

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES  
OF WILD FAUNA AND FLORA



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Tel Aviv (Israel), 30 August-3 September 2015

Interpretation and implementation of the Convention

Species trade and conservation

Periodic review of species included in Appendices I and II (Resolution Conf 14.8 (Rev CoP16))

PERIODIC REVIEW OF *PUMA CONCOLOR CORYI* AND *PUMA CONCOLOR COUGUAR*

1. This document has been prepared by Canada and the United States of America.<sup>1</sup>
2. Canada and the United States have prepared a Periodic Review of two Appendix I subspecies of *Puma*: *Puma concolor coryi* and *Puma concolor cougar*, as part of the review of the Felidae undertaken under Decision 13.93 (Rev. CoP16). These subspecies are found only in Canada and the United States, and have been listed on Appendix I since 1975. All other North American *Puma concolor* subspecies have been listed on Appendix II under the family Felidae since 1977.
3. Our review of these subspecies indicates that the transfer of these subspecies to Appendix II would be appropriate because there is no risk to these subspecies from trade. *Puma concolor cougar* is considered extinct, and *Puma concolor coryi*, endemic to the southeastern United States, is subject to intensive recovery actions, is strongly protected federally with stricter domestic trade restrictions than required under CITES, and there is virtually no trade. All other North American *Puma concolor* are strongly regulated and a transfer of two of the subspecies to Appendix II will not stimulate increased trade demand. With implementation of this proposal, *Puma concolor costaricensis*, which does not occur in North America and which is outside the scope of this proposal, would remain in Appendix I.
4. Canada and the United States seek the views of the Animals Committee on whether it would be appropriate to transfer *Puma concolor coryi* and *Puma concolor cougar* to Appendix II.

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<sup>1</sup> The geographical designations employed in this document do not imply the expression of any opinion whatsoever on the part of the CITES Secretariat (or the United Nations Environment Programme) concerning the legal status of any country, territory, or area, or concerning the delimitation of its frontiers or boundaries. The responsibility for the contents of the document rests exclusively with its author.

## PERIODIC REVIEW OF *PUMA CONCOLOR CORYI* AND *PUMA CONCOLOR COUGUAR*

### A. Proposal

This proposal is for the transfer of the North American endemic subspecies of cougar, *Puma concolor coryi* and *Puma concolor couguar*, from Appendix I to Appendix II based on the outcome of the Periodic Review of the Appendices for Felidae. The transfer would place the two subspecies in Appendix II under the listing of Felidae spp.

The transfer of these subspecies to Appendix II is in accordance with the Precautionary Measures in Annex 4 of CITES Resolution Conf. 9.24 (Rev. CoP16), which indicates that Parties should adopt measures that are proportionate to the risks to the species. There is no risk to these subspecies from trade because *Puma concolor couguar* is considered extinct, and *Puma concolor coryi*, endemic to the southeastern United States, is subject to intensive recovery actions, is strongly protected federally with stricter domestic trade restrictions than required under CITES, and there is virtually no trade

### B. Proponent

To be determined.

### C. Supporting statement

#### 1. Taxonomy

1.1 Class: Mammalia

1.2 Order: Carnivora

1.3 Family: Felidae

1.4 Genus, species or subspecies, including author and year: *Puma concolor* (Linnaeus, 1771)

Subspecies addressed in this proposal: *Puma concolor coryi* and *Puma concolor couguar*.

There is uncertainty regarding the traditional subspecies classification of *Puma concolor*. Recent genetic work suggests that most of traditionally-described subspecies are poorly differentiated (Culver et al. 2000), and the new proposed taxonomy has been adopted by the most recent version of Wilson and Reeder (3<sup>rd</sup> Edition, 2005) and IUCN (2008). However, this proposal uses the taxonomy that is used by CITES for the species, which includes the subspecies *coryi* and *couguar* from Wilson and Reeder (2<sup>nd</sup> Edition, 1993).

