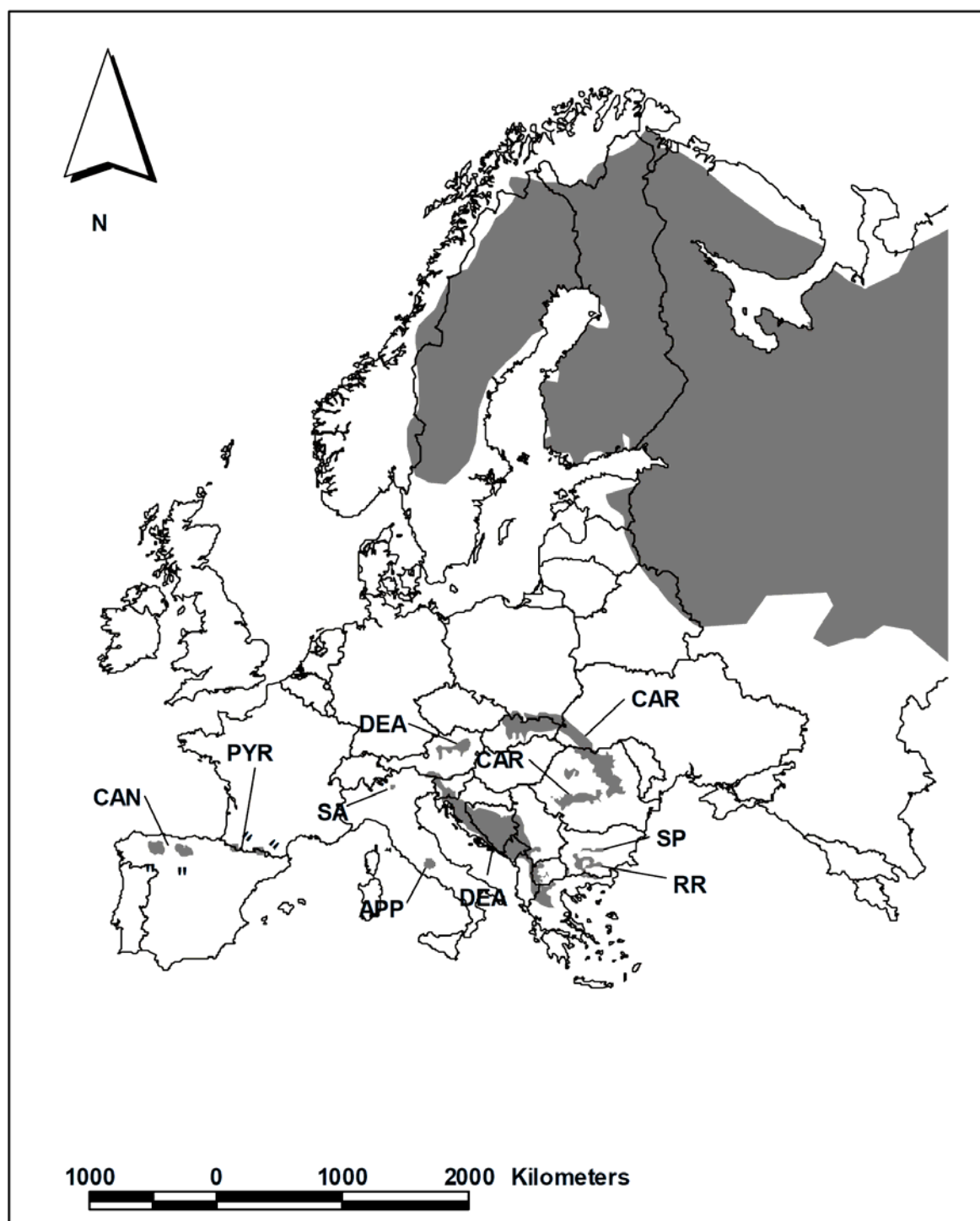
² Austria is considered to be a range State by Servheen *et al.* (1999) but UNEP-WCMC (2005a) considers the Brown Bear to be extinct here.

Servheen (2001) sets the global population estimate at around 180 000 Brown Bears, of which 58 000 are in North America and the rest in Eurasia. Of a total of 44 Brown Bear range States³, the IUCN/SSC Bear Specialist Group classified 12 as having (or possibly having) stable or increasing populations and 20 as having (or possibly having) either small, very small, decreasing, fragmented, threatened or endangered populations. For 12 range States the status was unknown (Servheen, 1999). Brown Bear populations at greatest risk include those in Italy, France, Spain, Mongolia and Tibet (Servheen *et al.*, 1999).

³ Of the 49 range States listed in Table 1, which include those included by the IUCN/SSC Bear Specialist Group (1999) and by UNEP-WCMC (2005a), 43 are considered to be Brown Bear range States by IUCN/SSC. IUCN/SSC splits the Russian Federation into European Russia and Central/eastern Russia, resulting in 44 'range States'.

Figure 1

Overview of distribution of Brown Bears in Europe c. 1999. Some of the smaller populations are labelled on the map as follows: CAN = Cantabrian populations (western and eastern), PYR = Pyrenees populations (western and central), SA = Southern Alps, APP = Appennines, DEA = Dinaric-Eastern-Alps, CAR = Carpathians, RR = Rila-Rhodope Mountains, SP = Stara Planina Mountains.



Source: Linnell *et al.* (2002).

Main threats to Brown Bears

Currently, most Brown Bear mortality is human-caused (Swenson *et al.*, 2000). The three major factors driving the decline or loss of bear populations are human-induced mortality, habitat loss and habitat fragmentation (Herrero, 1999). Hunting, poaching, and road traffic-caused deaths seem to be increasing as a result of increased numbers of human-bear interactions (Swenson *et al.*, 2000).

Brown Bears need large continuous areas of habitat with a sufficient availability of preferred foods and escape cover (Swenson *et al.*, 2000). Brown Bears once occupied most of Europe and about half of North America but over the past 200 years, the Brown Bear's range has contracted massively in these continents and bears now have to cope with fragmented and human-dominated landscapes (Swenson *et al.*, 2000).

Bears are known to take domestic livestock, especially sheep and goats, but also, to a lesser extent, cattle and horses. Bears can also cause damage to orchards and to oats in some areas. Bears rarely attack and kill humans and these attacks rarely appear to be predatory behaviour, but more often the bear defending itself, its cubs or a carcass against humans (Swenson *et al.*, 2000).

Poaching - the illegal killing of bears - occurs for several reasons; because the bears are perceived as a threat to life or property, for trophies, or for economic reasons (Swenson *et al.*, 2000). In contrast to legal harvesting of bears, which often includes restrictions as to the number of young or female or trophy males to be taken and the seasons and areas in which hunting is allowed, poaching may be more indiscriminate. Managers often factor in some level of unknown, unreported mortality (such as due to poaching) into the harvest quotas, to try and ensure that harvest is sustainable. Widespread poaching may cause management problems for certain populations if managers do not factor this source of mortality in correctly.

Brown Bear management

In some range States Brown Bears are considered an “umbrella species”, i.e. one whose needs and range encompass those of a wide variety of other species. The management of Brown Bears and their habitat therefore has the potential to benefit many other species (USFWS, 1993). However, the Brown Bear is often a difficult large mammal to manage successfully (Dauphine *et al.*, 2001) and because it has slow population growth rates, measurable changes in density are unlikely to occur within the lifetime of a project (Taylor, 1994) and one or two decades may pass before the impact of a management decision may be visible (Peyton *et al.*, 1999). Another consequence of their relatively low reproductive rates is that Brown Bears are susceptible to over-harvest and if over-harvested, are slow to recover. Consequently, McLellan and Banci (1999) advise that harvest rates should be set conservatively.

Various figures are quoted for an annual sustainable human-induced mortality of Brown Bears. According to McCullough (1981), the maximum sustainable harvest pressure on bears is estimated to be 5-8%. In the case of a population of at least a few hundred Brown Bears, the sustainable human caused mortality level should be no more than six per cent according to Harris (1986).

However, a single figure for sustainable harvest cannot apply to all countries or populations within a country as habitat quality and capacity vary and hence productive rates will vary between areas. Due to their higher reproductive rates, many European Brown Bear populations can sustain greater harvest rates than in North America (Swenson *et al.*, 2000). In Sweden for example, the sustainable harvest has been calculated to be greater than 10% of the population (Swenson *et al.*, 1999). However, the densities of Brown Bears in Sweden are very low compared to many places in North America, so although the sustainable rate may be higher in Sweden, the sustainable number of Brown Bears that can be killed in a given area may be much lower than in North America (B. McLellan, *in litt.*, 2005).

In 2000, the Large Carnivore Initiative for Europe (LCIE), which was created in 1995 by WWF International together with partner organisations and experts in 17 European countries, published the ‘Action Plan for the Conservation of the Brown Bear (*Ursus arctos*) in Europe’ (hereafter referred to as the European Action Plan, or

EAP) (Swenson *et al.*, 2000). The EAP provides guidance for drawing up national management plans and covers not only the status and needs of local populations in Europe but also highlights gaps in management and makes suggestions for future action for each country. The EAP stresses the necessity for a continental approach and for co-ordinated efforts and collaboration with neighbouring States in developing national management plans.

Brown Bears and trophy hunting

Swenson *et al.* (2000) consider that in terms of Brown Bear management, hunting is the “most reasonable way to stabilise the number of bears after a population goal has been reached”. Trophy hunting is a specific type of hunting. Trophy hunting has been defined in numerous ways including as “hunting activities for one or more specimens of a certain species by a foreign hunter, who is willing to pay a fee for the special hunting experience and/or the trophy attained” (Hofer, 2002). The term trophy, in the context of hunting, is used for special parts of the hunted animal that are keepsakes for the hunter. A trophy can be used as an ornament, a talisman, jewellery or a floor or wall decoration.

The issue of trophy hunting is a controversial one with people having different views for a variety of cultural, ethical, social and biological reasons. A specific biological concern is that trophy hunters often strive to obtain the largest trophies possible and that such selective hunting may alter the population composition.

The TRAFFIC Europe report *The Lion's Share of the Hunt* (Hofer, 2000) examined the Eurasian tourist hunting market and the international trade in trophies of CITES mammals. In 2002, there were around 6.2 million hunters in the European Union (15 Member States), accounting for approximately 1.7% of the total EU population. The European hunting industry is one of the largest and most affluent in the world and European hunters travel all around the world to hunt (Hofer, 2002).

Brown Bears have been widely sought as big game trophies and are currently subject to regulated sport hunting throughout much of their range (Ballenger & Dewey, 2002). The Brown Bear is also a valuable species for trophy hunting (Servheen, 2001). The fee set by selected European agencies to hunt a Brown Bear was found to vary between EUR1400 and 8700 (and can be even higher according to trophy quality), placing this species amongst the most expensive Eurasian mammals available for trophy hunting. The Brown Bear is also one of the seven most popular CITES species offered to European hunters (Hofer, 2002). The economic value of Brown Bear trophy hunting to the range States is said to create economic incentives for bear conservation (B. McLellan, *in litt.*, 2005).

Other uses of Brown Bears

Although this report will focus on trophy hunting, Brown Bears are also used and traded for other purposes such as for furs or for materials used in traditional medicines (Hofer, 2002). Bears are valued for their parts, such as blood, bone, brain, fat, gall, meat, paws or spinal cord (Rose & Gaski, 1995), which have been used in Traditional East Asian Medicine (TEAM) for thousands of years (Read, 1982). The most common medicinal application of bear parts in TEAM involves the use of bile from bear gallbladders (Williamson, 2002) and bear bile is also one of the most valuable of TEAMs (Kemf *et al.*, 1999; Ballenger & Dewey, 2002). Bears are severely threatened in the wild due to the growing demand for bear gall bladder and bile (Phillips & Wilson, 2002). Chinese medical texts specifically recommend the Asiatic Black Bear or the Brown Bear as sources of medicinal bile (Mills *et al.*, 1995). In the past, Brown Bears were also used for their meat and hides but these products are no longer in high commercial demand (Ballenger & Dewey, 2002).

National and international conventions and regulations

At national level

The legal structure under which harvest and export occurs varies among and within countries. In some countries e.g. Estonia and the Russian Federation, bears are managed as a game species for which an annual quota is set. In other countries e.g. Slovenia, they are legally protected but special permits are issued for an annual harvest. In Croatia, the

Brown Bear is classified both as a game species and a protected one. In the lower 48 States of the USA and in Bulgaria, hunting is forbidden apart from in cases of self-defence or of dangerous bears. The national legislation related to Brown Bear harvest and exports is discussed in more detail in the Chapter on Brown Bear Management in Selected Range States.

At international level

All Brown Bear populations are listed in Appendix II of CITES apart from those in Bhutan, China, Mexico and Mongolia, as well as populations of *Ursus arctos isabellinus* (which occurs in Afghanistan, India, Kazakhstan, Kyrgyzstan, Nepal, Pakistan, Tajikistan and Uzbekistan), which are in Appendix I.

CITES has been implemented in the EU since 1984 through a common Regulation that applies to all EU Member States. The following two Regulations make up the core of the Community's wildlife trade legislation:

- *Council Regulation (EC) No 338/97*, which deals with the protection of species of wild fauna and flora by regulating the trade in these species.
- *Commission Regulation (EC) No 1808/2001*, which establishes rules for Member States on the implementation of *Council Regulation (EC) No 338/97*.

Council Regulation (EC) No 338/97 covers species listed in its four Annexes (A, B, C and D), and affords them varying degrees of protection. The Annexes of *Council Regulation (EC) No 338/97* as well as *Commission Regulations (EC) No 1808/2001* are regularly updated to incorporate changes agreed upon at each meeting of the Conference of the Parties to CITES. In the EU, Brown Bears are listed in Annex A of *Council Regulation (EC) No 338/97*, which roughly corresponds to CITES Appendix I and generally prohibits commercial trade in the listed species. This listing on Annex A of the Brown Bear under the EU Wildlife Trade Regulations is due to the species status under the Council Directive (EC) 92/43/EEC, the so-called EU 'Habitats Directive', which prohibits the keeping, transport and sale or exchange of specimens of species listed in its Annex IV. To ensure consistency between the different legislative instruments of the Community and to avoid confusion, all species listed in Annex IV of the Habitats Directive are listed in Annex A of the Council Regulation (EC) 338/97.

Trade in hunting trophies as personal effects

The EU Wildlife Trade Regulations, similarly to CITES, contain less strict provisions and permit requirements for trade to and from the EU in specimens of species listed in the Annexes that are considered 'personal effects and household goods'. However, in the case of the EU, these only apply to specimens made of dead animals or plants and for specimens that are introduced for non-commercial purposes, i.e. they cannot be sold or offered for sale later on. It should also be noted that many of the popular hunting species such as the Brown Bear are often also subject to national legislation in the country of origin.

EU import suspensions and the role of the Scientific Review Group

Council Regulation (EC) No 338/97 provides the Commission with the possibility to suspend imports of certain species from specified non-EU countries, into the EU. Such import suspensions are usually decided after the Scientific Review Group (SRG) of the EU, that consists of representatives from the CITES Scientific Authorities of the 25 EU Member States, has formed a Negative Opinion on the import of the particular species and has consulted with the relevant range State on the matter. Such decisions may be triggered by concerns raised by one or more Member States or by the SRG itself with regard to the conservation impact of the trade, following an assessment of compliance with the relevant requirements contained in Article 4 of *Council Regulation (EC) 338/97*. This Article requires the EU Scientific Authorities to only issue import permits when they have ascertained that "the introduction into the Community would not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species". This is in effect what CITES requires from all Scientific Authorities and is also called "Non-Detriment Findings". The *Guidelines on Duties and Tasks of the Scientific Authorities and Scientific Review Group under Regulation (EC) No. 338/97 and Regulation (EC) No. 1808/2001* present a more detailed overview of the factors and conditions that must be considered by a Scientific Authority when making such Non-Detriment Findings. These *Guidelines* state that trophy hunting should be part of a careful species management plan that should, as appropriate;

- be based on sound biological data collected from the target population(s)
- clearly demonstrate that harvest levels are sustainable
- be monitored by professional biologists
- be promptly modified if necessary to maintain the conservation aims
- demonstrate that illegal activities are under control
- produce significant and tangible conservation benefits for the species
- provide benefits to, and be in co-operation with, the local people who share the area with or suffer by the species concerned

For species listed in Annex A, the CITES Management Authority must also be satisfied that the import is taking place for certain purposes only. For example, the import may be taking place for purposes that are not detrimental to the conservation of the species, such as well-managed trophy hunting programmes. If the SRG issues a Negative Opinion for a species from a particular country or countries, then the EU as a whole has to cease issuing import permits for that species/country combination until the SRG has formulated a Positive Opinion, for example, based on new information received from the range State.

Based on a range of criteria, including the absence of information received from the country of concern, the SRG may decide to include a Negative Opinion in the wildlife trade “Import Suspensions” Regulation, which, at the time this report was published, had been last amended in February 2005 (*Commission Regulation (EC) No 252/2005* of 14 February 2005). Once a species/country combination is included in the list of “Import Suspensions”, the process to reverse the Negative Opinion and to resume imports into the EU becomes less flexible because it requires an amendment of the regulation, which happens only once or twice a year.

Since the first SRG meeting in 1997, nine Brown Bear range States have been the subject of one or more SRG Opinions (**Table 2**). At the time this report was started (May 2005), the SRG had decided upon a Negative Opinion for British Columbia (Canada) and Romania but only the Negative Opinion for British Columbia was included in the Import Suspension Regulation. However, the Negative Opinion for Romania was changed to a Positive Opinion while this report was being written, in October 2005. In the past, the SRG has also held Positive or Negative Opinions, but has not included any Negative Opinion in the Import Suspension Regulation, for seven other range States: Bulgaria, Croatia, Estonia, the Russian Federation, Slovakia, Slovenia and the USA.

The SRG does not issue Positive or Negative Opinions to EU Member States (because there are no internal barriers to trade between the EU Member States) and in the case of new Member States for which the SRG had issued an Opinion, this Opinion is removed upon accession to the EU. This was the case for Estonia and Slovakia, which had a Positive Opinion for Brown Bears and for Slovenia, which had a Negative Opinion for Brown Bears upon accession to the EU.

Table 2**History of Scientific Review Group (SRG) Opinions for Brown Bears, by country.**

Country	Opinion	Date	Notes
Bulgaria	(+)	11/11/1997	Hunting trophies
Canada	(-)	15/01/2004	Hunting trophies from British Columbia only
	(+)	02/04/2002	Hunting trophies from British Columbia only
	(-)	29/11/2001	Hunting trophies from British Columbia only
	(+)	11/11/1997	Hunting trophies
Croatia	(+)	13/12/2004	
	(-)	09/10/2003	
	(+)	05/09/2002	For 1 year pending management plan
Estonia	+ Removed	01/05/2004	Upon accession to the EU
	(+)	15/12/1997	Hunting trophies
Romania	(+)	25/10/2005	
	(-)	13/06/2005	
	(-)	15/03/2005	
	(-)	13/12/2004	
	(+)	11/11/1997	Hunting trophies
Russian Federation	(+)	11/11/1997	Hunting trophies
Slovakia	+ Removed	01/05/2004	Upon accession to the EU
	(+)	13/05/1998	
Slovenia	- Removed	01/05/2004	Upon accession to the EU
	(-)	30/01/2003	Hunting trophies
	(+)	22/02/2000	
USA	(+)	11/11/1997	Hunting trophies

Source: UNEP-WCMC (2005b) www.unep-wcmc.org.

Convention on the Conservation of European Wildlife and Natural Habitats (1979)

The goal of this convention, also known as the Bern Convention, is to ensure the conservation of European wildlife and natural habitats by means of co-operation between States. The European Brown Bear is listed in Annex II (strictly protected fauna species), which means that useful and necessary actions have to be taken to enhance the special protection of this species; especially forbidden is every form of deliberate capture, keeping or killing, the wilful disturbance, and the possession and trade with these species (Swenson *et al.*, 2000). In addition, the habitats of Annex II species are required to receive protection (Anon., 2002). The European Action Plan (Swenson *et al.*, 2000) was endorsed in the framework of the Bern Convention.

Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora (Habitats Directive) (1992)

The Habitats Directive is one of the basic regulations related to nature protection in EU countries. The Brown Bear is listed in Annex II of this Directive. This Annex includes wild fauna and flora species of Community interest, the conservation of which requires the establishment of Special Areas of Conservation within an ecological network called Natura 2000. The Brown Bear is also listed in Annex IV as one of the species of Community interest that needs to be strictly protected (capturing, killing and disturbing are prohibited). According to Article 16 of the Directive, countries can deviate from the above-mentioned provisions under special conditions. The keeping, transport and sale or exchange of specimens of Annex IV species taken in the wild is prohibited, except in the interest of preventing serious damage, in particular to livestock, in the interests of public health and safety, for the purpose of research and education and for the purpose of repopulating and re-introducing these species. Because the Brown Bear is subject to a trade prohibition under the Habitats Directive, it is automatically listed in Annex A of the *Council Regulation (EC) No 338/97*, regardless of whether a population is listed in Appendix I or II of CITES (see 'National and international conventions and regulations').