1.5 Scientific synonyms:

1.6 Common names: *Puma concolor couguar*

English: Eastern Cougar, Eastern Panther, Eastern Puma

French: Couguar; Couguar, Puma de l'est de l'Amérique du nord

Spanish: Puma del este de América del Norte; Puma oriental

*Puma concolor coryi*

English: Florida Cougar, Florida Panther, Florida Puma

French: Cougar de Floride; Puma de Floride

Spanish: León de Florida; Puma de Florida

1.7 Code numbers: The reference number of *Puma concolor* in the CITES Identification Manual is A-112.007.001.009

#### 2. Overview

*Puma concolor coryi* and *Puma concolor couguar* are Appendix I subspecies that have ranges (or former ranges) in eastern North America. *Puma concolor coryi* exists as a very small remnant population in southeastern North America, in the State of Florida in the United States (see sections 3-5). The subspecies is subject to intensive management and recovery actions, and trade in the subspecies has

been minimal, consisting of one shipment of scientific specimens in 2009 (see section 8). *Puma concolor couguar* is considered to have been extirpated from its range in eastern North America since the late 1800s (see sections 3- 5). The minimal trade records for this subspecies are either of old specimens for scientific research or are due to reporting errors (see section 6).

There is no trade demand for either of the subspecies (see section 6).

All other North American *Puma concolor* (various subspecies) are on Appendix II and occur in western or mid-western North America. All *Puma concolor* in Canada and the United States are strongly regulated by domestic measures, and a transfer of two of the subspecies to Appendix II will not stimulate increased trade demand (see sections 7 and 8). With this proposal, all cougars in North America will be listed in Appendix II under Felidae spp., and will conform to guidance on split-listing, which advises against having subspecies listed on separate Appendices (see section 11).

This proposal is consistent with other proposals that seek to transfer populations to Appendix II due to considerations such as intensive management, lack of trade, split-listing and range state support (see section 11).

### 3. Species characteristics

Sources of information for this section include Lindzey 1987; IUCN 1996; Scott 1998; IUCN 2008; USFWS 2008; USFWS 2011 and references therein, unless otherwise indicated

#### 3.1 Distribution

As a full species, *Puma concolor* is broadly distributed throughout western North America, Central America and South America. In total, the world-wide geographic range of *Puma concolor* is the largest of any terrestrial mammal in the Western Hemisphere.

There are two subspecies of cougar in North America that occur in CITES Appendix I. These are *Puma concolor coryi* and *Puma concolor couguar*. Both of these subspecies have ranges (or former ranges) in eastern North America.

*Puma concolor coryi* exist today in a small remnant population of cougars in southeastern North America, in the State of Florida in the United States. The subspecies occupies less than 5% of its former range (USFWS 2008).

*Puma concolor couguar* populations are considered to have been extinct by 1900. There are no known viable populations of *Puma concolor couguar*. Sightings and captures of cougars in eastern North America are extremely unlikely to be of *Puma concolor couguar* lineage (see section 4.2).

#### 3.2 Habitat

*Puma concolor* can thrive in an extremely wide range of habitats. Outside of eastern North America, the species is found in nearly every major habitat type of the Americas.

#### 3.3 Biological characteristics

*Puma concolor* are generalist predators. They prefer large ungulates such as deer but will prey on a variety of animals including insects, birds, mice and porcupine when they are available. There may be a requirement for a regular source of large prey items. In some portions of its range, the diet of *Puma concolor* will vary with season as different types of prey become abundant. *Puma concolor* are primarily nocturnal and crepuscular.

*Puma concolor* are polygynous with males maintaining large and overlapping ranges. Cougar may mate in any season, although there may be peak birth periods in parts of the range. Females may begin breeding as early as 18 months of age or as late as 2-3 years of age. Gestation is approximately 3 months, and the average litter is 2-3 kittens. Only females are involved in parenting and kittens disperse at 1.5-2 years of age. Males tend to disperse over greater distances than females. The life expectancy of an adult cougar is not well documented but may be 10-11 years or as much as 18 years

### 3.4 Morphological characteristics

Information is provided for *Puma concolor* and is generally applicable to both subspecies. *Puma concolor* is the largest species in the genus *Puma*. The body is elongate and slender, the head is small, the face is short and the neck and tail are long. The limbs are powerfully built, and the hind legs are larger than the forelegs. The ears are small, short and rounded. There is considerable variation in size and colour, with colours ranging from tawny gray, to red or brown, with lighter under parts. Males are larger than females, ranging from 53-67 kg (116-147 lbs) in weight and 202-231 cm (80-91 inches) in total body length. Females range from 34-48 kg (76-106 lbs) in weight and 184-202 cm (72-80 inches) in total body length.

Unique characteristics of *Puma concolor coryi* once included a whorl of hairs in the mid-dorsal region of the back, a crook in the end of the tail and white hairs in the neck and shoulder fur. These and other distinguishing features (including heart abnormalities and lower sperm motility) are considered to have resulted from extreme inbreeding. These characteristics have largely disappeared from the population since implementation of a genetic restoration program (USFWS 2008).

With regards to *Puma concolor cougar*, Goldman (1946) described the subspecies as being darker than other subspecies with distinguishing cranial features (e.g., narrower zygomatic breadth, flatter nasals), though his sample was based on only seven skulls and one skin. Other studies suggest that there is poor morphological differentiation of *Puma concolor cougar* from other subspecies (e.g., Lazell 1981).

### 3.5 Role of the species in its ecosystem

*Puma concolor* is a top-level predator within its range, competing with other predators such as the wolf for large ungulate prey, and the presence of a *Puma concolor* population can influence prey population size.

## 4. Status and trends

### 4.1 Habitat trends

The amount of available habitat for *Puma concolor* declined significantly due to settlement of North America over 200 years ago (roads, deforestation, cities; Scott 1998). Habitat availability within the range of *Puma concolor coryi* continues to decrease and become more fragmented (USFWS 2008). There remains suitable habitat within parts of the former range of *Puma concolor cougar*, primarily in the northern parts of the range.

### 4.2 Population size

The *Puma concolor coryi* population has been increasing since the implementation of a genetic restoration program in 1995; at that time there were only approximately 20-30 individuals. The population size of *Puma concolor coryi* was estimated at 100-120 in 2007 (USFWS 2008), and it is currently estimated at 100-160 individuals.

*Puma concolor cougar* is considered extinct (USFWS 2011; IUCN 2008). Even when originally described as a subspecies in 1946, *Puma concolor cougar* was considered to have been extinct for "many years" (Young and Goldman 1946). The recommended classification of the species as a result of a 5-year review in the United States is "extinct" (USFWS 2011). In Canada, the species is considered "Data deficient" because of taxonomic uncertainties (whether the subspecies actually exists) and insufficient data to assign a status. The background status report for this status assessment indicates that there is no objective evidence for the continuous presence of the subspecies' genome over the last century and that it may be extirpated (Scott 1998).

There are continued reports of "cougar" sightings and captures within the range of the former *Puma concolor cougar* both in the United States and in Canada. Both Scott (1998) and USFWS (2011) contain extensive analysis of sighting and capture data. Sightings are often of housecats, dogs, bobcats, Canada lynx, foxes, coyotes, fishers, deer and other wildlife, or even deliberate hoaxes. When it has been possible to confirm genetic origins of cougars, they can be traced to North American (western or southern North America), Central American, or South American origins (Lang et al. 2013; USFWS 2011; Scott 1998). It is thought that many sightings are of escaped or released

exotic pets, but cougars also may have migrated into and even established breeding populations into the area (see section 4.5).