METHODOLOGY

Data sources

A number of reports on bears have been published recently including a report on *the Status of Bears in Europe and Russia* (Berkhoudt, 1999), the IUCN/SSC Bear and Polar Bear Specialist Groups' *Bears. Status Survey and Conservation Action Plan* in 1999 and the *Brown Bear Conservation Action Plan for Europe* (Swenson *et al.*, 2000). Much of the population abundance and status data used in this report come from the latter two sources as well as from national Brown Bear management plans. Where appropriate, national and international bear experts were contacted and a list of full *in litt.* references can be found in Annex 1. In addition, available SRG meeting documents and correspondence were used as well as more general bear literature. SRG document numbers listed in the text (e.g. Doc. SRG4/9/2, 1997) refer to internal meeting documents of the SRG and the year in which the meeting took place.

CITES trade data (data provided by CITES Parties in CITES annual reports) were used to analyse reported international trade in Brown Bear specimens. The trade data involving Brown Bears for the years 1975 to 2003 were downloaded from the CITES Trade Database, managed by UNEP-WCMC on behalf of the CITES Secretariat, in May 2005.

CITES trade data are largely limited to CITES Parties. As more countries become CITES Parties, more countries submit trade data, which can lead to reported increases in trade that are actually just an artefact of increased reporting. Similarly, when trade data are analysed by country, trade may appear to suddenly begin in one year when in fact this may simply be the year that the country joined CITES and started reporting its international trade.

For the purpose of this report, comparative tabulations, which compare the reported imports and exports reported by individual CITES Parties, were used unless stated otherwise. These include information on reported purpose of the trade and source of the specimens traded. Although the trade records should be reported identically by the importer and the exporter, in practice, these often differ. Because the core of the analysis in this report concerns imports by the EU Member States, the importer data were used for the analyses.

Trade data analysis

Unless specified otherwise, all CITES trade descriptions and totals include all sources (e.g. wild, captive-bred) and purposes (e.g. commercial, personal or hunting) for data from 1975 (when CITES came into force) to 2003 (the most recent year in which comprehensive data are available). CITES Parties often but not always use a term to describe a trade shipment. One such term is 'trophy' but there are also other items like claws, teeth or bones that are likely to be trophies, but which might be part of another, larger trophy. It would be unusual for a hunter to take only say claws without the 'primary' trophy (such as the head or skin). For this reason, the following analyses only represent the 'primary' trophy items: bodies, skins, skulls and trophies (which are jointly referred to as 'trophy items'). This restriction aims to avoid an exaggerated estimate of the actual trophy trade and is consistent with past studies on trophy hunting (Hofer, 2002).

Even with 'primary' trophies, it is not possible to equate one trophy item with one animal, as it could be that a skull and a skin come from the same bear. It is therefore not possible to infer the exact number of specimens killed from the number of trophies. Rather, the data provide an estimate of the trade and therefore the level of harvest and are useful to compare trophy hunting in different countries and to highlight trends.

Rarely, trophy terms are reported in kg or other units rather than as individual items. As different units are not comparable and cannot be summed, units that were not a whole item were ignored or mentioned separately.

Most of the analyses involve only direct exports from the country of origin and exclude re-exports, as exports from a country of origin are more relevant when assessing the level of extraction of animals from a country's population and the impact of trade on a population. However, in some cases, re-exports and exports were lumped together [and referred to as (re-)exports in such cases], for example when looking at trade routes and at the most important countries in trade.

For some parts of the trade analysis, the European Union is treated as it was prior to the Accession of the 10 new Member States in May 2004, to get a more accurate picture of the historical situation. In addition, as some of the new Member States were given Opinions by the SRG before Accession, it is useful to look at their trade at the time with the European Union's 15 Member States. To avoid confusion, the terms 'EU15' and 'EU25' are used as abbreviations for the 15 and 25 European Union Member States respectively.

Literature search

The focus of this study was to look at the overall management of and trade in Brown Bears, as well as SRG decisions rather than to undertake a detailed review of the population status and survey methodologies in Brown Bear range States. More detailed information can be found in various peer-reviewed journals that may contain more details on population estimates and the research methods used to obtain these population estimates.

Population estimates used in this report are based on information published in overview reports such as *Bears. Status Survey and Conservation Action Plan* (IUCN/SSC Bear Specialist Group, 1999) or *Brown Bear Conservation Action Plan for Europe* (Swenson *et al.*, 2000) and it is therefore important to mention the type of information given in these overview reports. The country sections in the IUCN/SSC Action Plan are written by national bear experts and the information therein is therefore judged to be accurate. The *Brown Bear Conservation Action Plan for Europe* does not provide information on the methodologies used to obtain the population estimates but as the report was endorsed by both the IUCN/SSC Bear Specialist Group and the International Bear Association, it is also judged to be accurate.

As such, the information in this report serves only as an introduction to the situation in each of the range States under review. Decisions made by the SRG or another body would need to be based on more detailed information including the data collection methods with which population data were obtained and an assessment of the reliability of the methods and the confidence intervals on the population estimates.

RESULTS

Review of the international trade in Brown Bears

Global trade in Brown Bear trophies

Ursus arctos has been reported in trade at both the species and subspecies level, with the following subspecies appearing in CITES data: *U. arctos horribilis*, *U. arctos isabellinus*, *U. arctos middendorffi*, *U. arctos pruinosus* and *U. arctos richardsoni*. *U. arctos nelsoni*, which is now extinct, has not been reported in trade.

In total, 14 067 trophy items were reported in trade by CITES Parties between 1975 and 2003, declared as 670 bodies, 4 167 skins, 1303 skulls and 7927 trophies of Brown Bears. A further 2286 Brown Bears were traded live (**Table 3**). In addition to the terms in **Table 3**, some specimens were traded under the term ‘unspecified’ or with no term given at all.

Table 3

All the terms under which Brown Bears have been traded globally and the number of specimens (or other units). The four main trophy items are italicised.

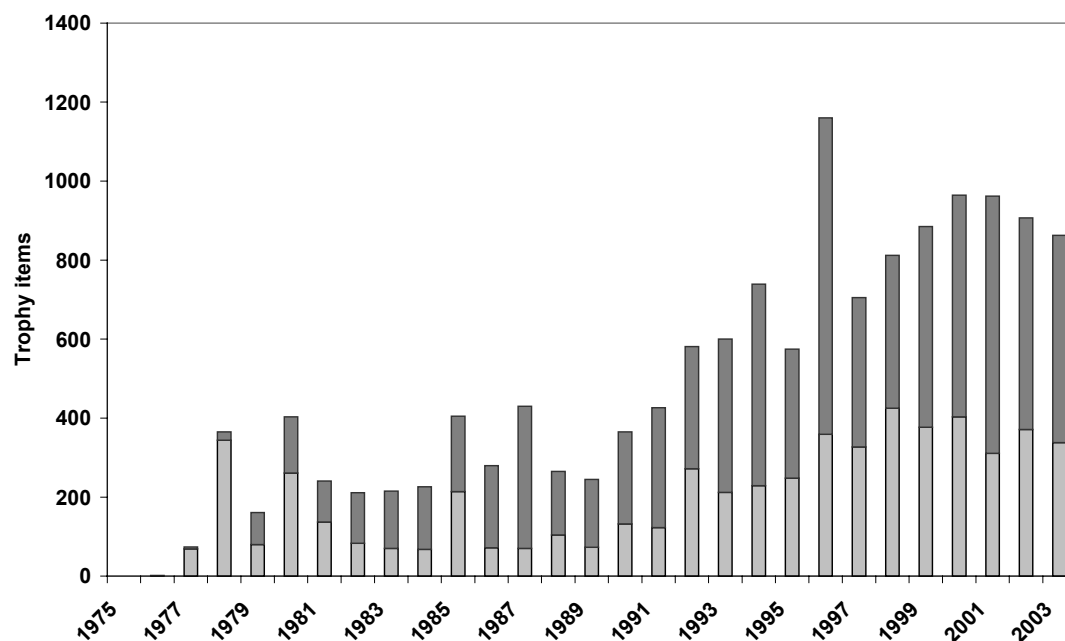
Term	Total
<i>bodies</i>	670 (+100 kg)
bones (carvings, products, pieces and sets)	24
carvings	54
claws	5 942
derivatives	5728 (+31.25 kg + 23 000 boxes)
feet	80
gall	116kg
gall bladders	43kg
garments	2344 (+12 kg)
genitalia	1
hair (and hair products)	516
horn scraps	20
leather items and products	51
live	2286
meat	17 945 kg
other	11
plates	422
skeletons	2
skin pieces	341
<i>skins</i>	4167
<i>skulls</i>	1303
specimens	2792 (+2 kg)
teeth	4208
<i>trophies</i>	7927
wallets	183

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

Total reported trade in Brown Bear trophy items (bodies, skins, skulls and trophies) has increased over time for both the EU25 and the rest of the world, with a peak in 1996 and a slight decrease since 2000 (**Figure 2**). The sudden increase in global trade in 1996 is caused largely by both an increase in exports of trophy items from Canada to the USA and from the USA to Canada in that year.

Figure 2

Reported imports of Brown Bear trophy items by European Union (EU25) Member States (light grey) and by the rest of the world (dark grey) (1975-2003).



Source: CITES trade data. Compiled by UNEP-WCMC, Cambridge, UK.

The main importer of Brown Bear trophy items was the USA with 6459 trophy items, followed closely by the EU25, with 5772. The other main importers were Canada, Norway and Japan (**Table 4**).

Table 4

The five importers of the largest quantities of Brown Bear trophy items and the quantities reported as imported (1975-2003).

Country	Trophies imported	Percentage of total trade
USA	6 459	46
EU (25 Member States)	5 772	41
Canada	518	4
Norway	311	2
Japan	250	2
Global Total	14 067	

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

Of the 14 067 Brown Bear trophy items traded globally, 6 010 were (re-)exported (i.e exported or re-exported) by Canada, 3 615 by the Russian Federation, 2 275 by the USA and 1 130 by Romania (**Table 5**). The (re-)exports of these four countries accounted for 93% of global trade, whilst all other countries (re-)exported fewer than 150 trophy items each. The EU25 Member States accounted for only three per cent of global (re-)exports.

Table 5

The most important (re-)exporters of Brown Bear trophy items and the quantities (re-)exported (1975-2003).

Country	Trophies (re-)exported	Percentage of total trade
Canada	6 010	43
Russian Federation	3 615	26
USA	2 275	16
Romania	1 130	8
EU (25 Member States)	470	3
Global Total	14 067	

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

Table 6

Brown Bear range States categorised according to exports of Brown Bear trophy items.

	Description	Countries (number of trophy items exported to the EU25, 1975-2003)
a. EU25 range States		
1	Austria, Czech Republic, Estonia, Finland, France, Greece, Hungary, Italy, Latvia, Poland, Slovakia, Slovenia, Spain, Sweden	
b. Rest of the World		
2	Have been reported to export Brown Bear trophy items to EU25 Member States	Bulgaria (41), Canada (1 367), China (16), Croatia (36), Georgia (22), Korea (DPR)* (54), Romania (974), Russian Federation (1 382), Turkey (1), USA (1 450)
3	Have never been reported to export Brown Bear trophy items to EU25 Member States	Afghanistan, Albania, Armenia*, Azerbaijan, Belarus, Bhutan, Bosnia and Herzegovina*, India, Iran (Islamic Republic of), Iraq*, Japan, Kazakhstan, Kyrgyzstan*, Macedonia (former Yugoslav Republic of), Mexico, Mongolia, Nepal, Norway, Pakistan, Serbia and Montenegro, Syrian Arab Republic*, Tajikistan*, Turkmenistan*, Ukraine, Uzbekistan

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK. * Range States which are not CITES Parties. Category 1 contains EU25 Member States that are Brown Bear range States. Category 2 contains non-EU countries that have been reported to export Brown Bear trophy items to EU25 Member States. Category 3 contains non-EU countries that have never been reported to export Brown Bear trophy items to EU25 Member States. Numbers in brackets represent the numbers of trophy items exported by non-EU Member States to the EU25 (1975-2003).

The EU Member States have never reported any imports from the range States in Category 3 (**Table 6**) and these countries will therefore not be discussed further. **Annex 2** lists all the countries that have (re-)exported trophy items to the EU Member States, as well as the quantities (re-)exported.

Apart from China, which exported 16 trophy items to Germany in 1979, no imports by the EU25 Member States of Brown Bear trophy items (or any other term) have been reported from any of the range States in which Appendix I populations occur (Bhutan, China, Mexico, Mongolia, Afghanistan, India, Kazakhstan, Kyrgyzstan, Nepal, Pakistan, Tajikistan and Uzbekistan) and these countries will not be discussed in the context of this report.

European Union trade in Brown Bear trophies

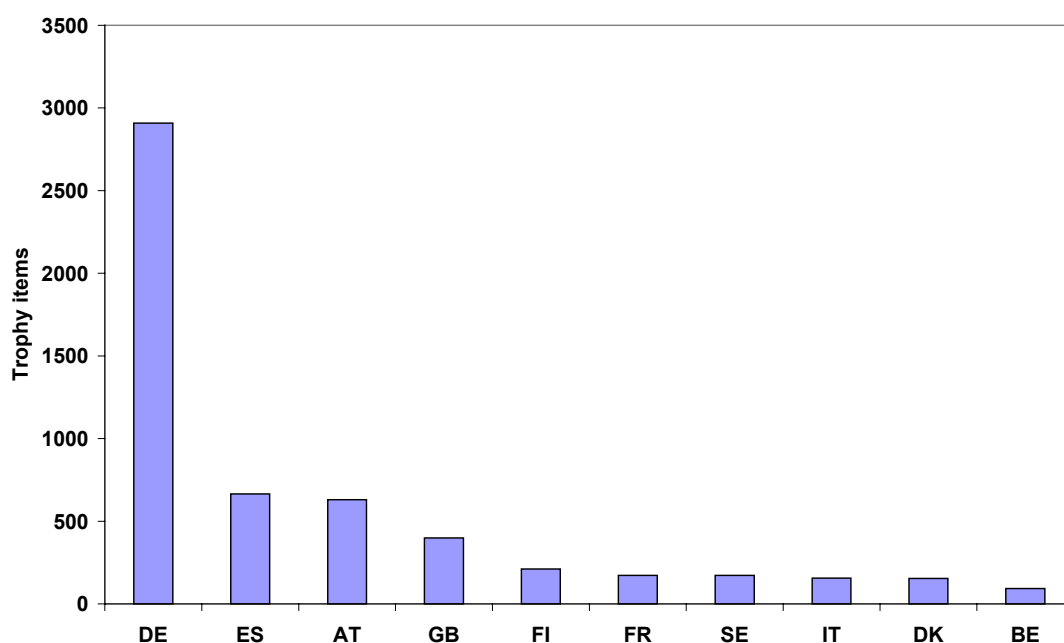
The CITES trade data available at the time this report was prepared were only comprehensive up until 2003, at which point the 10 Member States had not yet joined the EU. For this reason, the EU trade analysis in this section looks at both the role of the EU15 and the 10 new Member States separately.

Between 1975 and 2003, the EU25 Member States were reported as importing 5772 Brown Bear trophy items, of which 5625 were reported as imported by the EU15 and 147 by the 10 new Member States.

Germany was by far the largest reported importer of trophy items in the EU25, with 2908 trophy items imported during 1975-2003, followed by Spain (665) and Austria (630) (**Figure 3**). The most important importers amongst the 10 new Member States were the Czech Republic and Poland with 55 and 45 items reported as imported respectively (**Table 7**).

Figure 3

The 10 EU25 Member States which imported the greatest total number of Brown Bear trophy items (1975-2003).



Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK. DE=Germany, ES=Spain, AT=Austria, GB=UK, FI=Finland, FR=France, SE=Sweden, IT=Italy, DK=Denmark, BE=Belgium.

Table 7**Total reported imports of trophy items by EU25 Member States (1975-2003).**

Member State	Imports	Member State	Imports
Germany	2 908	Slovakia	21
Spain	665	Netherlands	17
Austria	630	Luxembourg	13
UK	399	Estonia	12
Finland	212	Hungary	8
France	172	Greece	3
Sweden	172	Lithuania	3
Italy	156	Ireland	2
Denmark	154	Slovenia	2
Belgium	93	Cyprus	1
Czech Republic	55	Latvia	0
Poland	45	Malta	0
Portugal	29		

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

The USA was the largest reported (re-)exporter of trophy items to the EU25, followed by Canada, the Russian Federation and Romania (**Table 8**). Together, these four range States accounted for 91% of the (re-)exports of trophy items to the EU25.

Looking at the terms under which specimens were traded, the most imported term for specimens of Brown Bear imported into the EU25 was ‘trophies’, with over 2500 reported as imported into the EU25 between 1975 and 2003. Quantities in trade reported under other important terms that are likely to be related to trophy hunting include 2434 skins, 759 skulls, 123 claws and 76 bodies. In addition, over 2919 kg meat, 514 live animals, 216 skin pieces and 12 kg of gall were reported as imported into the EU25.

Table 8**The main range States from which the EU25 imported Brown Bear bodies, skins, skulls and trophies and the quantities imported (1975-2003).**

Range State	Trophies	Skins	Skulls	Bodies	Total
USA	719	641	129	17	1506
Russian Federation	697	459	223	10	1389
Canada	328	880	140	19	1367
Romania	517	233	222	2	974
Rest of World	242	221	45	28	536
Total	2503	2434	759	76	5772

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

Of the 5772 trophy items reported as imported by the EU25 Member States, 3 275 (57%) were from the wild, 60 (1%) were from other sources. For the remaining 2437 specimens, no source was reported by the EU25 Member States. Given the nature of trophy hunting, it is likely that the majority of the specimens with no reported source came from the wild. Hunting was the main reported purpose of trade in trophy items, with 3372 specimens imported for this purpose (58% of imports to the EU25). The other significant purposes were commercial, with 979 specimens (17%) and personal, with 778 specimens (13%). It is interesting to note that a number of wild-sourced Brown Bear bodies, claws, skins, skulls, teeth and gall have been reportedly imported into the EU for commercial purposes. According to EU Wildlife Trade Regulations, the import of wild specimens of Annex A species into the EU is only allowed for non-commercial purposes.

Of the 979 trophy items imported into the EU25 for commercial purposes, 168 were reported as wild-sourced, two as captive-bred, two as pre-Convention and the rest had no reported source.

Between 1975 and 2003, the EU25 Member States exported 287 Brown Bear trophy items, of which 113 came from the 15 EU Member States and 174 from the 10 new Member States. In addition to their exports, the 15 EU Member States re-exported 207 trophy items and the 10 new Member States re-exported four. The UK re-exported 113 trophy items, Germany 29 and Austria 25, collectively accounting for 85% of the re-exports from the EU15.

Figure 4

Brown Bear range States (mottled pattern) and the main exporters of Brown Bear trophy items to the European Union. The Brown Bear range States within the European Union are shaded light grey if they have exported Brown Bears and dark grey if they have never done so.



Source: based on CITES trade data compiled by UNEP-WCMC, Cambridge, UK. Servheen *et al.* (1999); UNEP-WCMC (2005a)

BROWN BEAR MANAGEMENT AND TRADE IN SELECTED RANGE STATES

The following section reviews Brown Bear management, including information on population status and distribution, legislation, threats, harvest quotas and trade data for the nine range States for which the SRG has formulated an Opinion, either Positive, Negative or a mixture of these over time. In the case of Canada, the SRG's Opinions are for one province only, British Columbia (B.C.), so information is only given for Canada as a whole and for the Province of B.C., not for other provinces.

Bulgaria

Population Status and Distribution

The Bulgarian Brown Bear population is the third largest national population in Europe, after the Russian Federation's and Romania's (Spasov & Spiridonov, 1999). Currently, there are four main local populations; Central Stara Planina Mountain Range (also called the Central Balkan Mountains Range), Rila Mountain, Pirin Mountain and Western Rhodopes Mountain (Spiridonov & Spasov, 1990). The Central Stara Planina Mountain population has been isolated since the beginning of the 20th century (Spasov & Spiridonov, 1999) and contains about 200 individuals (Swenson *et al.*, 2000). The three other populations maintain permanent contact (Spasov & Spiridonov, 1999) and are part of the Rila-Rhodope Mountains population, which totals about 520 individuals of which 500 are in Bulgaria and the rest in Greece (Swenson *et al.*, 2000). The present distribution area of Brown Bear in Bulgaria spans 10 000 km² (Swenson *et al.*, 2000) of which 2600 km² are protected.