For *Puma concolor* in the western portions of the United States and Canada, Danz (1999) estimated there were at least 30,000 cougars in the United States and another 5,000 in Canada based on figures reported by State and provincial wildlife officials. More recent estimates for Canada, based on estimates from provincial wildlife officials, indicate that there are between 7,000-10,000 individuals in Canada (Environment Canada 2015). There are established breeding populations in the three westernmost provinces of Canada and at least 14 States in the western United States.

IUCN assessed *Puma concolor* as a whole species, with a status of Least Concern (IUCN 2008).

#### 4.3 Population structure

The following is a summary of typical population structures for *Puma concolor*, which would be generally applicable to both *Puma concolor coryi* and *Puma concolor cougar*.

*Puma concolor* is a mostly solitary animal, except for mothers raising cubs. The social system of *Puma concolor* is based on land tenure, with only resident adults tending to breed. *Puma concolor* are polygamous, with the male range being larger, often overlapping the range of several females. As a result, resident females tend to outnumber resident males in a population. Those cougar without territory are considered transients and, although sexually mature, do not tend to breed until they find their own territory. Males tend to disperse farther than females and are the individuals most likely to stray into populated areas or areas where the species is not permanently established. Immigration of young cats is a major factor in the expansion into new territories (Lindzey 1987).

#### 4.4 Population trends

*Puma concolor coryi* was reduced to a population size of 12-20 individuals (excluding kittens) in the early 1970s from its former range throughout the southeastern United States (USFWS 2008). Since this time, population numbers have increased to 100-160 individuals but there are indications that the population might be at or approaching carrying capacity due to the limited availability of suitable habitat in southwest Florida (personal communication, Dawn Jennings 2014).

*Puma concolor cougar* declined through the 1800s, to almost certain extinction.

In western North America, *Puma concolor* populations (various subspecies) were reduced by the 1900s but had begun to recover by the 1950s with the advent of modern wildlife management and the discontinuation of bounties (Lindzey 1987). Canadian provinces and States in the western United States with breeding populations report stable or increasing populations

#### 4.5 Geographic trends

According to Lindzey (1987), *Puma concolor* was widely distributed across North America in the 1600s with a range estimated to be 8,900,000 km<sup>2</sup>. By 1900, *Puma concolor* were believed to be extirpated from eastern North America except for a small population in southern Florida, and by 1983, the total North American range was estimated to be 3,983,000 km<sup>2</sup>, which is 45% of the historical range. Populations are located in western Canada, the western United States, and south Florida.

As the population of *Puma concolor coryi* has steadily increased, its range in terms of area of occurrence has increased. Some individuals are expanding into suburban areas and some transient males have moved northward, seeking additional habitat. Currently, the availability of additional suitable habitat for *Puma concolor coryi* is limited, and so facilitated movement of individuals may be necessary to allow this subspecies to continue to expand its range (personal communication, Dawn Jennings 2014).

There is evidence of re-colonization of *Puma concolor* into the mid-west of the continent, and this trend seems likely to continue east-ward into the former range of *Puma concolor cougar* (e.g., Scott 1998; Rosatte 2011; USFWS 2011; Larue et al. 2012; Lang et al. 2013). Colonists from the west or south would not be classified as being the subspecies *Puma concolor cougar* or *Puma concolor coryi*.

## 5. Threats

Historically, *Puma concolor cougar* and *Puma concolor coryi* were hunted and trapped under bounties, as they were considered to be a threat to humans and livestock and a competitor for game. In the last century there was also unrestricted harvest and intentional killing of a primary prey source for *Puma concolor*, white-tailed deer (*Odocoileus virginianus*), which had a substantial negative effect on population sizes of both predator and prey (USFWS 2011). White-tailed deer were nearly eradicated from most of their range in the east. Habitat also was destroyed through human settlement activities, including deforestation, road construction and development of urban areas (Scott 1998; USFWS 2011). The habitat loss reduced the population size of the cougar directly, and also reduced the population size of white-tailed deer (USFWS 2010).