The Brown Bear is listed in the 1985 Red Data Book of Bulgaria, as 'comparatively rare' according to Spasov and Spiridonov (1999) and is currently considered to be rare (Bulgarian CITES Management Authority, *in litt.*, 2005). The main threats are poaching, habitat fragmentation and isolation. Political and economic instability may further complicate the situation for proper Brown Bear management in Bulgaria (Swenson *et al.*, 2000).

Legislation and National Management Plan

Until 1993, the Brown Bear was considered a game species and as such was managed by the Committee of Forests. Since 1993, the Brown Bear has been designated a protected species in Bulgaria and hunting is not allowed apart from dangerous bears (*Ministerial Order of the Minister of Environment No1023/31.12.1992* and then the *Law on Hunting and Game Protection (State Gazette No 78/2000)*). In 2002, the Brown Bear was included in Annex 3 of the *List of Protected Animal and Plant Species of the Law on Biological Diversity (State Gazette No 77/2002)*, which meant that the competent authority to grant permits to shoot nuisance bears changed from the Ministry of Agriculture and Forestry to the Ministry of Environment and Water (Bulgarian CITES Management Authority, *in litt.*, 2005).

Bulgaria has a reservation for the Brown Bear under the Bern Convention regarding certain means or methods of killing, capture, or other exploitation, with the argument that 'because of their large population in the Republic of Bulgaria, the protection of these species [*Ursus arctos* and *Canis lupus*] in its territory does not prove to be necessary' (Anon., 2002).

According to Swenson *et al.* (2000), Bulgaria does not have a Brown Bear management plan. However, a management plan is currently being prepared by the government, with the help of NGOs, and is expected to be completed in 2005 (K. Kecse-Nagy, *in litt.*, 2005a).

Hunting and Management

Brown Bear population estimates are based on direct counts and population counts have been conducted since 1952 (Bulgarian CITES Management Authority, *in litt.*, 2005).

Due to a desire to develop international hunting tourism in Bulgaria, efforts were made to increase the bear population including opening two captive breeding farms for bear hunting in 1968 and 1984, from which some bears were released. An increase in poaching after 1989 along with a decrease in hunting control led to the designation of the Brown Bear as a protected species in 1993. As a consequence, bear hunting was restricted again apart from problem bears or in the case of overpopulation (Spassov & Spiridonov, 1999).

The Balkan Bear Conservation Network (BBCN), bringing together specialists from the Southern Balkans, was established in 1996 and a co-operative project between Bulgaria, Albania, Greece and FYR Macedonia on Balkan Bear conservation was set up (Anon., 1997b). The 'Long-term Programme for the Conservation of the Bulgarian and Balkan Bear Population' was conducted between 1995 and 1998 (Anon., 2003). One major measure of this Programme was to decrease conflicts between bears and humans, including a programme to compensate farmers for produce depredation caused by bears. However, according to Swenson *et al.* (2000), compensation for damage caused by bears was not paid but this was 'in preparation'.

Fewer than 10 bears were reported as killed each year between 1984 and 1996, apart from 1991 and 1992 (and possibly in 1990 and 1995 for which no figures are available) (**Table 9**). Since 1993, the only bears killed legally in Bulgaria are nuisance bears for which a hunting permit has been granted, and on average this amounts to only two or three individuals per year, and rarely up to eight to 10 individuals (Bulgarian CITES Management Authority, *in litt.*, 2005). According to Swenson *et al.* (2000), approximately 30 bears are killed illegally each year but Spassov and Spiridonov (1999) place this figure at 20 bears per year. Spiridonov and Spassov (1998) believe that the increase in poaching in the late 1990s is a potential threat to this species.

Table 9

The number of Brown Bears legally hunted in Bulgaria (1984-1996).

	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Bears hunted	3	7	7	8	6	5	?	30	12	7	5	?	8

Source: Spassov and Spiridonov (1999) apart from 1996 value which is from Swenson *et al.* (2000).

Between 1998 and 2000, the fee set by trophy hunting agencies to hunt a Brown Bear in Bulgaria varied between EUR2800 and 8700 (Hofer, 2002).

Trade

Bulgaria became a CITES Party in 1991. Based on CITES trade data no exports of Brown Bear trophy items were reported from Bulgaria prior to 1988. In total, Bulgaria is reported to have exported 45 Brown Bear trophy items between 1988 and 2003, of which 41 were imported by the EU15 Member States (**Table 10**). Reported annual exports peaked in 1999 with 10 individuals and have since then decreased to zero in 2003. Between 1988 and 1996, trophy item exports represented between 0 and 20% of annual Brown Bear legal hunting (for years with hunting data, see **Table 9**).

Table 10

Number of Brown Bear trophy items reported as exported from Bulgaria world-wide and to the EU15 (1988-2003).

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	1	0	0	7	2	0	0	1	0	6	3	10	4	5	2	0
Total	1	0	0	7	2	0	1	1	1	6	5	10	4	5	2	0

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

Bulgaria has not been reported as importing or re-exporting any Brown Bear trophy items between 1975 and 2003. It has been reported to export only one trophy item to the 10 new Member States.

SRG Opinions

In November 1997, the SRG formulated a Positive Opinion for the imports of hunting trophies from Bulgaria into the EU, judging that according to the present state of information, sufficient data were available proving that the conditions of Art. 4(1)a)i) are met i.e. *that introduction into the EU would not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species* (Doc. SRG4/9/1, 1997). The information provided was the following: population size of 700-800 individuals and an annual hunting quota of 50 bears (Doc. SRG4/9/2, 1997).

Canada (British Columbia)

Population Status and Distribution

There are approximately 25 000 Brown Bears in Canada occupying a range of 3 470 000 km² (McLellan & Banci, 1999). British Columbia (B.C.) is the province with the largest Brown Bear population, with a minimum population estimate of 13 834 individuals (Hamilton & Austin, 2002) and a best estimate of 16 887 (Hamilton *et al.*, 2004). Based on the data in the Ministry of Water, Land and Air Protection of British Columbia (MWLAP)'s *British Columbia Grizzly Bear (Ursus arctos) Population Estimates 2004* (Hamilton *et al.*, 2004), it is not possible to make any conclusion about the trend in the number of Brown Bears in B.C.. The Brown Bear range in B.C. covers around 791 182 km² (Hamilton *et al.*, 2004) and has not changed significantly in the past 30 years (von Arx, *in litt.*, 2002). It is estimated that the current number of Brown Bears in B.C. is 83% of what the environment can support (Hamilton *et al.*, 2004).

The current Brown Bear range in B.C. has been divided into Grizzly Bear Population Units (GBPUs) of which there are now 57 (down from 59), and which may delineate individual populations or sub-populations. Nine of these GBPUs are classed as *Threatened* and the rest as *Viable* by the MWLAP (Hamilton *et al.*, 2004). A *Threatened* GBPU is one where the population estimate is under 50% of the area's habitat capability (the number of animals that could be supported under optimal conditions). As well as threat status, population estimates are available for each GBPU in B.C. (Hamilton *et al.*, 2004).

Legislation and Management Plan

The B.C. MWLAP controls Brown Bear management policy in B.C. under the British Columbia Grizzly Bear Conservation Strategy (B.C. Government, 1995). In 2004, the *Recovery Plan for Grizzly Bears in the North Cascades of British Columbia* was published for the North Cascades area which contains one of the most threatened Brown Bear populations in B.C. (North Cascades Grizzly Bear Recovery Team, 2004).

Brown Bears are listed as *Special Concern* by the Committee on the Status of Endangered Wildlife in Canada (which means the species is not *Endangered* but needs careful management attention) and under the Federal Species at Risk Act (North Cascades Grizzly Bear Recovery Team, 2004). The maximum fine for poaching a Brown Bear is USD100 000 and six months in jail (Austin & Fraser, 2004).

The Rocky Mountains Grizzly Bear Co-ordination Committee was established as part of the B.C. Brown Bear management strategy. Its function is to co-ordinate management efforts between the two Canadian Provinces B.C. and Alberta, and the USA along the Rocky Mountains from Jasper National Park south to the southern end of the North Continental Divide Ecosystem (NCDE). Co-operative efforts are underway on mortality recording, information exchange, sharing of nuisance bear management approaches between the NCDE and Alberta (Anon., 1998a).

Hunting and Management

Background on recent management decisions in B.C.

Brown Bear hunting in B. C. has become a contentious and politically charged issue (Peek *et al.*, 2003). The following is a summary of the important recent events and decisions related to Brown Bear hunting and management that took place in B.C.

The B.C. Grizzly Bear Scientific Committee was appointed by the B.C. government in 1995 as part of the B.C. Brown Bear management strategy and was chartered to give scientific advice to the B.C. Minister of Environment on Brown Bear management and research in B.C. (Anon., 1998a). The Committee met periodically for several years and in 1998 provided the government with a “Three-Year Report Card”, which contained sharp criticisms regarding the lack of implementation of the Grizzly Bear Conservation Strategy (Peek *et al.*, 2003). This committee was disbanded in 2000 (Servheen, *in litt.*, 2005).

In response to claims that the current strategy for estimating Brown Bear numbers and for setting harvest quotas was inadequate to prevent widespread over-harvest (e.g. Horejsi *et al.*, 1998), the government of B.C. announced in February 2001, a three-year moratorium on Brown Bear hunting and that an independent panel of bear experts would be appointed to review the harvest management strategy (Peek *et al.*, 2003). In July 2001, the newly elected B.C. Government lifted the moratorium but supported the continuation of an independent review panel. In 2001, the Grizzly Bear Scientific Panel (GBS Panel) was appointed by MWLAP to investigate and provide recommendations to improve the methods that were used at that time by B.C. to manage its Brown Bears (Hamilton *et al.*, 2004). In January 2002, a CITES Non-Detriment Report regarding the export of Brown Bear from B.C. was produced by the MWLAP. This report found that the only factor of significant concern was “human tolerance”, which the report treats as a biological factor inherent to the species rather than being due to a management deficiency (Austin, 2002). In March 2003, the GBS Panel’s report was published and a working group was then assigned the task of leading the implementation of the GBS Panel’s recommendations (Hamilton *et al.*, 2004).

In February 2004, a report on *Scientific Criteria for Evaluation and Establishment of Grizzly Bear Management Areas in British Columbia* by a Panel of Independent Scientists was published (Gilbert *et al.*, 2004). The report states that although Grizzly Bear Management Areas (GBMA) have been a focal part of the B.C. Government’s Grizzly Bear Conservation Strategy since it was produced in 1995, the GBMAs proposed by the BC Government fail to meet the science-based criteria outlined in the report.

In April 2004, the GBS Panel reviewed the progress of MWLAP in implementing the recommendations of the GBS Panel (Peek *et al.*, 2004) and concluded that MWLAP has made reasonable progress in implementing the GBS Panel’s recommendations on population estimates and harvest management. However, the GBS Panel had anticipated more progress on identification and establishment of GBMAs.

In September 2004, an updated non-detriment finding was published by MWLAP (Austin & Fraser, 2004), which concludes that the requirements for a non-detriment finding were met with the management regime put into place by British Columbia.

Management of Brown Bears in B.C.

Environment Canada is the lead agency responsible for implementing CITES on behalf of the federal government in Canada. Within Environment Canada, the Canadian Wildlife Service (CWS) administers CITES and interacts with provincial, territorial and other federal agencies. The Canadian National CITES Management and Scientific Authorities are part of the Canadian Wildlife Service, within Environment Canada. Provinces such as B.C. also have CITES Management and Scientific Authorities. The provincial Government of B.C. has overall responsibility for Brown Bear management in B.C.

Because of the large size of B.C. and the elusive nature of Brown Bears, it is impossible to determine the exact population size. Management hunting in B.C. is therefore based on minimum population estimates in order to address the inherent uncertainty in counting or estimating the population size (B. von Arx, *in litt.*, 2002). In order to manage bears over large areas, B.C. biologists developed a method to estimate Brown Bear density from knowledge of the existing habitat, and referred to as the Fuhr-Demarchi (FD)¹ method. For the individual GBPU, a working group was appointed in 2004 to review the population estimates in the 57 GBPU and the working group chose three different methods to estimate the current number of Brown Bears in different areas of the province: a multiple regression model (Mowat *et al.*, 2004), mark-recapture inventory results (e.g. Mowat & Strobeck, 2000; Boulanger *et al.*, 2002), and an 'expert-based approach' based on the FD method (Hamilton & Austin, 2002; Hamilton & Austin, 2004). One of either methods is used in each GBPU (Hamilton *et al.*, 2004).

Based on the estimate of population size and an estimate of allowable harvest, managers ultimately make a recommendation for the number of licences available for Brown Bear hunting, which are adopted through the provincial process for establishing regulations. The Grizzly Bear Harvest Management Procedure (B.C. Government, 1999) involves a number of steps to calculate the maximum annual allowable known human-caused mortality. GBPU serve as the units for population objective setting and to determine allowable human-caused mortality thresholds (Hamilton *et al.*, 2004).

First, zones are subjectively assigned a three to six per cent allowable rate of hunting mortality depending on the habitat capacity. This rate is then reduced by an estimate of annual unknown human-caused mortality, which is set at one to two per cent, depending on the assumed level of human-Brown Bear interactions. The resulting rate is considered the *maximum annual allowable known human-caused mortality* (i.e., allowable rate of mortality minus unreported mortality) (B.C. Government, 1999). The *maximum annual allowable known female mortality rate* is set at 30% of total allowable human-caused mortality for the whole population (Harris, 1986). Hunters are prohibited from killing Brown Bears under the age of two and adult females accompanied by young (Peek *et al.*, 2003). GBPU with fewer than 100 bears are closed to hunting (Austin *et al.*, 2004).

In B.C., there are areas with spring-only hunts and some with spring and fall hunts (Austin & Wrenshall, 2004). The allocated hunting quota for each GBPU in B.C. is divided into First Nations entitlements (native Americans), non-residents and resident hunters entitlements (Austin *et al.*, 2004), thereby limiting the number of bears that can be taken by foreign hunters. Between 1978 and 1981, resident hunters accounted for 53% of the Brown Bear harvest and between 1997 and 2000 this figure was 58%. This increase reflects changes in the allocation of hunting opportunities to resident and non-resident hunters over time (Austin & Wrenshall, 2004).

The main problem faced by Brown Bears in B.C. is not legal hunting but habitat loss combined with increased exposure to humans, increase poaching and nuisance and defence kills (von Arx, *in litt.*, 2002). Most British

¹ The FD method begins with an estimate of the potential carrying capacity of habitat, in the absence of recent human impacts and then the bear density is estimated from knowledge of the existing habitat, based upon the ecological land classification system. Mark-recapture estimates have been used to verify FD estimates (Peek *et al.*, 2003).

Columbians have a favourable attitude toward Brown Bears, which has evolved during the last five to six decades. Prior to this, Brown Bears were widely viewed as such a serious threat to humans and their property that they were killed at every opportunity (Peek *et al.*, 2003).

For Canada as a whole, 519 Brown Bears were known to have been killed on average each year between 1991 and 1993, of which 433 were killed by hunters and the rest by other sources of mortality (McLellan & Banci, 1999). B. C. is the jurisdiction with the highest number of bears harvested in Canada (McLellan & Banci, 1999), with an annual average total known mortality (all sources) of 296 bears between 1993-2003 (**Table 11**). The total known mortality between 1978 and 2003 was 8 840, of which 89% were from hunter harvest, 9% from animal control, 1% from traffic accidents and 2% from illegal kills (Austin & Wrenshall, 2004) (**Table 11**). B.C. hunters have been required to submit harvested Brown Bears for inspection by government staff since 1976 (Austin & Wrenshall, 2004). This means a comprehensive harvest data set is available, including details of different forms of mortality (**Table 11**) as well as the age, sex and other details on the specimens.

Table 11

The number of Brown Bear mortalities recorded by year and kill type in British Columbia (1978-2003). The total mortality (Total) includes hunter harvest, animal control, illegal kills and individuals killed by traffic.

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Hunters	312	321	371	387	331	360	369	348	344	370	314	342	314
Control	6	13	19	7	15	15	16	20	14	17	17	21	15
Illegal	0	4	7	2	7	8	9	8	8	6	7	21	10
Traffic	0	2	0	5	2	1	0	4	4	4	3	1	3
Total	318	340	397	401	355	384	394	380	370	397	341	385	342

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	Total
Hunters	361	357	239	283	289	365	224	210	264	244	58	217	231	7 825
Control	13	28	35	38	84	32	41	36	81	60	43	45	28	759
Illegal	8	9	3	4	5	8	1	5	8	11	8	8	2	177
Traffic	1	4	1	5	1	8	4	3	5	3	8	4	3	79
Total	383	398	278	330	379	413	270	254	358	318	117	274	264	8 840

Source: Austin and Wrenshall (2004).

Table 12**Proportion of Brown Bear hunter harvest by sex (1978-2003).**

Year	Male	Female	Total	% Male	% Female
1978	226	78	304	74.3	25.7
1979	200	117	317	63.1	36.9
1980	249	117	366	68.0	32.0
1981	250	129	379	66.0	34.0
1982	215	112	327	65.7	34.3
1983	238	119	357	66.7	33.3
1984	240	125	365	65.8	34.2
1985	211	133	344	61.3	38.7
1986	223	120	343	65.0	35.0
1987	231	137	368	62.8	37.2
1988	190	121	311	61.1	38.9
1989	210	130	340	61.8	38.2
1990	200	11	311	64.3	35.7
1991	222	135	357	62.2	37.8
1992	240	117	357	67.2	32.8
1993	160	77	237	67.5	32.5
1994	181	99	280	64.6	35.4
1995	182	105	287	63.4	36.6
1996	226	139	365	61.9	38.1
1997	154	70	224	68.8	31.3
1998	140	70	210	66.7	33.3
1999	169	95	264	64.0	36.0
2000	168	74	242	69.4	30.6
2001	37	21	58	63.8	36.2
2002	142	75	217	65.4	34.6
2003	156	74	230	67.8	32.2
Total	5060	2700	7760	65.3*	34.7*

Source: Austin and Wrenshall (2004). * These are not totals but percentages averaged over 1978-2003.

The hunter harvest has consistently exceeded the 30% female-quota allowed (**Table 12**). Despite this, when observing the percentage of females killed in the hunter harvest, no trends are apparent (Austin & Wrenshall, 2004). Although harvest data are insufficient to determine population trends, the harvest data for B.C. do not suggest a province-wide decline for Brown Bears due to over-harvest of females (Austin & Wrenshall, 2004).

Trade

Canada became a CITES Party in 1975. Because CITES trade data is not available for B.C. only, the following presents the reported trade for the whole of Canada, including exports of Brown Bear specimens from other provinces. Canada is the largest exporter of Brown Bear trophy items world-wide and the second most important exporter to the EU25. Between 1975 and 2003, Canada is reported to have exported a total of 5 555 trophy items, of which 1 350 were exported to the EU15, accounting for 24% of the EU15 Member States' reported trophy item imports. The number of Brown Bear trophy items imported by EU15 Member States from Canada has varied over time, between four and 196 specimens a year. Since 1997, reported imports have decreased nearly every year from 71 to 26 in 2003 (**Table 13**). The majority of Canada's trophy item exports (3 976) went to the USA.

Although the vast majority of Canada's global trade consisted of exports, Canada also re-exported seven trophy items and imported 518 trophies. In addition, Canada (re-)exported 10 trophy items to the 10 new Member States.

Average annual exports to the EU15 for 1991-1993 were of 34 Brown Bear trophy items, which represents seven per cent of reported total Brown Bear mortality in Canada (which was reported to be 519 Brown Bears on average each year between 1991 and 1993).

Table 13

Number of Brown Bear trophy items reported as exported from Canada world-wide and to the EU15 (1977-2003).

	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
EU15	68	4	39	191	55	34	26	24	196	29	34	23	29	46
Total	73	16	114	319	144	150	157	163	365	219	265	164	174	209

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	32	29	41	37	51	55	71	67	47	51	30	15	26
Total	279	211	214	223	200	247	244	193	252	262	213	237	249

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

SRG Opinions

The situation of the Brown Bear in Canada was reviewed in **September 1997** (Doc. SRG3/6/3, 1997). In **November 1997**, the SRG formulated a Positive Opinion for imports of Brown Bear hunting trophies from Canada, judging that, according to the present state of information, sufficient data were available proving that the conditions of Art. 4(1)a)i) are met i.e. *that introduction into the EU would not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species* (Doc. SRG4/9/1, 1997). The information provided regarding Brown Bears in Canada was: a population status of 25 300 (1991), annual kill (legal and illegal) of approximately 3.3% of the population, the problem of females being over-represented in the kill has been solved (Doc. SRG4/9/2, 1997).