Currently, the limiting factors for *Puma concolor coryi* are habitat availability, prey availability, and lack of human tolerance. The greatest threat to the subspecies' survival is habitat loss, degradation, and fragmentation, while lack of human tolerance threatens the recovery of *Puma concolor coryi*, and mortality due to collisions with vehicles threatens potential population expansion (USFWS 2008). Road kills are the principal cause of mortality for *Puma concolor coryi*, and heavily travelled roads are a major barrier to their movements and dispersal (Sunquist and Sunquist 2002 as cited in IUCN 2008). Because *Puma concolor coryi* exists as a single isolated population, it is extremely vulnerable to extinction from a single catastrophic event such as a disease outbreak (USFWS 2008).

At the level of species, potential threats to *Puma concolor* (in western North America) include habitat loss and fragmentation, lack of adequate prey base, and persecution by humans (due to threats to humans and livestock; IUCN 2008). However, these are not perceived to be significant threats in Canada, and in the United States, the species is managed at the State level to address concerns and to maintain secure populations.

## 6. Utilization and trade

### 6.1 National utilization

There is no national use of *Puma concolor coryi* or *Puma concolor cougar* with the exception of some museum specimens for display or scientific research.

Both subspecies were historically hunted because they were considered a threat to humans, livestock and to the wild food sources for humans (e.g., deer).

In many western provinces and States, the species *Puma concolor* is regulated as a big game species for recreational hunting, but harvest is prohibited in some States and provinces in both countries. When harvest occurs, it serves purposes of both tourism/recreation and for management of prey species such as deer. Cougar are also used by zoos, with the majority of these specimens being of non-wild origin

### 6.2 Legal trade

#### *Puma concolor coryi*

There is one verified instance of trade in wild-sourced *Puma concolor coryi* in the last several decades: in 2009, two museum specimens (bone) were exported in one shipment to Germany for scientific research. The other records of trade recorded for *Puma concolor coryi* in the CITES trade database maintained by the United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC) are either confirmed errors or likely errors in reporting. All trade records are summarized in Table 1.

The proposed amendment of the appendices to transfer the subspecies *P. c. coryi* to Appendix II will not change the trade levels or the nature of the trade. It will not stimulate commercial trade, nor is it expected to stimulate trade in cougars elsewhere (See section 7, Legal Instruments).

#### *Puma concolor cougar*

There are two verified instances of trade in wild-sourced *Puma concolor cougar* in the last several decades: a scientific specimen from 1935 was traded between Canada and the United States for

genetic research in 1999 and 2001, and in 2009, museum specimens (bone) of Canada and U.S.-origin animals were exported to Germany for scientific research. The other records of wild trade of *Puma concolor cougar* in the UNEP-WCMC CITES trade database are verified errors or likely errors in reporting. All trade records are summarized in Table 2.

The proposed amendment of the appendices to transfer the extinct subspecies *P. c. concolor* to Appendix II will not change the trade levels or the nature of the trade. It will not stimulate commercial trade, nor is it expected to stimulate trade in cougars elsewhere (*Puma concolor*; See section 7, Legal Instruments).

### 6.3 Parts and derivatives in trade

There has only been one verified record of trade in parts or derivatives of *Puma concolor coryi*. In 2009, two bone specimens were exported in one shipment from the United States to Germany for scientific research.

*Puma concolor cougar* is traded rarely for scientific research. There are about 26 historic specimens labelled as *P. concolor cougar* that exist today (mounts, skulls and skins; J. Cardoza, Massachusetts Department of Fish and Wildlife in Bolgiano and Roberts 2005 as cited in USFWS 2011).

Appendix II *Puma concolor* in the rest of its range in North America (western North America) is most commonly traded as hunting trophies (skins and taxidermy mounts). Additionally, teeth are collected through compulsory inspections of hunting trophies and are exported from Canada to a laboratory in the United States to monitor harvest demographics. Cougar is not popular in the fur trade and there is no significant commercial market.