In **November 2001**, a paper was produced on Brown Bears in B.C., summarising concerns expressed by NGOs and some scientists about the practice and management of hunting in B.C., whilst noting this had become a controversial issue. The concerns expressed were related to the methods used to estimate population size, the fact that the sustainable kill rate (set under B.C. policy) seemed to have been exceeded almost every year and the possibility of kill ‘hotspots’ existing and going undetected (Doc. SRG21/4/5, 2001). The paper also noted the recent lifting of the BC moratorium and creation of an independent panel. Based on this paper and the uncertainty over population estimates, the SRG formulated a Negative Opinion for imports of Brown Bear hunting trophies from B.C. in November 2001.

In **April 2002**, following the submission of additional information from the B.C. Government (B. von Arx, *in litt.*, 2002), including a non-detriment finding for Brown Bears in B.C., the SRG changed its Negative Opinion to a Positive Opinion for hunting trophies from B.C.. This Positive Opinion was dependent on the results of the Final Report of the GBS Panel, such that it might be changed back to a Negative Opinion depending on the results.

In **March 2003**, the GBS Panel’s report ‘*Management of Grizzly Bears in British Columbia: a Review by an Independent Scientific Panel*’ was released (Peek *et al.*, 2003). The report makes 19 recommendations, aimed at “improving the Brown Bear management system as currently implemented in B.C.”. The recommendations are grouped in the following categories:

- A. estimation of grizzly bear numbers
- B. risk management in grizzly bear harvests
- C. administrative process for managing grizzly bears
- D. habitat issues related to grizzly bears
- E. research needs regarding grizzly bears

The GBS Panel’s report did not reveal any compelling evidence of over-harvest in the province as a whole or in any GBPU. However, the GBS Panel could not conclude that over-harvest was not occurring (Peek *et al.*, 2003). A

working group was then assigned the task of leading the implementation of the GBS Panel's recommendations, including the revision of the GBPU boundaries and of provincial population estimates and methods (Hamilton *et al.*, 2004). The GBS Panel's report was criticised in a report by the Environment Investigation Agency, Pro Wildlife and Raincoast Conservation Society which was provided to the SRG in **May 2003** (Doc. SRG26/4/8, 2003).

In **May 2003**, the SRG decided to maintain the Positive Opinion on the hunting trophies of Brown Bear from B.C. The decision was made subject to the provision that the SRG should receive credible evidence of progress with the implementation of the recommendations made by the GBS Panel in time for the 2004 hunting season, i.e. confirmation of the adjustments in the allowable hunt to ensure a reduction of human-caused mortality from six per cent to five per cent and confirmation of the implementation of other hunting-related recommendations, such as changes in administrative unit boundaries. In the absence of such information by 1 December 2003, the Positive Opinion would be reversed (Summary of Conclusions of SRG26, 2003).

In **July 2003**, the EU's Committee on Wildlife Trade (composed of EU Member States' Management Authorities) discussed the finding of the SRG regarding Brown Bear trophy trade for B.C., and drew particular attention to the GBS Panel's recommendation to create Bear Management Areas as one of the key measures where progress should be made (C. Bail, *in litt.*, 2003).

In **November 2003**, the SRG received an update from MWLAP on the progress made to respond to the Panel's recommendations (J. Murray, *in litt.*, 2003). Murray states that MWLAP will implement the GBS Panel's recommendations in categories A, B and C (listed above) that "deal directly with the management of grizzly bear harvest beginning with the spring 2004 hunting season". The recommendations in categories D and E (which includes a recommendation to establish Bear Management Areas) will be pursued through the revision of the provincial Grizzly Bear Conservation Strategy, which is expected to be completed in 2005 (J. Murray, *in litt.*, 2003).

In **January 2004**, the SRG formulated a Negative Opinion for imports of hunting trophies from B.C. based on lack of sufficient progress in implementing the GBS Panel's recommendations. For two-thirds of the GBS Panel's recommendations, the B.C. Government had only indicated that they intended to implement them but had not yet actually done so (Summary of Conclusions of SRG28, 2004). In February 2005, an import suspension was published in the Official Journal of the European Union for wild hunting trophies from B.C. (*Community Regulation (EC) No 252/2005* of 14 February 2005).

In **October 2005**, the SRG maintained its Negative Opinion for imports of hunting trophies from B.C.. While the SRG acknowledged that implementation of the management plan and appointment of Grizzly Bear Management Areas is a long-term issue, the EC decided to ask B.C. for a clearer timeframe and to seek further information from the independent Panel (Summary of Conclusions of SRG34, 2005).

Croatia

Population Status and Distribution

The Brown Bear in Croatia is part of the Alps-Dinaric-Pindos population, which totals about 2800 individuals and also spans Bosnia & Herzegovina, the Yugoslav Federation, Slovenia, Greece, FYR Macedonia, Albania, Austria and Italy (Swenson *et al.*, 2000).

Based on 1996 data, the population was estimated at 400 individuals in an area of 9800 km² and was considered to be stable (Swenson *et al.*, 2000). The 1999 data for Croatia were 500 bears in 10 200 km² and an increasing population and in 2005, the area occupied by bears had increased further to 11 800 km² (Dečak *et al.*, 2005). In 2005, the precise number of bears in Croatia is unknown (Dečak *et al.*, 2005) but is thought to range between 600 and 1000. The lower limit of this range (600) comes from the upper limit of the 1999 estimate, with the expected positive trend. The upper limit (1000) comes from the sum of hunting unit leaseholder's estimates (850 bears) plus

around 50 bears in the National Parks and at least 100 bears in areas where bears are not managed through hunting (Dečak *et al.*, 2005). The main threats to Brown Bears in Croatia are legal hunting and poaching (Huber, 1999).

Legislation and National Management Plan

Brown Bears are regarded as a game species in Croatia and as such, are listed under the Croatian Hunting Act (Official Gazette, 10/94, 29/99, 76/99, 14/01, 10/94, 29/99, 76/99, 14/01 and 4/02). However, the Brown Bear is also listed as a 'protected species' by the Law on Nature Protection (Official Gazette, 162/03) and is listed in the 2004 Red List of Endangered Flora and Fauna Species of Croatia (Dečak *et al.*, 2005). Bears are permanently protected in national parks, which make up 5.8% of the 11 800 km² of bear range (Dečak *et al.*, 2005). Bears cannot be hunted in the period from 16 May until 30 September. During the closed season, only sick or wounded bears may be shot. The Croatian management plan for Brown Bears suggests shortening the hunting season by 45 days (Dečak *et al.*, 2005).

Croatia has a reservation for the Brown Bear under the Bern Convention regarding certain means or methods of killing, capture, or other exploitation (Anon., 2002).

Hunting and Management

Croatia has had a management plan for Brown Bears since 2004 (Dečak *et al.*, 2004; Dečak *et al.*, 2005). Hunting of bears in Croatia is managed by forest enterprises for 80% and by hunting clubs for 20% of the bear range in the country (Huber, 1999).

According to the Expert Guidelines of the Ministry of Agriculture, Forestry and Water Management (of 25 June 1994), bear hunting is planned at the beginning of each hunting year with reference to the estimated population size, age and sex structure of the population and the defined management goals. To achieve this, hunting unit leaseholders are required to provide annual estimates of bear numbers (by sex and age structure). The population estimate is calculated by adding the estimates provided by hunting unit leaseholders, which are based on viewing, tracking and counting of bears during a hunting year in a hunting unit's forested areas. If a hunting unit leaseholder does not complete the planned hunt or exceeds the planned number of hunted bears, he must be sanctioned (Dečak *et al.*, 2005).

The annual harvest quota includes legal harvest by hunters, culling of nuisance bears, the removal of live bears from the population and also takes into account bear mortality caused by traffic, poaching and other anthropogenic causes (Dečak *et al.*, 2005). The planned hunting quota has increased from 87 bears in 2000 to 121 in 2002 (**Table 14**). The actual hunt, however, did not reach the quota in any of these years although it did increase over the three-year period. A hunt of 10 to 15% of the total estimated number of bears is planned for the future (Dečak *et al.*, 2005).

Based on data by Frković *et al.* (2000), a total known mortality (all sources) of 273 bears (or an average of 27.3 bears per year) was documented during the period from 1990 to 1999 in the Gorski Kotar and Hrvatsko Primorje regions (which comprise approximately 25% of the total bear range in Croatia), representing an annual mortality rate equivalent to 4.4% of the estimated population (**Table 14**). The most important cause of death in the Gorski Kotar and Hrvatsko Primorje regions (1990-1999) was shooting (60% of total known mortality in these two regions), with legal hunting accounting for 50% of total known mortality and poaching accounting for 10%. This was followed by traffic accidents (17%). For the whole of the country however, poaching represented 2% of total mortality for 2000-2002.

Table 14

Brown Bear mortality in Croatia due to legal hunting and poaching as well as total known mortality including hunting, poaching and other sources of mortality (1990-2003). For 2000-2003 the planned annual hunting quota is also given.

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Hunting	17	12	11	11	12	9	12	21	16	17	38	66	62
Poaching	3	4	4	4	1	1	3	3	0	3	0	1	2
Total known mortality	29	39	28	19	26	17	28	31	25	31	49	80	82
Planned quota											87	114	121

Source: Data for 1990-1999 from Frković *et al.* (2000). Data for 2000-2002 from Dečak *et al.* (2005). Data for 1990 to 1999 refer to the regions of Gorski Kotar and Hrvatsko Primorje whereas data for 2000-2002 are for the whole of Croatia.

Bear furs and bear skulls are treated as hunting trophies and regardless of the age of the bear or the expected trophy value, they have to be evaluated. For hunting tourism, the evaluation of the trophy is the basis for calculating the hunting fee to be paid. Bear trophies of the highest quality cannot be exported. Every bear fur and skull is to be individually marked. Marking tags, their distribution and method of application are to be determined by the competent ministry (Dečak *et al.*, 2005).

A study on the attitudes of the general public, foresters and hunting unit leaseholders towards Brown Bears was carried out in 2003 and found that all three groups had very positive attitudes towards bears (Dečak *et al.*, 2005). The Hunting Act regulates issues concerning compensation and the prevention of damage caused by game species. If damage occurs, the hunting unit leaseholder has to compensate for the damage caused by the bears in his hunting unit. The Hunting Act permits the hunting of game that has caused a lot of damage (Dečak *et al.*, 2005).

Dečak *et al.* (2005) conclude that the legal hunting of bears has not threatened the Croatian population. However, they also state that the current method of bear management in Croatia is not satisfactory because it is not well co-ordinated and there is a lack of control over bear management in some mountainous counties.

Trade

Croatia declared its independence from Yugoslavia in 1991 therefore prior to this date, no CITES trade records would have been reported for Croatia, as Croatia's trade was reported as part of Yugoslavia's. Croatia became a CITES Party in 2000. No exports of Brown Bear trophies were reported from Croatia before 1996. Croatia is reported to have exported a total of 37 trophies between 1996 and 2003, of which 31 were to the EU15 and five to the 10 new Member States. In no year did total exports exceed four trophies apart from 2002, when 22 were exported (**Table 15**). Between 1996 and 2001, Croatia exported between zero and seven per cent of hunted bears but in 2002 total bear exports made up 27% of the hunt. Croatia was not reported to import or re-export any trophies. Although the total bear mortality was similar in 2001 and 2002, the exports of trophy items were much higher in 2002 than in 2001 or any other year. It is likely that not only did the number of bears hunted by foreigners increase in 2002, but also that some bears shot in 2001 were partly exported in 2002 (after the trophies were processed) (D. Huber, *in litt.*, 2005).

Table 15

Number of Brown Bear trophy items reported as exported from Croatia world-wide and to the EU15 (1996-2003).

	1996	1997	1998	1999	2000	2001	2002	2003
EU15	0	0	0	2	3	3	20	3
Total	2	0	0	2	3	4	22	4

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

SRG Opinions

In September 2002, the SRG formulated a Positive Opinion for the import of Brown Bear trophies from Croatia for one year pending a management plan. This decision was based on information presented at the meeting which supported amongst other things that the population size is stable and that a management plan is being drafted.

A year later, in October 2003, the SRG formulated a Negative Opinion for Brown Bear from Croatia, based on the lack of progress in the preparation of the Croatian management plan. In July 2004, the management plan was circulated as well as other reports on bears in Croatia. The SRGs Negative Opinion was changed to a Positive Opinion in December 2004, following the confirmation by a representative of the European Commission of assertions made by Croatia (M. Stojanović and M. Mlakar, *in litt.*, 2004) that the Negative Opinion, which had initially been useful, had started to be counterproductive as people were becoming less good willed towards the species.

Estonia

Population Status and Distribution

The Brown Bear in Estonia is part of the Northeastern population, which totals about 37 500 individuals and also spans European Russia, Finland, Belarus, Norway and Latvia (Swenson *et al.*, 2000).

According to Swenson *et al.* (2000), Estonia has a large number of bears at relatively high densities and the number of bears is stable. However, according to census data, the Brown Bear population in Estonia increased from 230 to 820 bears between 1974 and 1992 but then decreased to 600 from 1992 to 1999 (Lõhmus, 2001). There is contradicting data on the population size. Monitoring results based on sample plots using track count and interviews with hunters in 1997-1998 set the population at 230-240 bears (Valdmann 2000) while official census (see below for more detail) in 1997-2000 set the population at 600 individuals (Lõhmus, 2001). According to Lõhmus (2001), the probable true population size lies between these values and can be estimated at 300-500. According to Swenson *et al.*, (2000) however, the population size lies between 440 and 600.

The major threats to bears in Estonia are over-hunting and disturbance. The creation of distribution barriers for bears deserves more attention (Lõhmus, 2001). In the 1979 edition of the Red Data Book of Estonia, the Brown Bear was included as a rare and vulnerable species (Lõhmus, 2001), but it is no longer included in the 1998 edition (Anon., 1998b).

Legislation and National Management Plan

The Brown Bear was classified as a protected species in Estonia between 1958 and 1980, then as a game species (Lõhmus, 2001) and is currently managed by the Ministry of Environment (Swenson *et al.*, 2000). The current legal status of large carnivores in Estonia is established by the *Law on Hunting Management* (Estonian Government Resolution No. 251 (1994); Confirmation of the List of Game (15 Oct. 1996)). In 2001, the Large Carnivore Control and Management Plan for Estonia, 2002-2011, which covers Wolf *Canis lupus*, Lynx *Lynx lynx* and Brown Bear, was published (Lõhmus, 2001).

Estonia applied for exclusion of all Estonian populations of large carnivores from EU Habitats Directive Annexes II and IV and inclusion in Annex V (Lõhmus, 2001).

Hunting and Management

Brown Bears are not linked to any economic damage and are hunted solely for sport. The State does not compensate damages caused by large carnivores, except in cases when the species is defined as a protected animal (Lõhmus, 2001). Hunting is regulated by special licences and yearly harvest quotas are calculated not to exceed five per cent of the estimated population size (Anon., 1997a). The Brown Bear has only been hunted in Estonia since the 1980s and there are not enough observations available to detect over-hunting (Lõhmus, 2001).

According to Swenson *et al.* (2000), monitoring, but not research or conservation programmes, was conducted in Estonia. The demographics (births, mortality, movements, population structure) of Estonian large carnivores (including bears) are not very well known. Population growth rate estimates are based on official census data, which is the only long-term data set on the number of large carnivores in Estonia. The official population estimate is calculated as the sum of all the abundance estimates gathered from hunting organisations, and is therefore mainly an estimate based on subjective impressions of population size rather than on measurements. Although the official census probably reflects trends in bear populations, it does not serve as a basis for objective abundance estimates and regional differences in abundance may occur due to inconsistent application of population estimation criteria (Lõhmus, 2001).

Hunting statistics are collected from hunters but insufficient detail on shot specimens is collected. Bears are observed directly by hunters and their distribution is mapped. A problem with this is that the population estimate may be affected by variations in hunting effort. Other research methods include recording and measuring of footprints and gathering data on litter size and size distribution of individuals. A key question posed in the Management Plan is whether, and to what extent, hunting statistics can be used to monitor the population (Lõhmus, 2001). According to Valdmann (2000), the official census is just a gross estimate that is not based on proper methods and is an over-estimate of the true population size, with part of the error being due to the small size of census (i.e. hunting) area.

In the 1990s, bears were hunted according to fixed proportional quotas varying between 4.4-6.7% of the official population estimate (Lõhmus, 2001). The hunting quota in 1999 was 37 bears (Linnell *et al.*, 2002). In 1996, 34 bears were killed legally (Swenson *et al.*, 2000) and in 1998 and 1999, the average annual kill was 34.5 according to hunting statistics (Lõhmus, 2001). The average annual hunting pressure increased from 4% in 1974-1992 to 5.5% in 1992-1999. There is very little known about illegal hunting but it probably has a weak impact on the bear population. One of the main reasons for illegal hunting of large carnivores in Estonia is for the trade in trophies and other animal products (Lõhmus, 2001).

Lõhmus (2001) considers that the population in Estonia is “undoubtedly endangered”, suggests a revision of hunting to remedy this and believes that an annual harvest quota for bears in Estonia should not exceed 20 individuals. In order to keep agricultural damage to an optimal low level, to maintain the possibility of hunting this species and to maintain the population at a sufficient size to fulfil its natural functions, Lõhmus (2001) recommends maintaining a Brown Bear population of approximately 500 individuals.

Hunting of Brown Bear is permitted by stalking method from 1 August to 30 September, and by stalking and dogs (except beagle) from 1-31 October on an individual permit basis. Hunting licenses have to be applied for in every case (Anon., 2001). A 15 000 EEK (EUR960) fine has been set by Estonian Government (Order No. 275, 25 July 1995) if bears are illegally killed, and this fine is tripled when a pregnant female is killed illegally (Lõhmus, 2001).

Between 1998-2000, the fee set by a trophy hunting agency to hunt a Brown Bear in Estonia varied between EUR2 100 and 2 800 (Hofer, 2002).

Trade

Prior to 1991, when the Soviet Union collapsed and Estonia became independent, Estonian trade was reported as part of the Soviet Union's trade. Estonia became a CITES Party in 1992. No exports from Estonia were reported in 1991-1993. Between 1994 and 2003, Estonia is reported to have exported 103 trophies, of which 94 were to the EU15 and nine to the nine other new EU Member States. The number of exported trophy items dropped after 2000 (Table 16). Using the harvest levels (based on hunting statistics) given by Lõhmus (2001), Estonia exported 29% of its harvested bears in 1996, 41% in 1998 and 52% in 1999. Estonia has imported 12 trophy items and has never been reported to re-export any trophies.

Table 16

Number of Brown Bear trophy items reported as exported from Estonia world-wide and to the EU15 (1994-2003).

	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	11	7	10	7	14	18	13	4	2	8
Total	11	8	10	7	14	18	18	5	4	8

Source: CITES Trade data.

SRG Opinions

In **October 1997**, the following information on Brown Bears in Estonia was provided to the SRG: Brown Bear population size of 500-600 individuals and an annual hunting quota said to be five per cent of the total population according to one source but 10% according to another source (Doc. SRG4/9/2, 1997). Because of this differing information, the SRG did not form an Opinion at SRG4 but contacted Estonia for clarification before formulating a Positive Opinion (Doc. SRG4/9/1, 1997) in **December 1997**. This Positive Opinion was removed upon accession to the EU in **May 2004**.

Romania

Population Status and Distribution

The Brown Bear in Romania is part of the Carpathian population, which also includes Brown Bears in the Czech Republic, Poland, Slovakia and the Ukraine, and totals about 8 100 individuals (Swenson *et al.*, 2000). Romania has the largest Brown Bear population in Europe outside the former Soviet Union (Servheen, 1989), with around 6 000 bears (Anon., 2005b). Romania is also said to have the highest densities of Brown Bears in Europe (Swenson *et al.*, 2000), with an average density of 90-220 bears/1 000 km² (Anon., 2005b).

Ninety-three per cent of bears in Romania occur in the mountains and the rest in the hills (Anon., 2005b). The Brown Bear occurs in the Carpathian Mountains (Servheen, 1989) with an estimated range of 69 000 km² in Romania, or 30% of Romania's area (Anon., 2005b). This population has increased from fewer than 860 animals in 1950 to its present size (Ionescu, 1999) and more than 4 000 km² have been reoccupied by bears in the 1970s and 1980s (Servheen, 1989). According to Servheen *et al.* (1999), the population is decreasing. However, based on data in Romania's management plan, the population appears to be increasing since 2000, but given developments that will affect bear habitat, it is thought that the population may start declining (Anon., 2005b).