### 6.4 Illegal trade

To our knowledge, there is no illegal trade in *Puma concolor coryi*. The United States reported the seizure of one claw of *Puma concolor cougar* from Mexico in 2008, due to the failure of the importer to declare the shipment to the U.S. Fish and Wildlife Service in violation of the Lacey Act (16 USC 3372). The subspecies recorded, however, is most likely in error. The specimen was not verified as to whether it actually was *Puma concolor cougar*. The origin of the specimen was reported as unknown.

### 6.5 Actual or potential trade impacts

There are no actual or anticipated impacts of trade on the subspecies as a result of the amendments outlined in this proposal. Additionally, there are no actual or potential trade impacts to the Appendix II *Puma concolor* in the western portions of North America.

## 7. Legal instruments

### 7.1 National

#### *Puma concolor coryi*

*Puma concolor coryi* is federally listed as endangered under the U.S. Endangered Species Act of 1973, as amended (ESA; 16 U.S.C. 1531 et seq.) and is on the State endangered lists for Florida, Georgia, Louisiana, and Mississippi (USFWS 2008). The ESA prohibits certain activities with listed species, with some exceptions – without a permit or authorization, it is unlawful for any person subject to the jurisdiction of the United States to do the following with a listed species:

- Take (meaning to harm, harass, pursue, hunt, shoot, wound, kill, trap, capture or collect, or attempt to engage in any such conduct) within the United States and its territorial seas or upon the high seas;
- Deliver, receive, carry, transport or ship in interstate or foreign commerce in the course of a commercial activity;
- Sell or offer for sale in interstate or foreign commerce;

- Import or export; or
- Possess, ship, deliver, carry, transport, sell or receive unlawfully taken wildlife.

It would also be a violation of the ESA to attempt to commit any prohibited activity or to get someone else to commit any prohibited activity.

#### *Puma concolor cougar*

*Puma concolor cougar* is federally listed as endangered under the ESA; therefore, in the United States, the subspecies is subject to the same ESA prohibitions as those listed above for *P. concolor coryi*. The U.S. Fish and Wildlife Service's most recent review of this subspecies recommends delisting the subspecies based upon extinction (USFWS 2011).

In the United States, protections also exist for the subspecies at the State level. The following States consider *Puma concolor cougar* to be extirpated and do not have an open hunting season for the subspecies: Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Missouri, New Hampshire, New Jersey, New York, Ohio, Rhode Island, and Tennessee. In the following States *Puma concolor cougar* is protected as a threatened or endangered species: Maryland, Massachusetts, Michigan, Missouri, New York, North Carolina, South Carolina, Vermont, and Virginia, and West Virginia (USFWS 2011).

In Canada, the Committee on the Status of Endangered Wildlife in Canada has designated the eastern population, *Puma concolor cougar*, as Data Deficient (see section 4.2 for more information).

#### *Puma concolor*

While *Puma concolor coryi* and *Puma concolor cougar* are managed at the subspecies level as federal endangered species in the United States (see section 7 above and section 8 for more information), the rest of the species is managed at the species level (*Puma concolor*). Most of the western States that have viable populations of *Puma concolor* allow sport-hunting (Pierce and Bleich 2003). The States control hunting through State regulations that dictate season length, allowable methods and levels of harvest, and reporting requirements. The State of California does not allow the hunting of *Puma concolor* and has classified the species as a "specially protected species"; however, the State does not consider the species to be threatened or endangered in California (CDFW 2007).

In Canada *Puma concolor* is managed at the species level (not subspecies). Canada's *Wild Species 2010* report, which provides a coarse-scale snapshot of the health of Canadian species, considers the *Puma concolor* to be Secure in Canada (Wild Species Database 2010). At the provincial/territorial level, the species *Puma concolor* is protected under Provincial or Territorial Wildlife Acts. Under these Acts, utilization of the species is prohibited unless a permit is issued by the jurisdictional government (see 8.1 for more detail). Additional protection is in place in Ontario, where the species *Puma concolor* is listed as endangered under the "Ontario Species at Risk Act" and in Quebec, where the species is listed as "Suseptible d'être désigné espèce menacée ou vulnérable" under the "Loi sur les espèces menacées ou vulnérables." In Canada, interprovincial movement is regulated by the Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act (WAPPRIITA).