Legislation and National Management Plan

The Brown Bear is a protected species as well as a game species in Romania (Anon., 2005b). Until the late 1970s, foreign hunters were allowed to hunt Brown Bears but during the 1980s, foreign hunters were no longer allowed to hunt in Romania (Anon., 2005b). According to *Ministerial Order no. 71* of 28 January 2005, the hunting season is from 15 September to 31 December (Anon., 2005b).

During 2002, an action plan regarding the management of some species of special hunting importance, including the Brown Bear, was established (Anon., 2005b). The first comprehensive document, which systematically offers fundamental guidelines for Brown Bear management in Romania, is the *Management and Action Plan for the Bear Population in Romania* (Anon., 2005b).

Hunting and Management

The Brown Bear population has been continuously monitored since 1952 and is monitored annually by specialists (Anon., 2005b). Each hunting area employs a professional gamekeeper who shares the responsibility for the collection of data with the evaluation commission (Romanian CITES Scientific Authority, *in litt.*, 2005). The current (2005) population estimate is based on footprints and measurements of the footprints, observation of bears from high stands, and counting of females with cubs. The number is expressed by sex and age structure. At the end of the spring, the hunting unit leaseholders are obliged to provide yearly estimates of bear numbers on their game management units. These estimations are correlated on large areas and the data are centralized and analysed at a regional and national level, and corrected for possible double-counting of bears that move between areas. There are around 1 000 people involved each year in these population estimates. As of 2005, representatives of interested NGOs will be invited to participate in the estimation of bear populations (Anon., 2005b).

According to the International Council for Game and Wildlife Conservation (CIC), Romania has one of the best managed and conserved Brown Bear populations in the world (Anon., 2005a) and according to FACE (Federation of Associations for Hunting and Conservation of the EU) “hunting in Romania (including by visiting hunters from EU Member States) is part of a careful species management” (G. de Turkheim and Dr. Y. Lecocq, *in litt.*, 2005). The current population is thought to be above the optimum and a limited harvesting quota is needed to control the level of damages caused by bears. The optimum number of bears, which would be sustained under natural conditions by the natural habitat and which would minimise socio-economic impact, is estimated to be around 4 000 (Anon., 2005b).

However, there are concerns by NGOs and others that these figures are not accurate, that quotas are too high and consequently that the population is being reduced dramatically, primarily by over-hunting (WWF DCP, *in press*; Okarma *et al.*, 2000). WWF Danube-Carpathian Programme has recently conducted an assessment of Brown Bear management in Romania, including of concerns from NGOs and experts as well as presenting the position of the government, and concluded that there is reason to be concerned about the census techniques used in Romania (WWF DCP, *in press*). Independent researchers and the media in Romania have expressed concern about the increasing threat hunting and poaching represent for the bear population in the Carpathians. This concern is partly due to the lack of scientific information on the status of the bear population, partly to the mistrust in the official data and the lack of transparency and accuracy of the information on hunting, since the early 1990s (WWF DCP, *in press*).

The defined management goals are to maintain the existing bear population at stable levels (Anon., 2005b). The annual population growth in Romania is thought to be 10-15% of the population size. Bear harvesting is planned according to the minimum size of this annual growth (10%), the estimated population size, the population structure and the structure of the harvest done in previous years. This percentage is flexible: a quota of 10% (or higher) can be used locally if the population is increasing too much and equally the quota may be suspended for a few years or in some areas if the population is declining. In practice, only around 50%-80% of the quota is used, such that, over the past five years, on average five per cent of the population was harvested. The harvest quota includes legal

harvesting as well as poaching, removal of problem bears, bear mortality caused by traffic and other anthropogenic causes, and the removal of live bears from the population. At a state level, the approved annual quota has been between two and eight per cent of the total estimated number of bears. Females and their young may not be shot (Anon., 2005b).

Carcass poisoning has almost disappeared as a cause of bear mortality and the mortality caused by road and railway traffic is not considerable but could increase in the future, as traffic increases in Romania. Bears are also poached via snares (Anon., 2005b).

In some areas, due to continuous damage caused by bears, the local people have negative reactions regarding bears. Forbidding legal hunting, especially in the case of “problem” bears, would generate a negative reaction among local people (Anon., 2005b). Romania was and is the only country in Europe with a substantial number of human injuries and even fatalities caused by encounters with bears. Between 1990 and 1999, 18 people were killed by bears and 101 injured in Romania. In addition, over 4 500 livestock were killed (sheep, cows, donkeys, horses, pigs and goats). However, in general the level of acceptance of this species by local people is high and the bear has by far the most positive image of any large carnivore in Romania (Anon., 2005b). The high level of human-bear conflicts in Romania is due to a lack of awareness and education projects and many cases of conflict come from drunken encounters of people with bears that have ventured into cities (E. Stanciu, *in litt.*, 2005). Measures are taken to try and reduce bear-related damage, including to reduce the number of bears in a hunting unit to a tolerable level. If damage is caused by bears despite these preventative measures, the hunting unit leaseholder must compensate for the damage caused within that unit. The compensation system is bureaucratic, subjective and not very efficient (Anon., 2005b).

In 2003/4 the harvest quota was for 658 Brown Bears and in 2004/5 this figure declined to 342 bears, of which 309 can be taken by foreign hunters (WWF DCP, *in press*). According to WWF DCP (*in press*), there is currently no official documentation or scientific study to prove that the legal harvest in Romania is done correctly and that the future of the population is not endangered. In addition, the European Action Plan concluded that hunting was causing population declines in Romania (Swenson *et al.*, 2000).

There are fewer than 20 recorded cases of poaching of bears per year. The level of poaching is thought not to endanger the population and could be considered as kept under control (Anon., 2005b). The hunting of Brown Bear without approval is punishable with imprisonment from one to two years or with a fine between ROL50 and 150 millions (approximately EUR1250 to 3750) and confiscation of equipment. The attempt to hunt a bear is also punishable, but the punishment is half that of an actual hunting offence (Anon., 2005b). However, according to WWF DCP (*in press*), neither the level of poaching nor its impact on the bear population in the Romanian Carpathians has yet been thoroughly assessed.

Between 1997 and 2001, Romania had an annual CITES export quota of 150 hunting trophies for Brown Bear. Between 2002 and 2005 the annual export quota was 200 trophies (hide and skull) apart from 2003 when the quota was of 210. In addition, in 2001 and 2002, Romania had annual CITES quotas of 20 000 kg carcasses (CITES, 2005). Bear furs and bear skulls are defined as hunting trophies and have to be valued (according to the International Council for Game and Wildlife Conservation guidelines), regardless of the age or the expected trophy value. The value of the trophy is the basis for calculating the hunting fee although the export of bear trophies of the highest quality is not permitted. The hunting unit leaseholder must keep a register of all Trophy Certificates issued (Anon., 2005b). Between 1998-2000, the fee set by a trophy hunting agency to kill a Brown Bear in Romania varied between EUR1700-8300 and for wounding a bear, EUR1400 was charged (Hofer, 2002).

Trade

Romania became a CITES Party in 1994. Based on CITES trade data, the first Brown Bear trophy exports from Romania were recorded in 1990 and between then and 2003, Romania exported 1130 trophy items world-wide, of which 974 were exported to EU15 Member States and six to the 10 new Member States. Exports to the EU15 have increased almost constantly – from 14 trophies in 1990 to 135 in 2003 (**Table 17**). In 1998, when Romania had an

export quota of 150 trophies (hides and skulls), exports were reported to total 153 skulls and skins (as well as 19 trophies). In other years the quotas were respected. Romania has never been reported to re-export Brown Bear trophy items but has reported importing three.

Table 17

Number of Brown Bear trophy items reported as exported from Romania to the EU15 as well as total exports, and the annual CITES export quotas for hunting trophies (1990-2003).

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Export Quota								150	150	150	150	150	200	210
EU15	14	19	0	0	41	63	23	74	165	78	120	112	124	135
Total	15	37	0	2	112	65	30	79	172	79	124	127	142	146

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK. CITES www.cites.org for quotas.

SRG Opinions

In **November 1997**, the SRG formed a Positive Opinion for hunting trophies from Romania based on information from Servheen (1989) that Romania had the largest population in Europe outside the Soviet Union and the population had been increasing since the 1950s (Doc. SRG3/6/3, 1997).

In **December 2004**, due to the apparent population decline in Romania (from 8000 to 6533 bears between 1987 and 1997) (Doc. SRG31/4/6, 2004) and the absence of clear information from Romania on the population status of bears in this country, the SRG changed the Positive Opinion to a Negative Opinion. As a result of the SRG's Negative Opinion, in 2005 the new Romanian government made the decision to stop hunting during the spring season, to only allow certain hunting methods for the autumn season, and to ban the hunting at bait from closed observation sites (WWF DCP, in press).

In **March 2005**, the representative of Romania gave a presentation on the management of the Brown Bear population in Romania to the SRG. The SRG recognised that the bear population in Romania was larger and more resilient than most other European populations and that hunting was an integral part of the management of the species. However, reservations were expressed regarding the accuracy of the figures quoted for the bear population, the method of establishment of the harvest quota and the imbalance between sexes in the hunt. The SRG stressed the need to see a detailed scientifically based management plan, that takes into account factors such as population size, threats, habitat, negative influence of various development projects, mitigation and compensation. The SRG decided to retain the Negative Opinion, but agreed to re-examine the issue on the basis of a full management plan for the species to be submitted to the SRG by Romania.

In **June 2005**, the *Management and Action Plan for the Bear Population in Romania* was presented to the SRG (Anon., 2005b). Although this management plan was welcome, some short falls were noted. After discussion, the SRG decided to maintain the Negative Opinion. It was agreed that Romania should provide more information at the next SRG meeting.

In **October 2005**, the representative of Romania gave a presentation on recent progress in management of the Brown Bear population in Romania to the SRG. The SRG recognised the efforts made by Romania and changed its Negative Opinion to a Positive one. The SRG encouraged Romania to continue with the implementation of its bear management plan and asked Romania to report back on its implementation in May/June 2006 and to consolidate all new information in an updated management plan (Summary of Conclusions of SRG34, 2005).

Russian Federation

Population Status and Distribution

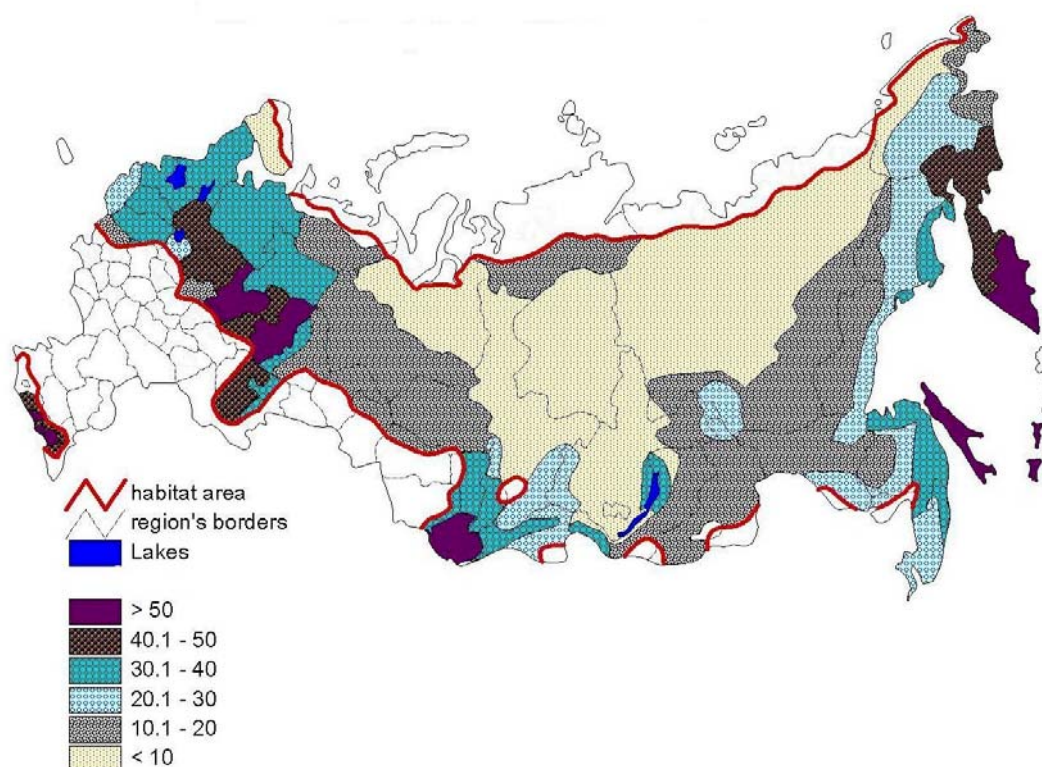
The Russian Federation has the largest Brown Bear population in the world, with a population size estimated at around 124 000 individuals (Chestin, 1999), of which the European Russian population consists of around 36 000 (Swenson *et al.*, 2000). The European Russia population of Brown Bears is part of the Northeastern population, which totals about 37 500 individuals and also spans Estonia, Finland, Belarus, Norway and Latvia (Swenson *et al.*, 2000). According to Gubar (pers. comm., 2005), the Russian Federation Brown Bear population increased between 1991-2005 and currently (2005), the population is over 160 000 individuals (**Table 18**). The population in European Russia is thought to be possibly increasing whereas in Central/Eastern Russia it is stable to decreasing (Swenson *et al.*, 1999). The Finland and Norway populations have received a net influx of dispersing bears from the high density Russian population (Swenson *et al.*, 2000).

The Brown Bear distribution in the Russian Federation stretches, almost continuously, from Vladivostok and the Kamchatka Peninsula in the Russian Far East to the Ural Mountains in the west and further north to the border with Finland (Servheen, 2001). The distribution and density of Brown Bears is illustrated in **Figure 5**.

The exact size of the range is not known but it is generally believed that the Brown Bear range covers around 70% of the Russian Federation, equivalent to around 12 million km² (M. Vaisfeld, *in litt.*, 2005).

Figure 5

The distribution and average Brown Bear density in the Russian Federation (2001-2003). The densities represent the number of bears per 1 000 km².



Source: M. Vaisfeld, 2004.

Legislation and National Management Plan

Bears are managed as a game species in the Russian Federation (Linnell *et al.*, 2002) and are currently listed as such under the *Federal Government Decree No. 859* of 30 July 1998 (A. Vaisman, *in litt.*, 2005b). There is a spring and an autumn hunting season in the Russia Federation. The spring hunting season starts at the end of the hibernation period and runs for one month. The autumn hunting season runs from August to 28 of February. The exact dates of the hunting seasons vary between administrative units of the country (oblasts, krays, and republics). Brown Bear hunting is prohibited in areas on the edge of the Brown Bear range in European Russia: Vladimir, Ivanovo, Ryazan, Kursk, Moscow, Orel, Tambov, Ulyanovsk, Bryansk, Kaluga oblasts, Mordovia, Chuvashia, Penza, Samara and Tatarstan and in the rest of the country, bears are hunted through a licence system (Chestin, 1999; Gubar, pers. comm., 2005).

The Russian Federation does not currently have a national Brown Bear management or action plan (A. Vaisman, *in litt.*, 2005a). However, for the Russian Far East, a brief guide for customs officers has been produced on bears (WWF Russia, 2005).

Hunting and Management

Linnell *et al.* (2002) could find no information on research, conservation programmes or bear-damage compensation schemes in the Russian Federation. A monitoring programme is needed to assess Russian bear population sizes and trends (Chestin, 1999).

The population estimates for the Russian Federation are based on the extrapolation of data obtained through census plots and visual counts by tracking and from airplanes (A. Vaisman, *in litt.*, 2005c). The *Guidelines for Estimation of the Number of Brown Bears in the Wild* describe the officially approved methods to estimate the number of bears (Gubar, 1990).

Hunting, including the killing of nuisance animals, and poaching are important threats to the Russian population (Anon., 1996; Chestin, 1999). The increased demand for bear parts (especially the bile) in Asian countries like the Republic of South Korea and China has led to a significant increase in poaching in Russia (Swenson *et al.*, 2000).

The demands of the local Departments of Game determine the annual hunting quota (Chestin, 1999). According to Linnell *et al.* (2002) the European part of the Russian Federation² has an annual harvest quota of around 1 600 and in 1998-99 the annual hunt was 1 455 bears. According to Gubar (pers. comm., 2005), the quota for the Russian Federation was around 7 000-9 000 between 1998 and 2005 and has increased slightly over time (**Table 18**).

The reported legal harvest peaked in 2003/4 with 4 358 Brown Bears killed (Gubar pers. comm., 2005) and has not exceeded the harvest quota in any hunting season between 1998/9 and 2004/5. The percentage of the population that was reported to be legally harvested has increased in every hunting season between 1998/8 and 2003/4 then decreased slightly, but this percentage has never exceeded 3.2% (**Table 18**).

² European Russia is defined as extending from the Ural Mountains and west.

Table 18

Number of Brown Bears in the Russian Federation (1998/9-2005/6). The harvest quota and actual reported legal harvest are also given for each season as well as the fraction of the population that this legal harvest represents. N.A. = not available

	1998/9	1999/000	2000/1	2001/2	2002/3	2003/4	2004/5	2005/6
Population size	122 620 ¹	121 890 ¹	125 930 ²	133 490 ²	135 700 ²	137 290 ³	143 230 ³	163 460 ³
Harvest quota ³	8 397	7 421	8 062	8 126	8 742	9 326	9 434	9 710
Reported legal harvest	2 730 ¹	3 118 ¹	3 310 ²	3 620 ²	3 793 ²	4 358 ³	3 738 ³	N.A.
% of population harvested	2.2	2.6	2.6	2.7	2.8	3.2	2.6	N.A.

Source: ¹=Lomanov (2000) ²=Lomanov (2004) ³=Gubar' pers. comm. (2005).

The price of a Brown Bear licence has varied over time but in 2004 the price was fixed at RUB6000 (EUR168) for Brown Bears of the Kamchatka population and RUB3000 (EUR84) for Brown Bears from any other population. The price is determined by the Taxes Code (Federal Law No. 148 of 20.08.2004) (A. Vaisman, *in litt.*, 2005c).

Between 1998-2000, the fee set by a trophy hunting agency to kill a Brown Bear in the Russian Federation varied between EUR2200 and 2800 and for wounding a bear, EUR 700 was charged (Hofer, 2002). In 2005, the price of a Brown Bear trophy sport hunting trip fluctuates between RUB75 000 (EUR2200) to RUB130 000 (EUR4400) (A. Vaisman, *in litt.*, 2005c).

Trade

The Russian Federation became a CITES Party in 1992. The Russian Federation is the third largest exporter of Brown Bear trophies to the EU15, accounting for 23% of trophy items (1295) imported by EU Member States. No exports from the Russian Federation were reported before 1992, since which time, annual levels of exports have varied between 77 and 209 (**Table 19**). Trophy item exports account for roughly 10% of the Russian Federation's reported legal harvest. The Russian Federation has never reported importing trophies

Table 19

Number of Brown Bear trophy items reported as exported from the Russian Federation world-wide and to the EU15 (1992-2003).

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	0	101	77	92	209	111	93	145	135	95	132	99
Total	2	272	262	179	349	263	289	394	435	444	366	352

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

SRG Opinions

The situation of the Brown Bear in the Russian Federation was reviewed in **September 1997** (Doc. SRG3/6/3, 1997) and the report recommended that the EU suspend trade from this country. In **November 1997**, the SRG formulated a Positive Opinion for imports of Brown Bear hunting trophies from the Russian Federation, judging that according to the present state of information, sufficient data were available proving that the conditions of Art. 4(1)a)i) are met i.e., *that introduction into the EU would not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species* (Doc. SRG4/9/1, 1997). The information provided was the following: population size of 95 400-101 400 individuals according to one reference and of 125 000 according to another (Doc. SRG4/9/2, 1997).

Slovakia

Population Status and Distribution

The Brown Bear in Slovakia is part of the Carpathian population, which also includes Brown Bears in the Czech Republic, Poland, Romania and the Ukraine, and totals about 8100 individuals (Swenson *et al.*, 2000).

After nearly being exterminated in the western Carpathian Mountains in the 1930s and 40s, bears have been recolonizing Slovakia (and Poland), where numbers have reached their highest level for over 100 years (Anon., 2004a). The current population estimate is of 700 Brown Bears, with the population increasing and covering an area of 3000 km² (Swenson *et al.*, 2000). According to the Slovak Nature Conservancy Council (*in litt.*, 2005) the populations estimate is 800 Brown Bears. Official figures (based on bi-annual estimates by members of each hunting club at bait sites and year-round observations) show a population size of 1200-1300 for 1996-1999, but this is thought to be overestimated, probably by about 700-800 individuals (Okarma *et al.*, 2000)³.

Numbers have increased rapidly during the last 10 years and the Brown Bear has become the most numerous large carnivore in Slovakia (Okarma *et al.*, 2000). It is thought that the natural annual rate of population growth is 10% of the population size (Slovak Nature Conservancy, *in litt.*, 2005). According to Hell & Find'o (1999), the optimum population size for Slovakia would be 400 Brown Bears. The greatest pressure on bears in Slovakia is thought to be intensive hunting (Hell & Find'o, 1999).

Legislation and National Management

In Slovakia, the bear is legally designated as a strictly protected species since 1965 and any illegal killing of a bear results in a fine (Hell & Find'o, 1999). Hunting is allowed only on the basis of permits granted jointly by the Ministry of Environment (on the basis of Act No. 543/2002 on Nature and Landscape Protection) and the Slovak Ministry of Agriculture (on the basis of the Act No. 23/1962). In addition, permission is given to the local hunting clubs which apply to hunt problem bears (Okarma *et al.*, 2000; Slovak Nature Conservancy, *in litt.*, 2005). Since 2002, the hunting season runs from 1 July to 15 December each year and in protected areas (National Parks and Natural Reserves), hunting is banned all year round (Slovakian CITES Scientific Authority, *in litt.*, 2005).

Slovakia does not currently have a management plan for Brown Bears (K. Kecse-Nagy, *in litt.*, 2005b). The Slovak Nature Conservancy is in the process of preparing a management plan for Brown Bears, which is intended to be approved in 2007 and realized from 2008 (Slovak Nature Conservancy, *in litt.*, 2005).

Slovakia has a reservation for the Brown Bear under the Bern Convention regarding certain means or methods of killing, capture, or other exploitation, with the justification that "*the present level of their [Brown Bears] population in the Slovak Republic permits the regulation of their numbers without detriment to their survival and to the functions of these species in the natural ecosystem*" (Anon., 2002).

Hunting and Management

According to Hell and Find'o (1999), game surveys are conducted by forest enterprises, forest administrations and also directly on individual hunting grounds through the mediation of state administration. According to the Slovak Nature Conservancy (*in litt.*, 2005), Brown Bear are monitored by employees of the Slovak Nature Conservancy and by scientific offices such as Universities and Research Institutes e.g. the Technical University in Zvolen, the Forest Research Institute in Zvolen and the Comenius University. Since 1994, the Brown Bear population estimate is based on one-night censuses of bears at registered feeding sites in the core area and the censuses are conducted twice a year (Jerina *et al.*, 2003).

³ Okarma *et al.* (2000) assess the accuracy of the official population estimates for all the Carpathian Mountains bear range states, and Slovakia is the only country that was not judged to have accurate official estimates.

Due to the large increase in population size, it was necessary to start hunting bears for management purposes, from 1962. The optimum harvest number was estimated to be equal to five per cent of the total population but the population nevertheless continued to grow (Okarma *et al.*, 2000).

Since 2002, a maximum of ten per cent of the population may be shot annually (Slovakian CITES Scientific Authority, *in litt.*, 2005) although in practice, under 40% of the legal hunting quota is used (see **Table 21**). According to the Slovak Ministry of Agriculture, 236 bears were killed between 1994 and 1998 (**Table 20**) (Okarma *et al.*, 2000). In no year was the total mortality (which includes the legal hunting, poaching and other sources of mortality) above 10% of the estimated population size of 800 (Slovak Nature Conservancy, *in litt.*, 2005). Every year there are around three registered illegally hunted individuals (Slovak Nature Conservancy, *in litt.* 2005). In the past, there was concern that the selectivity of trophy hunting (for larger, older males) was affecting the population structure. Consequently, the hunting of bears weighing more than 100 kg was banned (Slovakian CITES Scientific Authority, *in litt.*, 2005).

For every hunted individual, the age, sex, weight and length of paws is recorded (Slovak Nature Conservancy, *in litt.* 2005). According to Okarma *et al.* (2000), the existing system of bear management as well as the favourable public attitude make the future of this species secure.

Table 20

The number of Brown Bears known to be killed in Slovakia (1994-1998).

	1994	1995	1996	1997	1998
Bears killed	49	61	34	46	46

Source : Okarma *et al.* (2000).

Table 21

The level of legal hunting mortality for Brown Bear in Slovakia and the annual legal hunting quota (2000-2004).

	2000	2001	2002	2003	2004
Hunting quota	80	72	76	73	61
Actually hunted	29	26	25	11	22
% of quota	36.2	36.1	32.9	15.1	33.3

Source : Slovakian CITES Scientific Authority, *in litt.* (2005).

A large number of bears are hunted by foreigners who pay a fee, which helps compensate people for bear-related damage and a smaller number of bears are hunted by native hunters who pay a smaller fee (Hell & Find'o, 1999). Compensation for bear damage to beehives and domestic animals is paid for by the State (Hell & Find'o, 1999).

Between 1998 and 2000, the fee set by a trophy hunting agency to kill a Brown Bear in Slovakia varied between EUR1500 and 3100 and EUR 500 was charged for wounding a bear (Hofer, 2002).

Trade

In 1993, the Czech Republic and Slovakia were formed from what was Czechoslovakia, so prior to 1993, Slovakia's trade was reported as part of Czechoslovakia's. Slovakia became a CITES Party in 1993. According to CITES trade data, Slovakia was reported to have exported a total of 27 trophy items between 1992 and 2003, of which 17 were imported by EU15 Member States, nine by the Czech Republic and one by Switzerland. Between 1975 and 1992, no exports were reported from Slovakia. The reported annual exports of trophy items varied between zero and six for 1994-1998 (**Table 22**), which represented between 0 and 13% of killed bears being annually exported from Slovakia over this period.

Slovakia has been reported to import 21 trophy items and has not been reported to have re-exported any.

Table 22

Number of Brown Bear trophy items reported as exported from Slovakia world-wide and to the EU15 (1993-2003).

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	1	4	0	0	1	2	3	2	1	2	1
Total	1	4	0	1	1	6	3	3	2	4	2

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

SRG Opinions

A report circulated in **May 1998** at SRG8 stated that the Brown Bear population in Slovakia is increasing and expected to stabilise in the next few years (Anon., 1997c) and the SRG gave a Positive Opinion for Brown Bear hunting trophies from Slovakia.

In **May 2004**, the Positive Opinion was removed upon Slovakia's accession to the EU.

Slovenia

Population Status and Distribution

The Brown Bear in Slovenia is part of the Alps-Dinaric-Pindos population, which totals about 2800 individuals and also spans Albania, Austria, Bosnia and Herzegovina, Croatia, Greece, FYR Macedonia, Italy and the Yugoslav Federation (Swenson *et al.*, 2000).

The population of Brown Bears in Slovenia is considered to be stable (Swenson *et al.*, 1999). The absolute size of the current population, however, is not known precisely, and estimates vary. In 2002, for example, estimates given by the Ministry of Agriculture, Forestry and Food (MAFF)'s Department of Forestry varied between 450-500 and 731 (Prof. Dr. B. Kryštufek, *in litt.*, 2002). Official estimates for 2003 varied between 708 and 894 (Bolješič *et al.*, 2003) (**Table 23**). According to Huber & Adamič (1999), the population is estimated at 350-450 based on 1995 and 1996 nation-wide censuses. The area in which Brown Bears are permanently or occasionally present is approximately 9350 km², or 46% of the country's area (Bolješič *et al.*, 2003).

Legislation and National Management Plan

Brown Bears have been legally protected in Slovenia since 1945 (Bolješič *et al.*, 2003) and currently, Brown Bears are designated as a protected species under the *Decree on the Protection of Endangered Animal Species* (Official Gazette RS, No. 57/93). In the 1992 Red List of Endangered Mammals in Slovenia (Varstvo narave, 1992) the Brown Bear is classified as a vulnerable species (Bolješič *et al.*, 2003).

In 2001, the *Brown Bear Management Strategy in Slovenia* was drawn up and then adopted in 2002 by the Government. Based on this, the *Action Plan for Brown Bears in Slovenia* was created in 2002 and approved by the Government in 2003 (Bolješič *et al.*, 2003).

Hunting and Management

In 1998, the International Association for Bear Research and Management (IBA) visited Slovenia and concluded that the country has one of the most successful bear management programmes in Europe. Population increases allowed bears to spread to countries north of Slovenia, and to be used in reintroduction and augmentation programmes (H. Reynolds, *in litt.*, 2002). In the last decade, 13 bears have been exported for reintroduction programmes as well as one bear being exported to a rescue centre in Austria and one to a zoo in the Check Republic (Bolješič *et al.*, 2003).

In 2002, at a workshop for the Dinaric and Pindos area, it was established that, with the exception of three points, Slovenia is fulfilling the European Brown Bear Action Plan in its entirety (Bolješič *et al.*, 2003).

Bear population monitoring is based on the number of bears being identified via direct counts in relatively permanent places (e.g. feeding stations) and using daily monitoring indices in the Slovenia Forest Service professional game breeding areas in the central bear zone, encompassing an area of over 700 km². All hunting organisations that have bears permanently present in their hunting grounds take part, by counting bears on the same day (on a moonlit night), two to three times per year. Any sightings judged on the basis of the time they were recorded to be duplicates, are excluded (Bolješič *et al.*, 2003). Bolješič *et al.* (2003) maintain that on the counting nights, when the weather conditions are optimal, it is possible to sight and count up to 70% of the bear population at the feeding stations. The results for 2000-2003 are shown in **Table 23**.

Table 23

Results of the Brown Bear counts by hunting organisations and resulting population estimate (2000-2003).

Year (census number)	No. of counting locations	Total Brown Bears counted	Estimated population size
2000 (1)	206	228	580
2000 (2)	278	326	621
2000 (3)	315	432	696
2001 (1)	293	212	547
2001 (2)	290	285	566
2001 (3)	321	279	612
2002 (1)	349	344	731
2002 (2)	372	468	894
2003 (1)	378	291	708

Source: Slovenian Forestry Service (2003) in Bolješič *et al.* (2003).

The principles of reduction of the bear population are a part of the management strategy. Encroachments into the Brown Bear population are carried out on the basis of proposals submitted to a special commission within the MAFF Game Commission, which consists of independent experts, representatives of various stakeholders (hunters, livestock breeders and local communities) and government officials. The Department for Wildlife of the Slovenia Forest Service draws proposals for the harvest level at the end of each calendar year for the following year. Proposals for the harvest of Brown Bears are based on the Brown Bear Management Strategy (Bolješič *et al.*, 2003). The kill of every individual animal must be approved by the minister of MAFF, which ensures efficient control (A. Arih, *in litt.*, 2002).

The hunting season runs from 1 October to 30 April (Bolješič *et al.*, 2003). The sex and weight of harvested bears are monitored. The joint quota of bears to be harvested is divided according to weight categories (up to 100 kg, 100-150 kg, over 150 kg), with most of the planned harvest being in the first weight category, involving young,

immature animals, which tend to be most often involved in conflict situations. The harvest quota also factors in deaths from non-hunting sources (Bolješič *et al.*, 2003). Foreign hunter kills account for around 7.8% of the harvest (Anon., 2004b).

No information was found on exact harvest quotas but the annual harvest quotas are set around 5-10% of the population size (Anon., 2004b). Between 1994 and 2002, 511 Brown Bears were harvested (**Table 24 – part (b)**), of which 61% were male and 37% female (Jonozovič *et al.*, 2002). Overall, the number of harvested bears has increased over time (**Table 24**). Harvest levels pre 2001/2 were judged to be sustainable based on calculations and on the evidence of the population's gradual increase over time (H. Reynolds, *in litt.*, 2002).

The main source of Brown Bear mortality is hunting (see **Table 24 – part (b)**), although traffic collisions also cause a significant number of deaths (Berkhoudt, 1999). Accidental losses of bears (i.e. non-hunting deaths) appear to have increased in recent years (Jonozovič *et al.*, 2002) (see **Table 24 – part (b)**).

Table 24

Annual Brown Bear harvest (all sources of mortality recorded) per hunting season in Slovenia (1993-2003) according to two different sources (a) and (b).

	1993/4	1994/5	1995/6	1996/7	1997/8	1998/9	1999/2000	2000/1	2001/2	2002/3	Total
Total (a)	46	49	47	32	42	62	56	59	56	104	553
Legal hunt (b)	N.A.	36	29	31	33	43	29	42	35 ⁴	59 ⁵	337
Problem bears (b)	N.A.	2	2	9	7	7	12	3	7 ⁷	24 ⁸	73
Live captures (b)	N.A.	0	0	2	1	0	2	3	2 ⁷	3 ⁸	13
Other losses (b)	N.A.	4	1	5	8	12	13	11	12 ⁷	22 ⁸	88
Total (b)	N.A.	41	32	47	49	62	56	59	56⁷	108⁸	511

Source: (a) Prof. Dr. B. Kryštufek, *in litt.*, 2002. (b) Jonozovič *et al.*, 2002. N.A. = no figures available.

In October 2002, MAFF issued a permit for the harvest of 34 bears in addition to 70 already approved for that season (2002/2003), thereby doubling the number to be harvested compared to previous years (**Table 24 – part (a)**). This sudden increase provoked reactions from the Large Carnivore Initiative for Europe (LCIE) (Prof. L. Boitani, *in litt.*, 2002), IUCN/SSC Bear Specialist Group (B. McLellan, *in litt.*, 2002) and the IBA (H. Reynolds, *in litt.*, 2002), all of which wrote to MAFF to ask them to reconsider the quota for 2002/3. The IBA letter adds that the IBA does not believe that the population needs to be reduced and if this is the case locally, it must be done gradually (e.g. a maximum of a 10% harvest increase per annum).

In November 2002, the Slovenian Government provided clarifications regarding the 2002 Brown Bear harvest for the Bern Convention Standing Committee Meeting (Jonozovič *et al.*, 2002). According to this document, the harvest was set at this level for the following reasons:

- the Brown Bear population is not threatened either in the short or long-term and is increasing, with population estimate for 2002 of over 800 bears
- Damage and conflict with humans has increased so Brown Bears are seen more negatively
- The Brown Bear range is increasing
- Brown Bears are above the sustainability threshold and Slovenia cannot sustain a larger population
- The number of bears in the total harvest quota that are actually shot is falling, while the number of animals exceptionally hunted in conflict situations and the number of bears lost, particularly in road and rail accidents, is growing (see **Table 24 – part (b)**)

Overall, between 1995 and 2003, 26 bears were killed by foreign hunters, of which 24 were from an EU15 Member State (Bolješič *et al.*, 2003). Bears killed by foreign hunters represent five per cent of the bears killed (by any source of mortality) in Slovenia and in no year did this figure exceed 12% (**Table 25**). Bolješič *et al.* (2003) conclude that bear hunting in Slovenia is mainly aimed at regulating the size of the population according to the environment's capacity rather than being aimed at selling trophies to foreign hunters.

⁴ Values for the 2001 calendar year not for the 2001/2 hunting season.

⁵ Values for the 2002 calendar year not for the 2002/3 hunting season.

Table 25

Annual number of Brown Bears killed by any cause in Slovenia and the number of bears taken by foreign hunters (1995-2003).

	1995/6	1996/97	1997/8	1998/9	1999/2000	2000/1	2001	2002	2003*
All bears killed	32	47	49	62	56	59	56	116	41
Bears killed by foreigners	0	2	4	5	1	2	4	7	1

Source: Slovenian Forestry Service (2003) in (Bolješič *et al.*, 2003). * These values are only for the first 6 months of 2003.

In Slovenia, poaching and illegal trade in bears are generally scarce and most offences are related to violations concerning the age structure (weight) of animals that can be legally taken from the wild according to the annual quota (Bolješič *et al.*, 2003). Illegal killing of bears only made up nine per cent of offences related to bears (Bolješič *et al.*, 2003).

Problems connected with the coexistence of people and bears in Slovenia have started to increase, particularly in the late 1990s, and have escalated at the beginning of the 21st century. This is likely to lead to an increase in unlicensed killings. Slovenia has established an Intervention Group, which works with the police to respond to complaints from the public (Bolješič *et al.*, 2003). Compensation for damage by bears is paid out by MAFF and the number of cases of damage has increased from 1994 to 2002 (Table 26).

Table 26

The annual number of bear-related damage cases in Slovenia (1994-2002).

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Damage	7	57	45	81	105	138	139	123	374

Source: J. Kopač, *in litt.* (2002).

Slovenia has a reservation for the Brown Bear under the Bern Convention regarding certain means or methods of killing, capture, or other exploitation (Anon., 2002).

Trade

Slovenia obtained independence from Yugoslavia in 1991 and therefore prior to this, there are no CITES trade reports for Slovenia as Slovenia's trade was reported as part of Yugoslavia's. Slovenia became a Party to CITES in 2000. Between 1992, when the first Brown Bear trophy item exports were reported in the CITES trade database, and 2003, Slovenia exported 27 trophy items, of which 17 were exported to EU15 Member States (Table 27). Note that these figures do not match exactly those given by Bolješič *et al.* (2003) for the number of bears taken by foreign hunters. This is partly due to the time periods used, with CITES data being given for each calendar year whilst the data by Bolješič *et al.* (2003) cover hunting years instead of calendar years.

Table 27

Number of Brown Bear trophy items exported from Slovenia world-wide and to the EU15 (1992-2003).

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	0	1	4	0	0	1	2	3	2	1	2	1
Total	0	1	4	0	1	1	6	3	3	2	4	2

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

Slovenia has reported the import of two Brown Bear trophy items and has never been reported to re-export any.

SRG Opinions

In **February 2000**, the SRG formulated a Positive Opinion for the imports of Brown Bear hunting trophies from Slovenia based on information from Berkhoudt (1999) and comments by a Slovenian bear project leader, which stated that Slovenia's population is stable (1999). However, it was also highlighted that Slovenia had no sound population monitoring, that the harvest quota for 1999/2000 was around 10% of the population size instead of the recommended 4.5% and that Slovenia had no real management plan defining things such as a target size for the bear population (Doc. SRG16/4/4, 2000).

In **January 2003**, in light of the drastic increase of the harvest quota and of the unfavourable opinion on this quota expressed by LCIE, IUCN/SSC, IBA, and the Slovenian MA (Docs. SRG25/4/2/1 to SRG25/4/2/5), the SRG formed a Negative Opinion for hunting trophies from Slovenia.

In **April 2003**, the European Commission met with Slovenia and agreed on a number of steps in management. In **August 2003**, Slovenia produced a report on the conservation of and trade in bears in Slovenia to the SRG, which included a Slovenian Brown Bear Action Plan and Management Strategy (Bolješič *et al.*, 2003). However, in **October 2003**, a Slovenian scientist wrote to the European Commission expressing his concerns that none of the measures agreed upon at that April meeting had been started. In addition, the quota for 2003 was set at 80 bears, which was judged to be unsustainable and likely to be exceeded. Based on the large decrease in compensation for Brown Bear damage in 2003, it could be concluded that the bear population was decreasing and it was recommended that the SRG maintains the Negative Opinion (Doc. SRG27/4/1/Inf). The SRG decided to maintain its Negative Opinion until Slovenia's accession to the EU.

USA

Population Status and Distribution

Brown Bears in the USA are split up geographically between the populations occurring in Alaska and the five subpopulations in the lower 48 States (Idaho, Montana, Washington and Wyoming) (Servheen, 1990). These areas are not currently linked so the subpopulations are separate (Anon., 1998a). However, four of the ecosystems in the lower 48 States (Northern Continental Divide, Cabinet/Yaak, Northern Cascades and Selkirk) where Brown Bears exist border with Canada (Anon., 1998a). Brown Bears possibly exist in the San Juan Mountains, Colorado (Anon., 1998a), although there is no recent evidence of their presence there (Servheen, *in litt.*, 2005). The overall Brown Bear population in the USA is considered to be stable to increasing (Servheen *et al.*, 1999).

Alaska

Brown Bear habitat in Alaska covers 1.48 million km². There is no precise estimate of Brown Bear numbers in Alaska (Miller & Schoen, 1999). However, based on density values, biologists were asked to subjectively estimate minimum and maximum numbers of bears, which resulted in an estimate in 1993 of 31 700 bears in Alaska (with lower and upper limits of 25 000-39 100) (Miller, 1993). In most of Alaska, the populations were considered stable at that time (Miller, 1993) but concern has been expressed because Brown Bears in Alaska face many of the same threats and negative public opinion which led to the extirpation of Brown Bears in much of its historic North American range (Miller & Schoen, 1999).