## 7.2 International

*Puma concolor coryi* and *Puma concolor cougar* were listed in Appendix I of CITES in 1975. All other North American *Puma concolor* were included in CITES Appendix II under Felidae spp. in 1977.

## 8. Species management

### 8.1 Management measures

#### *Puma concolor coryi* in the United States

As a federally endangered subspecies, *Puma concolor coryi* is managed in accordance with recovery plans, which delineate actions that are required to recover and protect the subspecies. The most recent revision of the recovery plan for *Puma concolor coryi* was published in 2008 (USFWS 2008).

The goal of this recovery plan is to, “. . . achieve long-term viability of the Florida panther to a point where it can be reclassified from endangered to threatened, and then removed from the Federal List of endangered and threatened species.” To achieve this goal, the strategy is to maintain, restore, and expand the subspecies’ population and its habitat in south Florida, expand this population into south-central Florida, reintroduce at least two additional viable populations within the historic range outside of south and south-central Florida, and facilitate recovery of the subspecies through public awareness and education.

According to the recovery plan (USFWS 2008), reclassification of the subspecies from endangered to threatened under the ESA will be considered when: (1) Two viable populations of at least 240 individuals (adults and subadults) each have been established and subsequently maintained for a minimum of twelve years (two panther generations); and (2) Sufficient habitat quality, quantity, and spatial configuration to support these populations is retained and protected or secured for the long-term. De-listing from the ESA will be considered when: (1) Three viable, self-sustaining populations of at least 240 individuals (adults and subadults) each have been established and subsequently maintained for a minimum of twelve years; and (2) Sufficient habitat quality, quantity, and spatial configuration to support these populations is retained and protected or secured for the long-term. For de-listing, exchange of individuals and gene flow among subpopulations must be natural (i.e., not manipulated or managed). If all actions outlined in the recovery plan are fully funded and implemented, it is estimated that criteria for reclassification from endangered to threatened could be accomplished within 30 years; criteria for de-listing could be accomplished within 45 years following reclassification. Due the challenging nature of *Puma concolor coryi* recovery, these estimates will be re-evaluated as recovery actions are implemented.

A plan for genetic restoration and management of *Puma concolor coryi* was developed in September 1994, and eight non-pregnant adult female Texas pumas (*Puma concolor stanleyana*) were released in five areas of south Florida from March to July 1995 (USFWS 2008). The population of *Puma concolor coryi* has since been increasing and has grown from approximately 20-30 individuals in 1995 to numbers ranging from 100-160 individuals today. The subspecies’ range in terms of area of occurrence has also increased. Although the population and range of *Puma concolor coryi* have increased since 1995, there are indications that the population might be at or approaching carrying capacity due to the limited availability of suitable habitat in southwest Florida. Since the availability of additional suitable habitat is currently limited, facilitated movement of individuals may be necessary to allow the subspecies to continue to expand its range (personal communication, Dawn Jennings 2014).

#### *Puma concolor cougar* in the United States

A recovery plan for the federally endangered *Puma concolor cougar* was approved in 1982 (USFWS 1982), which outlined recovery objectives for this subspecies; however, no recovery actions are currently being implemented for this subspecies because the U.S. Fish and Wildlife Service reviewed the status of *Puma concolor cougar* in 2011 and concluded that the subspecies is extinct (USFWS 2011). The review was based on information obtained from reports, surveys, peer-reviewed and published scientific literature, books, Web sites, and other scientific and management information, augmented by conversations with and comments from biologists and other experts familiar with the species. In addition, information was obtained from a survey distributed to the State fish and wildlife agencies in 21 States and Washington, D.C. within the historic range of *Puma concolor cougar*, as mapped in the recovery plan (USFWS 1982). Despite thousands of unconfirmed reports of pumas in State wildlife agency files throughout the 21-State region, this review of the status of *Puma concolor cougar* revealed no convincing evidence that a wild, breeding population of pumas survived within the historic range of this subspecies. The review found that although there have been thousands of sightings, most are of mistaken identity. The review concludes that the subspecies *Puma concolor cougar* is extinct, and the only action recommended as a result of this review is for the U.S. Fish and Wildlife Service to prepare a proposed rule to de-list *Puma concolor cougar* from the ESA (USFWS 2011).