Idaho, Montana, Washington, Wyoming

The Brown Bear subpopulations occur in Yellowstone (Wyoming, Montana, Idaho), Northern Continental Divide (NCD) (Montana), Cabinet/Yaak (Montana and Idaho), Selkirk Mountains (Idaho and Washington) and North Cascades (Washington). The total area of Brown Bear range across the five populations is 85 470 km², which represents only two per cent of what it was originally. Two of the populations show no range expansion whereas

three of them show a range expansion. The total population for these five subpopulations is between 1012 and 1083 (USFWS, 2003). The population figures for each of the subpopulations are shown in **Table 28**.

By 1997, the conservation status of the Brown Bear had improved compared to the status 20 years earlier (Servheen, 1999). However, individual populations differ in threat status. In 1991, The U.S. Fish and Wildlife Service (USFWS) determined that the North Cascade population warranted listing as *Endangered* and in 1999, both the Selkirk and Cabinet-Yaak populations warranted listing as *Endangered* (USFWS, 2003).

The Yellowstone Ecosystem has been the primary focus of Brown Bear recovery efforts to date and this has been considered a success by the USFWS. The Brown Bear population size and distribution have increased, with for example the number of adult females increasing from fewer than 30 in 1983 to over 100 in 2003 (USFWS, 2003). The population data set on the North Continental Divide Ecosystem (NCDE) are not nearly as complete as that in the Yellowstone and as a result, the population trend cannot be estimated in the NCDE (Anon., 1998a). The Northern Cascade Ecosystem has the capacity to support a self-sustaining population of Brown Bears, but currently only a “remnant” population remains, which is incapable of persisting without active recovery efforts (USFWS, 2003).

Table 28

Number of Brown Bears estimated to occur in the five different Brown Bear ecosystems in 2003 in the lower 48 States of the USA.

Brown Bear Ecosystem	Minimum number of bears
Yellowstone	550-600
Northern Continental Divide (NCD)	400+
Cabinet/Yaak	30-40
Selkirk	30-40
Northern Cascades	2-3

Source: USFWS (2003).

Legislation and National Management Plan

The Brown Bear in the lower 48 States, but not in Alaska, was federally listed as a *Threatened Species* in 1975 under the US Endangered Species Act (ESA). The ESA has as its objective the recovery of listed species such that they achieve self-sustaining populations in the wild that no longer need protection under the ESA (USFWS, 2003).

The Interagency Grizzly Bear Committee (IGBC) was created in 1983 with the mission to implement the Grizzly Bear Recovery Plan through interagency co-ordination of policy, management, planning, and research (Anon., 1998a). The 1983 Recovery Plan was updated in 1993 (USFWS, 1993). The Brown Bear is protected against unregulated killing as a game species in Montana and Wyoming and in Colorado, Idaho and Washington it is listed on the State threatened or endangered lists (USFWS, 1993). Violation of the provisions of the ESA, such as illegal killing of a bear, can result in a fine of USD50 000 and one year in prison for a criminal conviction and up to USD10 000 in civil penalties (USFWS, 1993). Since 1989, it is prohibited to kill Brown Bears in the lower 48 States apart from cases of self-defence or defence of others.

Under Alaskan State law (*Alaska Administrative Code 5AAC 92.990*) the Brown Bear is classified as “big game” and as such, may be legally killed by resident, non-resident, and subsistence hunters with the appropriate licenses and tags during specified seasons. In most of Alaska, hunters are not permitted to take a Brown Bear more frequently than once every four years. Hunters are not allowed to kill newborn or yearling cubs or female bears accompanied by cubs younger than two years old. In addition to sport hunting, Brown Bears may also be legally killed in defence of life or property (Miller & Schoen, 1999).

In Alaska there is a hunting season but in the lower 48 States hunting is banned and there has been no hunting season since 1989 (Servheen, *in litt.*, 2005).

The Rocky Mountains Grizzly Bear Co-ordination Committee was established as part of the B.C. Brown Bear management strategy. Its function is to co-ordinate management efforts between the two Canadian Provinces B.C. and Alberta, and the USA along the Rocky Mountains from Jasper National Park south to the southern end of the North Continental Divide Ecosystem (NCDE). Co-operative efforts are underway on mortality recording, information exchange, sharing of nuisance bear management approaches between the NCDE and Alberta (Anon., 1998a).

Hunting and Management

Alaska

Until 1990, the Alaska Government was almost exclusively responsible for managing Brown Bears in the State but since then, the US Federal Government has taken over management in about 62% of the State. This mixture of state and federal management authority has created both legal and administrative problems as well as complicating harvest management (Miller & Schoen, 1999), with the management system varying between management units (Servheen *et al.*, 2005).

In Alaska, the greatest source of adult Brown Bear mortality is legal and illegal killing by humans, for sports, subsistence, or killing of nuisance bears. Of these, trophy hunting is thought to be the most common source of mortality (Miller & Schoen, 1999). Legal sport hunting is closely and accurately monitored and seasons and bag limits are adjusted to maintain a sustainable harvest level. In some management areas, liberalized hunting regulations, aimed at reducing bear numbers (in order to allow moose populations to increase), have led to reductions in Brown Bear populations. Miller and Schoen (1999) consider that despite these bear reduction programmes being localised and not representing a threat to the species' survival, they are nevertheless a cause for concern.

The average number of Brown Bears legally hunted each year in Alaska has increased since the early 1960s (Table 29).

Table 29

Annual average number of Brown Bears legally hunted in Alaska over time periods between 1961-1994.

Time period	1961-1970	1971-1980	1981-1990	1991-1994
Number of bears	641	829	1 063	1 147

Source: Miller and Schoen (1999).

Miller (1990) estimated the maximum sustainable harvest of Alaskan Brown Bears at 5.7% of the total population (based on a model that did not include density-dependent effects). Annual levels of legally hunted Brown Bears between 1961 and 1994 are below four per cent of the current population size.

Idaho, Montana, Washington, Wyoming

Small population sizes and human-caused mortality have threatened Brown Bears in Idaho, Montana, Washington and Wyoming (Servheen, 1999).

Management of Brown Bears and their habitat is accomplished through an interagency co-operative effort to implement the Grizzly Bear Recovery Plan (USFWS, 1993). Three key parameters are monitored: the number of unduplicated females with cubs seen annually, the distribution of females with young or family groups and the annual number of known human-caused mortalities (USFWS, 1993). The methods used to estimate population sizes vary between ecosystems (Servheen, *in litt.*, 2005). In Yellowstone, for example, mark-recapture, radio-tracking, counts of females with cubs, aerial surveys and genetic analysis of hair to identify individuals are all conducted (Schwarz *et al.*, 2005). Monitoring is aimed at demonstrating the presence of a minimum population rather than estimating total or actual number of bears (USFWS, 1993).

The Grizzly Bear Recovery Plan (USFWS, 1993) states that for the NCDE, the human-caused mortality quota must not exceed four per cent of the population, with females accounting for less than 30%. Between December 1997 and March 1998, 21 bear mortalities were recorded across all five ecosystems. The female sub-quota was exceeded in the Yellowstone ecosystem in 1995, 1996 and 1997 and in the NCDE ecosystem in 1992, 1993 and 1997 (Anon., 1998a). The mortality threshold has also been exceeded in NCDE but the significance of this cannot be evaluated until there is adequate information on the population size (Anon., 2004c). In Yellowstone and NCDE, human-caused mortality in 1993 had dropped to sustainable or nearly sustainable levels (USFWS, 1993). Annual mortality of Brown Bears for two sub-populations is shown in **Table 30**.

Table 30

Total annual mortality of Brown Bear recorded in the North Continental Divide Ecosystem (NCDE) and in Yellowstone (1987-1997).

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
NCDE	11	9	12	14	5	15	5	6	12	10	12
Yellowstone	3	5	1	9	0	4	3	10	17	9	8

Source: Anon. (1998a).

Trade

CITES entered into force in the USA in 1975. As hunting has been prohibited in the lower 48 States since 1989, all trophy hunting and exports of trophies from the USA come from Alaska only. The USA are reported to have exported a total of 2115 trophy items between 1975 and 2003. The USA is the most important exporter of Brown Bear trophies to the EU15, with 1450 trophy items exported accounting for 27% of trophy items imported by EU15 Member States. This represents 69% of exported Brown Bear trophy item exports from the USA.

The USA is the largest importer of trophy items world-wide (**Table 5**), with a total of 6459 trophy items imported between 1975 and 2003. The USA re-exported a total of 155 trophy items over the same period.

Table 31

Number of Brown Bear trophy items reported as exported from the USA world-wide and to the EU15 (1976-2003).

	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
EU15	0	0	244	25	70	74	49	43	41	8	29	27	62	39
Total	1	0	252	26	76	84	60	52	47	13	38	39	69	52

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
EU15	61	47	177	47	30	30	53	49	69	39	34	41	41	21
Total	93	60	203	69	53	66	185	76	93	73	72	105	91	71

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

The EU15 is the largest importer of *U. arctos* trophies from the USA and reported trade levels from the USA to the EU15 Member States in recent years appear stable, varying between 21 and 70 specimens a year in the last 10 years (1994-2003) (**Table 31**).

SRG Opinions

The conservation status of and trade levels in Brown Bears in the USA was reviewed in **September 1997** (Doc. SRG3/6/3, 1997) and in **November 1997**, the SRG formulated a Positive Opinion for imports of Brown Bear hunting trophies from the USA, judging that according to the present state of information, sufficient data were available proving that the conditions of Art. 4(1)a)i) are met i.e. *that introduction into the EU would not have a harmful effect on the conservation status of the species or on the extent of the territory occupied by the relevant population of the species* (Doc. SRG4/9/1, 1997). The information provided includes information on population size, status, monitoring techniques and harvest level (Doc. SRG4/9/2, 1997).

SUMMARY AND REVIEW OF RESULTS

Measures of Brown Bear management in the selected range States

Management plan

Of the nine countries reviewed in this report, Canada (British Columbia, B.C.), Croatia, Estonia, Romania, Slovenia and the USA have a Brown Bear management plan (or 'recovery plan' in the case of the lower 48 states in the USA) (see Summary Table of Management in **Annex 4**).

The publication of the *Action Plan for the Conservation of the Brown Bear in Europe* (or European Action Plan, EAP) in 2000 appears to have stimulated European Brown Bear range States to produce national management plans, as all of the European range States which were reviewed and which have a management plan (Croatian, Estonian, Romanian and Slovenian), published their management plan after the EAP (2000). The Croatian and Slovenian national management plans refer specifically to the EAP and the Slovenian management plan seems to be based around the EAP, listing the points that are highlighted for Slovenia in the EAP.

Population data collection method

The quality and the type of data used to estimate the size of a population varies between countries (see **Annexes 3 and 4**) and thus the accuracy of the population estimates varies considerably. In Estonia, the population estimate is based on hunting statistics (Lõhmus, 2001), whereas in Croatia, Romania, Slovenia and Slovakia, the official population estimates are based on the sum of Brown Bear hunters' estimates in different hunting units. One-night censuses are conducted in Slovenia. These do not give precise figures on the size of a population, but do allow for the collection of important population parameters such as the share of females with cubs in a year, the proportion of yearling bears among the total of counted bears and the average litter size. These parameters can then be used in a modelling approach to calculate the size of the bear population (Jerina *et al.*, 2003). In B.C. (Canada) and in the USA on the other hand, methods based on expert opinion are used but these may be supplemented in some areas by methods such as mark-recapture and radio-tracking.

In B.C., Romania, Slovakia and Slovenia, the official population estimates have been criticised as inaccurate by national scientists and international conservation NGOs (B.C., Romania) or overestimates of the actual population size (Slovakia and Slovenia). As a consequence, in each of these countries there has also been concern at some point that the hunting quota was too high to be sustainable.

Level of management and regional co-operation

In the case of transboundary Brown Bear populations (which are shared between countries), international co-operation is needed between neighbouring countries to ensure the conservation of Brown Bears. Even though management must be implemented by national political entities, the concept of managing on a population level is often recommended (Swenson *et al.*, 2000). In the European countries reviewed in this report, Brown Bears are managed at the country level with little evidence of cross-border collaboration, with the exception the Balkan Bear Conservation Network (BBCN), which was established in 1996 and brings together specialists from the Southern Balkans (Anon., 1997b).

In North America on the other hand, management is conducted at the population level. In the lower 48 States of the USA, each individual population has a threat status and remains listed on the Endangered Species Act until its specific recovery criteria are met (USFWS, 1993). In B.C., management occurs not at the provincial level but for Grizzly Bear Population Units (GBPU). Austin & Wrenshall (2004) specifically state that mortality and harvest analyses for individual populations (or groups of populations) are more appropriate for detecting potential conservation issues than a provincial level harvest analysis, which would combine mortality data from GBPU's with different management regimes (e.g. one or two hunting seasons). There is also collaboration between Canada and the USA for Brown Bear management such as the Rocky Mountains Grizzly Bear Co-ordination Committee which aims to co-ordinate management efforts between two Canadian Provinces (B.C. and Alberta) and the USA.

Importance of sound hunting quotas

In order to manage adequately a bear population subject to hunting, it is important to set hunting quotas at a sustainable level, which requires accurate population data. To avoid setting the hunting quota too high, it is important to adjust the planned legal hunting quota by subtracting any proven accidental and illegal deaths such that the total mortality level is still sustainable. Accidental and/or illegal mortality is taken into account when setting the legal hunting quota in British Columbia, Croatia, Romania, Slovenia, and the USA (See **Annex 4**). It is also important to account for the level of unknown unreported mortality that will occur in any Brown Bear population. Quotas for total human-induced mortality must be developed as part of the overall level of sustainable mortality in any population.

As well as setting an overall hunting quota for a population, it is sometimes necessary to also have sub-quotas for age/sex categories. This is because one important biological concern with trophy hunting is that the selectivity of trophy hunting (hunting for large old males, which are usually the most sought-after and highly prized individuals) can have negative impacts on the population structure. Several countries have adopted management measures to reduce the effect of hunting on their bear population structure. In Slovakia, for example, the hunting of bears weighing more than 100 kg was banned following evidence that the population structure had changed (Hell & Find'o, 1999). In Slovenia, the quota of bears to be legally hunted is divided according to weight categories with only a small fraction of the quota being allocated to the heaviest individuals (Bolješić *et al.*, 2003). In Croatia, bear harvesting is planned at the beginning of each hunting year with reference to many factors including the age and sex structure of the population (Dečak *et al.*, 2005).

As well as protecting larger males from being hunted disproportionately, some countries (or provinces) e.g. Romania or B.C. prohibit hunting of females and/or their cubs. In Romania, females and their young may not be shot (Anon., 2005b). In Alaska, hunters are not allowed to kill newborn or yearling cubs or female bears accompanied by cubs younger than two years old (Miller & Schoen, 1999). In B.C. hunters are prohibited from killing Brown Bears under the age of two and adult females accompanied by young (Peek *et al.*, 2003). In addition, in B.C. there is a sub-quota for female mortality of maximum 30% of the total human-caused mortality for the population. Although this quota has been consistently exceeded in B.C. (1979-2003) (Austin *et al.*, 2004) i.e. over 30% of human-caused mortality consisted of females, the population structure did not appear to have been affected (Austin & Wrenshall, 2004). In some countries the percentage of females hunted has increased over time, such as in Croatia where the percentage of females shot increased from 23% of the annual harvest in 1946-1985 to 35% in 1986-1992 (Huber, 1999).

These examples illustrate both the importance of monitoring the sex and age of harvested specimens and of the population, to find out whether sub-quotas are being respected, whether certain population categories are being taken in high numbers and to assess whether the population's structure is changing. Currently, the age and sex of harvested bears is monitored in B.C., Croatia, Romania, Slovenia and the USA.

Human-bear conflicts and problem animals

In some countries, hunting of problem animals is specifically discussed and included in management practices. This is the case, for example, in B.C., where the legal hunting quota is divided between areas depending, amongst others, on the number of nuisance bears and the degree of bear-human conflicts (B.C. Government, 1999). In Slovenia, the hunting quota is divided into weight categories and the largest fraction of the quota comes from the smallest weight category (under 100 kg), involving young, immature animals, which tend to be most often involved in conflict situations. In addition, the planned hunting quota per hunting area takes into account areas where human-bear conflicts occur and prioritise these areas when allocating harvest quotas (Bolješić *et al.*, 2003). In Croatia, the Hunting Act permits game animals that have caused a lot of damage to be hunted (Dečak *et al.*, 2005) and in Bulgaria, hunting is forbidden apart from nuisance bears for which special permits can be granted (Bulgarian CITES Management Authority, *in litt.*, 2005). Similarly to Bulgaria, in the USA's lower 48 States hunting of bears is forbidden apart from in cases of self-defence or defence of others (Servheen, 1999).

Stakeholders' participation

To achieve successful Brown Bear management, favourable public opinion is important and experience from North America and Western Europe has shown that the more the needs and interests of people were considered in taking management decisions, the more successful the management was. Strategies like developing eco-tourism, or helping livestock raisers to reduce damage to livestock as much as possible, may not only help people to suffer less economic burden due to large carnivores but may also make them feel that the institutions take them into consideration and try to understand their needs (Anon., 2005). The idea of stakeholder involvement and addressing social concerns regarding bears is included in the EAP, the B.C. and Romanian management plans and the US recovery plan for the lower 48 States, whilst the Estonian and Slovenian management plans emphasise public awareness rising and public education rather than public involvement.

Hunting as a form of management

Hunting is widely used as a form of management of Brown Bears, e.g. in British Columbia (Canada), Croatia, Estonia, Romania, the Russian Federation, Slovakia, Slovenia and Alaska (USA), and there are numerous examples of countries in which bear populations subject to controlled hunting have been shown to increase. This was considered to be the case, for example, in Croatia, where the estimated bear population increased from below 100 in the 1950s to over 600 in 2004 (M. Stojanović and M. Mlakar, *in litt.*, 2004) and in Slovakia, where the estimated population is still increasing despite being hunted (Hell & Find'o, 1999). Hunting has also been seen as helping to maintain a natural fear of humans, or shyness, in bears and therefore as a tool in keeping bears away from inhabited areas and reducing the likelihood of bear-human conflict, something which is mentioned in the Estonian management plan (2001). Most countries agree that in the case of the Brown Bear, which many people see as a problem species, hunting bans may not be beneficial overall, as some bans have been shown to strengthen or create negative public opinion towards this species (Anon., 2005b). Banning hunting may also alienate government agencies and hunters such that they will have no incentive to invest in bears and protect them (G. de Turkheim, *in litt.*, 2005).

The generation of revenue from Brown Bear hunting seems to have played a role in Bulgaria, where efforts were made to increase the bear population to develop international hunting tourism, including the creation of bear breeding farms in 1968 and 1984 (Spasov & Spiridonov, 1999). In this case, the profits from trophy hunting seem to have acted as a strong incentive to augment the bear population. In other countries or provinces such as Slovenia and B.C., hunting is mainly aimed at regulating the population size according to the environment's capacity. Harvest levels are based on population size, aim to be sustainable and are not driven by export (Bolješić *et al.*, 2003; Doc. SRG21/4/5, 2001).

In both Romania and Croatia, the most valuable bear trophies, of the highest quality, cannot be exported (Anon., 2005b; Dečak *et al.*, 2005). In B.C., the percentage of bears killed by resident hunters has increased over time as the government has allocated a greater share of the harvest to residents over foreign hunters. In Romania, there has also

been a change in hunting policy regarding foreign hunters: in the 1970s, foreign hunters were allowed to take bears but during the 1980s they were no longer allowed to hunt bears (Anon., 2005b).

Trophy hunting can also have negative impacts on bear populations, by creating an incentive to poach animals, such as in Estonia where one of the main reasons for illegal hunting of large carnivores is for the trade in trophies and other animal products (Lõhmus, 2001). Another general problem with trophy hunting is that it may affect the population structure in a negative way (see previous sections).

SRG Opinions and Decisions

As of this writing, (December 2005), the SRG has a Negative Opinion for Brown Bear trophies from B.C., Canada. When the SRG gave a Negative Opinion for Brown Bear trophies from B.C., this was the first case of an SRG decision being taken for a region or province rather than a country. Compared to other countries reviewed in this report, B.C. had some of the most detailed information on management and harvest planning. It also responded positively to the majority of the SRG's requests and conditions (see **Annex 5**).

Looking back at past decisions for B.C., the basis for the first Negative Opinion in 2001 is not explained in the Summary of Conclusions of the SRG Meeting (SRG21). The SRG agreed with the recommendations made in Doc. SRG21/4/5 which was discussed at that meeting, to make a Negative Opinion, 'pending a final non-detriment finding by B.C. or the report from the panel of experts' (see **Annex 5**). It would help if the SRG stated the detailed basis for its decision in each Summary of Conclusions of its meetings. It further helps range States in answering the EU's concern when the European Commission brings forward as much detailed information on the SRG decision in its correspondence with the range States

Romania had, until recently (October 2005), a Negative Opinion and the case of Romania illustrates the importance not only of having a management plan but also of ensuring that it is implemented. Concerns by EU Member States regarding the degree of implementation of management measures in Romania led the SRG to maintain its Negative Opinion in June 2005 (SRG33), despite the production of a detailed management plan. At the following SRG meeting (SRG34) in October 2005, it is based on the progress in implementation of Romania's management plan, that the SRG decided to give Romania a Positive Opinion. Similarly, B.C.'s Negative Opinion was maintained in January 2004 because the SRG thought that B.C. had not shown enough progress in implementing the management recommendations of the Grizzly Bear Scientific Panel (**Annex 5**).

A general problem when comparing SRG decisions for different range States is the difference in the amount and quality of information provided by the various countries regarding population size, trends, status and management, and the rigor with which these were obtained. In some cases, countries that provide detailed information may find themselves undergoing further scrutiny of population monitoring techniques or level of implementation whereas countries with no management plan and with little information available about population status and management are given a Positive Opinion. This appears to be the case with Bulgaria (1997), Estonia (1997), the Russian Federation (1997) and Slovakia (1998), which have not provided as comprehensive information on Brown Bear management as the other countries reviewed in this report, yet have all had Positive Opinions issued and have not been discussed extensively in SRG meetings.

It would be useful if the SRG invited expert opinions such as the IUCN/SSC Bear Specialist Group or the IBA, in cases where the SRG receives widely conflicting reports regarding the status or management of bear populations in a certain country, as in the case of Romania or B.C..

CONCLUSIONS

Between 1975 and 2003, a total of 14 067 Brown Bear trophy items (defined as bodies, skins, skulls and trophies) were reported in international trade. Reported trade increased until 2001 and then decreased slightly. Canada was the largest (re-)exporter of Brown Bear trophy items, followed by the Russian Federation and the USA, which together account for 85% of global (re-)exports. The largest reported importer of Brown Bear trophy items was the USA, followed by the 25 EU Member States (EU25). Together, the USA and EU25 accounted for 87% of the global reported imports of Brown Bear trophy items.

In total, the 25 EU Member States were reported as importing 5625 Brown Bear trophy items, of which 97% were imported by EU15 Member States, with Germany being the largest EU25 importer. EU25 Member States imported trophy items primarily from the USA, Canada, the Russian Federation and Romania. These four range States accounted for 91% of EU25 imports.

EU25 Member States were reported as exporting a total of 287 Brown Bear trophy items, of which 61% were exported by the 10 new Member States. In addition, EU25 Member States re-exported 211 trophy items. The main purpose of trophy item imports by EU25 Member States was 'hunting', followed by 'trophy' and 'personal'. In addition, some wild-sourced trophies were reported to be imported for commercial purposes.

Between 1997 and 2005, the SRG has given five range States a Positive Opinion and four range States both Positive and Negative Opinions. For most range States reviewed, exported trophies accounted for only a small fraction of the annual bear hunt. Where the SRG has made a Negative Opinion, the basis for the Opinion is mostly related to concerns about the effectiveness of the management measures in place in the country in ensuring that the levels of harvest and export are non-detrimental.

Given the differences in the amount and detail of available information on Brown Bear status and management in different range States, it is very difficult to compare the management in any two countries. However, the amount and quality of data available on bears in any one country provides an indication of the quality of management in that country. For example, any country with no management plan and where little information on population status and trends is available is likely to have difficulties in establishing sustainable harvest quotas.

Of the nine countries reviewed, all had a national Brown Bear management plan apart from Bulgaria, the Russian Federation and Slovakia. The European countries that do have a management plan all developed it after the publication on the *Action Plan for the Conservation of Brown Bears (Ursus arctos) in Europe* (2000). Another factor that varied between the range States reviewed was the methodology used to estimate the population size of Brown Bears. In Estonia, the population estimate is based on hunting statistics (Lõhmus, 2001), whereas in Croatia, Romania, Slovenia and Slovakia, the official population estimates are based on the sum of Brown Bear hunters' estimates in different hunting units. Different approaches are taken in B.C. and in the USA, where population assessments are based upon expert opinion backed by mark-recapture and radio-tracking in some areas. The official population estimates in B.C., Romania, Slovakia and Slovenia have been criticised by national scientists and/or international conservation NGOs as being inaccurate or overestimates of the actual population size.

Based on the range States reviewed, in Europe Brown Bears are largely managed at the country level, with little evidence of management at the population level, or of cross-border collaboration between range States that share populations. In B.C. and the lower 48 States of the USA on the other hand, Brown Bear management is conducted at the (sub-)population level.

In order to monitor whether hunting is having an impact on the population structure, it is important to monitor the age and sex of both live bears and those that are hunted. Currently, the age and sex of hunted bears is monitored in B.C., Croatia, Romania, Slovenia and the USA. Due to concerns that hunting might affect the Brown Bear population structure, many of the range States reviewed have adopted measures aimed at preventing the

disproportionate taking of certain age/sex categories in the population. In Slovakia, bears over 150 kg may not be shot and in Slovenia, the sub-quota for the heaviest bears accounts for only a small fraction of the total annual harvest quota. In Romania, females and their young may not be shot. In B.C. and in the lower 48 States of the USA, there is a sub-quota setting the maximum female mortality to 30% of the total human-caused mortality for the population.

One way to tackle the problem of comparing countries with different amounts of information and different management regimes is to use a number of specific indicators of bear management in different range States, such as some of those included in the comparative table provided in **Annex 4**. These same indicators can serve as guidelines for what information managers should consider, for example, regulating hunting levels or recording the age and sex of hunted bears. However, this approach becomes problematic when the information provided by governments is judged by independent national scientists, or national or international bear organisations to be incomplete or inaccurate. In such cases, when conflicting evidence is produced, the opinion of an independent body such as the IUCN/SSC Bear Specialist Group or the International Bear Association may be useful.

Overall, the SRG's Negative Opinions have had some positive outcomes, for example, they may have facilitated the development of a Brown Bear management plan in Croatia and Romania. However, sufficient implementation of recommended management measures is equally important as the examples of Romania and B.C. demonstrate.

RECOMMENDATIONS

The recommendations from this report are the following:

Recommendations to the Scientific Review Group (SRG) and EU Member States

- The SRG should decide on the minimum set of population and management data needed in order to review a case to form an Opinion. The SRG should encourage range States to provide the most recent and scientific data available so that the SRG can make a justified judgement based on the amount and objectivity of the scientific data provided and on their analysis.
- The SRG should seek the opinion of expert groups, such as the IUCN/SSC Bear Specialist Group or the International Bear Association in cases where the SRG receives conflicting reports regarding the status or management of bear populations in a certain country.
- The SRG should provide more detailed information about the basis of, and the reasons behind, any Positive or Negative Opinion given and should provide range States with detailed guidelines on what type of information it requires to review any existing Opinion.
- Where appropriate, the SRG and EU Member States should explore the feasibility of providing financial and/or technical assistance to range States to assist them with data collection for population estimates, writing management plans and devising measures for sustainable management of bears.

Recommendations to range States

- Bulgaria, the Russian Federation and Slovakia should produce a management plan for Brown Bears, following the guidelines set out in the *Action Plan for the Conservation of the Brown Bear (Ursus arctos) in Europe*.
- When drawing up a management plan for transboundary Brown Bear populations, range States should consult with neighbouring countries with which they share a Brown Bear population.
- Range States should calculate their annual hunting levels based on sound biological data and the hunt should be flexible and vary as the population size varies. In order to establish sustainable hunting rates for their populations, range States should factor in accidental deaths, unknown unreported deaths and those due to poaching, and adjust their quotas annually based on census and mortality information.
- Range States should ensure that the bear harvest does not affect the population structure. To this effect, hunting quotas should be set for different age/sex classes of bears, based on the monitoring not only of the number of bears killed each year (legally, illegally and accidentally) but also of the sex and age of the bears.
- Range States should develop compensation schemes for bear damage, if they do not currently have these.
- Range States should only permit hunting of Brown Bear populations that are documented to be viable and where management measures are in place stating the population size targets and how hunting will be used to reach these targets.
- Range States and the wider scientific community should investigate the presence and status of the Brown Bear in Bhutan and Mexico, where Brown Bear presence is currently uncertain.

Recommendations to Non-Governmental Organisations and other institutions

- National and international Non-Governmental Organisations and institutions concerned with the status, management, use and trade of Brown Bears, as well as other relevant stakeholders, should assist range States in improving Brown Bear management with their expertise and experience, and where possible, with funding.

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ANNEX 2

The total number of trophy items (bodies, skins, skulls and trophies) reported as (re-)exported between 1975 and 2003 to the 25 European Union Member States by country of (re-)export.

Exporter	Imp Quantity
Austria	5
Bulgaria	41
Canada	1 357
China	16
Croatia	36
Czech Republic	9
Denmark	19
Estonia	101
Finland	5
Former Czechoslovakia	15
Former Soviet Union	53
Former Yugoslavia/Serbia & Montenegro	33
France	1
Georgia	22
Germany	13
Greenland	1
Hungary	3
Japan	3
Korea (Democratic People's Republic of)	54
Liechtenstein	1
Lithuania	3
Netherlands	1
Norway	8
Poland	2
Romania	974
Russia	1 389
Slovakia	26
Slovenia	5
Sweden	5
Switzerland	16
Turkey	1
UK	19
Unknown	17
USA	1 503
Zimbabwe	2

Source: CITES trade data compiled by UNEP-WCMC, Cambridge, UK.

ANNEX 3 A comparison of Brown Bear status in range States that have had an SRG Opinion.

Bulgaria	Canada (B.C.)	Croatia	Estonia	Romania	Russia	Slovakia	Slovenia	USA
Area of distribution 10 000 km ²	791 182 km ²	11 800 km ²	15 000	69 000 km ²	12 million km ²	3 000 km ²	9 350 km ²	Alaska ¹ 1.48 million km ² Lower 48 States 85 470 km ²
Population estimate 500	16 887 (Hamilton <i>et al.</i> , 2004)	600-1 000	-230-240 (Valdman, 2000) ¹ -600 (official estimate) ²	6 000	124 000	1 200-1 300 ²	708-894	Alaska 25 000-39 100 Lower 48 States 1 012-1 083
Method used to obtain above population estimate Unclear	Multiple regression, direct inventory and expert-based approach (Fuhr-Demarchi method)	Sum of hunting unit leaseholder's estimates plus estimate of bears outside hunting units	¹ Sample plots using track counts and interview with hunters (1997-8) ² sum of hunting association estimates	Sum of hunter's estimates, based on direct counts of bears and bear footprints	Unclear	Bi-annual estimates by members of hunting club on bait sites and year-round observations (1996-9).	Three surveys by hunters in 2003, data corrected for double-counting	Alaska: subjective estimates of biologists based on reference density values. Lower 48 States: method varies between ecosystems and includes radio-tracking and mark-recapture.
Population trend Two of four main populations are decreasing	Unknown	Stable-increasing	Stable or decreasing (1992-1999) depending on source	Decreasing or increasing depending on source	European Russia increasing, elsewhere stable or decreasing	Stable	Stable	Stable-increasing
National threat status ?	Special concern	Endangered	?	?	?	Vulnerable	Vulnerable	Threatened

¹ Brown Bear habitat rather than distribution

² However this official figure is thought to be overestimated probably by about 700-800 individuals (Okarma *et al.*, 2000).

ANNEX 4

A comparison of Brown Bear management in range States which have had an SRG Opinion. Where no information was found, this is represented by a ?

Bulgaria	Canada (B.C.)	Croatia	Estonia	Romania	Russia	Slovakia	Slovenia	USA
National action or management plan								
No	Yes	Yes	Yes	Yes	No	No	Yes	Yes
Population data collection method								
Direct counts	Multiple regression, direct inventory and expert-based approach (Fuhr-Demarchi method)	Direct observation	Direct observation of bears and footprints	1. Direct observation of bears and footprints 2. Counting of females with cubs	Census plots and visual counts by tracking and from airplanes	?	Direct observation	1. Radio-tracking 2. Counts of females with cubs 3. Genetic analysis of hair to identify individuals in some areas 4. Aerial surveys.
Hunting season								
Hunting not permitted	Spring (and autumn in some areas)	1 Oct-15 May	1 Aug-31 Oct	15 Sep-31 Dec	Spring and autumn	1 July – 15 Dec	1 Oct-30 Apr	Alaska: yes Lower 48 States: not since 1989.
Harvest quota								
0 apart from nuisance bears for which permits are delivered on an individual basis	Total mortality = 1-6% population with max. female mortality = 30%	-87 (2000) -121 (2002)	37 (1999)	-658 (2003/4) -342 (2004/5). -2-8% population	-1 455 ⁷ (1998-99) -3 793 (2002/3) -4 358 (2003/4) -3 738 (2004/5)	Under 10% population	5-10% of population	Alaska: system is complex and differs by management unit. Lower 48 States: Max. of 4% known human caused mortality with max. female mortality = 30% of total mortality

Bulgaria	Canada (B.C.)	Croatia	Estonia	Romania	Russia	Slovakia	Slovenia	USA
Recent trend in annual harvest								
Usually under 10 bears killed	No obvious trend (1997-2004)	Increase (2000-2002)	Stable (1996-1999)	?	Increase (1998/9-2003/4)	Slight decrease in legal hunting mortality (2000-2004)	Increase in 2002	Alaska: increase (1961-1994) NCDE ³ : no obvious trend (1987-1997) Yellowstone: increase (1987-2003)
Legal harvest based on sound biological data collected from the target population(s)								
?	Yes	Yes	No	Debated	?	Not clear	Yes	Yes
Monitor the age/sex of culled bears								
?	Yes	Not clear	Not clear	Not clear	?	Yes	Yes	Yes
Levels of annual poaching								
Around 20-30	-Poaching = 2% of total mortality (1978-2003) -No increase observed (1978-2003)	-Poaching = 10% of total mortality ⁴ (1990-1999) -1 bear per year in Croatia (2001-2003)	?	Under 20	?	Around 3	'Scarce'	?
Factor in illegal/accidental bear deaths to the sustainable harvest level								
?	Yes	Yes	Not stated	Yes	?	Yes	Yes	Yes
Voluntary annual export quotas reported to CITES								
No	No, but there is a quota for bears taken by foreign hunters	No	No	Annual CITES export quota of 200 trophies (2004 and 2005). Also a foreign hunter quota of 309 (2004/5)	No	No	No	No
Recent trend in global exports (1999-2003)								
Decrease	Slight decrease in exports ⁵	Stable apart from large and sudden increase in 2002.	Decrease	Increase	Slight decrease	Stable	Stable	No obvious trend

³ North Continental Divide Ecosystem

⁴ These data are only for the regions of Gorski Kotar and Hrvatsko Primorje

⁵ The data concern Canada's exports not specifically British Columbia's

ANNEX 5

History of SRG Opinion for Brown Bears, by country.

Country	Opinion	Date	Basis for Opinion	Condition	Consequence
Bulgaria	(+)	11/11/1997	Judged to satisfy 4(1)a)i) based on basic information on population status and harvest quota . Decision refers to Docs. SRG4/7/1 and SRG4/7/2.		
Canada	(-)*	15/01/2004	Progress in implementing recommendations judged to be insufficient - B.C. 'intends' to implement many measures but not done yet and the main recommendations of the Grizzly Bear Scientific Panel not yet implemented.		
	(+)* Main	22/05/2003	The Positive Opinion was reconsidered following the publication of the report of the Grizzly Bear Scientific Panel , and it was decided to maintain the Positive Opinion subject to specific conditions.	Implementation of the Panel's recommendations in time for the 2004 hunting season. By 1 Dec 2003, there should be a reduction in the allowable hunt necessary to ensure a reduction of human-caused mortality from 6% to 5% and there should be confirmation of the implementation of other harvest-related recommendations, such as changes in administrative unit boundaries.	
	(+)*	02/04/2002	Despite concerns about the population estimation methods, the SRG considered that the overall management in B.C. is very good .	Dependent on the results of the B.C. Bear Panel's report.	
	(-)*	29/11/2001	Based on concern about the methodologies used to estimate population size, the fact that the sustainable kill rate (set under B.C. policy) was exceeded and the possibility of kill 'hotspots' existing and going undetected.		
	(+)*	11/11/1997	Reviewed in September 1997 (no recommendation). In November 1997, judged to satisfy 4(1)a)i) based on basic information on population status and harvest quota . Decision refers to Docs. SRG4/7/1 and 4/7/2.		

Country	Opinion	Date	Basis for Opinion	Condition	Consequence
Croatia	(+)	13/12/2004	Plan finished and maintaining the (+) is likely to have negative impact on hunter and people's attitudes towards bears.		
	(-)	09/10/2003	Lack of progress in producing the management plan.		
	(+)	05/09/2002	Information that the population is stable and a management plan is in the pipeline.	For 1 year pending management plan.	
Estonia	+ Rem	01/05/2004	Accession to the EU		
Romania	(+)	15/12/1997	Based on information on population and on harvest		
	(+)	25/10/2005	Romania gave a presentation on recent progress in management. The SRG recognised the efforts made by Romania and changed its Negative Opinion to a Positive one. The SRG encouraged Romania to continue with the implementation of its bear management plan.	Romania is to report back on its implementation in May/June 2006 and to consolidate all new information in an updated management plan	
	(-)	13/06/2005	Romania presented its management plan. There was some concern that implementation measures undertaken to date are not sufficient and the Negative Opinion was maintained. Romania to present more information at next meeting.		
	(-) Main	15/03/2005	Romania presented information on bear management but reservations expressed regarding accuracy of data on bear population, method of setting harvest quota and sex imbalance in hunt. Need for a scientifically-based management plan was stressed.	Situation will be re-examined when Romania produces a management plan	Management and action plan produced.
	(-)	13/12/2004	Based on information on population decline and a lack of clear status information from Romania.	Romania stopped the spring season hunting and limited the harvest methods that can be used.	
	(+)	11/11/1997	Reviewed in September 1997 (no recommendation). In November 1997, judged to satisfy 4(1)a)i) based on basic information on population status and harvest quota. Decision refers to Docs. SRG4/7/1 and 4/7/2.		

Country	Opinion	Date	Basis for Opinion	Condition	Consequence
Russian Federation	(+)	11/11/1997	Reviewed in September 1997 (recommendation to suspend trade from Russia). In November 1997, judged to satisfy 4(1)a)i) based on basic information on population status and harvest quota . Decision refers to Docs. SRG4/7/1 and 4/7/2.		
Slovakia	(+) Rem	01/05/2004	Accession to the EU		
	(+)	13/05/1998	Information on population size increasing.		
Slovenia	(-) Rem	01/05/2004	Accession to the EU		
	(-) Main	9/10/2003	Information provided to the SRG that none of the measures agreed on by the European Commission and Slovenia in April 2003 on bear management have been implemented . 2003 harvest quota judged to be unsustainable and likely to be exceeded.		
	(-)	30/01/2003	Sudden and large increase in 2002 harvest quota . International bear organizations and the Slovenian Management Authority believe the 2002 quota is unsustainable and should be changed.		Meeting between Slovenia and European Commission in April 2003 to agree on measures for bear management.
	(+)	22/02/2000	Detailed information on population status and management which indicates a stable population (1999), no real management plan, no sound population monitoring, official population estimates double those of IUCN/SSC.		
USA	(+)	11/11/1997	Reviewed in September 1997 (no recommendation). In November 1997, judged to satisfy 4(1)a)i) based on basic information on population status and harvest quota . Decision refers to Docs. SRG4/7/1 and 4/7/2.		

Source: SRG documents. * These decisions are for British Columbia only. Rem = Removed, Main=Maintained

TRAFFIC, the wildlife trade monitoring network, works to ensure that trade in wild plants and animals is not a threat to the conservation of nature. It has offices covering most parts of the world and works in close co-operation with the Secretariat of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

For further information contact:

The Executive Director
TRAFFIC International
219a Huntingdon Road
Cambridge CB3 0DL
UK

Telephone: (44) 1223 277427

Fax: (44) 1223 277237

Email: traffic@trafficint.org

The Director

TRAFFIC Europe

Bd. Emile Jacqmain 90

B-1000 Brussels

Belgium

Telephone: (32) 2 343 8258

Fax: (32) 2 343 2565

Email: traffic@traffic-europe.com

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