#### *Puma concolor coryi* in the United States

As a federally endangered subspecies, *Puma concolor coryi* is managed in accordance with recovery plans, which delineate actions that are required to recover and protect the subspecies. The most recent revision of the recovery plan for *Puma concolor coryi* was published in 2008 (USFWS 2008). The goal of this recovery plan is to, “. . . achieve long-term viability of the Florida panther to a point where it can be reclassified from endangered to threatened, and then removed from the Federal List

of endangered and threatened species.” To achieve this goal, the strategy is to maintain, restore, and expand the subspecies’ population and its habitat in south Florida, expand this population into south-central Florida, reintroduce at least two additional viable populations within the historic range outside of south and south-central Florida, and facilitate recovery of the subspecies through public awareness and education.

According to the recovery plan (USFWS 2008), reclassification of the subspecies from endangered to threatened under the ESA will be considered when: (1) Two viable populations of at least 240 individuals (adults and subadults) each have been established and subsequently maintained for a minimum of twelve years (two panther generations); and (2) Sufficient habitat quality, quantity, and spatial configuration to support these populations is retained and protected or secured for the long-term. De-listing from the ESA will be considered when: (1) Three viable, self-sustaining populations of at least 240 individuals (adults and subadults) each have been established and subsequently maintained for a minimum of twelve years; and (2) Sufficient habitat quality, quantity, and spatial configuration to support these populations is retained and protected or secured for the long-term. For de-listing, exchange of individuals and gene flow among subpopulations must be natural (i.e., not manipulated or managed). If all actions outlined in the recovery plan are fully funded and implemented, it is estimated that criteria for reclassification from endangered to threatened could be accomplished within 30 years; criteria for de-listing could be accomplished within 45 years following reclassification. Due the challenging nature of *Puma concolor coryi* recovery, these estimates will be re-evaluated as recovery actions are implemented.

A plan for genetic restoration and management of *Puma concolor coryi* was developed in September 1994, and eight non-pregnant adult female Texas pumas (*Puma concolor stanleyana*) were released in five areas of south Florida from March to July 1995 (USFWS 2008). The population of *Puma concolor coryi* has since been increasing and has grown from approximately 20-30 individuals in 1995 to numbers ranging from 100-160 individuals today. The subspecies’ range in terms of area of occurrence has also increased. Although the population and range of *Puma concolor coryi* have increased since 1995, there are indications that the population might be at or approaching carrying capacity due to the limited availability of suitable habitat in southwest Florida. Since the availability of additional suitable habitat is currently limited, facilitated movement of individuals may be necessary to allow the subspecies to continue to expand its range (personal communication, Dawn Jennings 2014).

#### *Puma concolor cougar* in the United States

A recovery plan for the federally endangered *Puma concolor cougar* was approved in 1982 (USFWS 1982), which outlined recovery objectives for this subspecies; however, no recovery actions are currently being implemented for this subspecies because the U.S. Fish and Wildlife Service reviewed the status of *Puma concolor cougar* in 2011 and concluded that the subspecies is extinct (USFWS 2011). The review was based on information obtained from reports, surveys, peer-reviewed and published scientific literature, books, Web sites, and other scientific and management information, augmented by conversations with and comments from biologists and other experts familiar with the species. In addition, information was obtained from a survey distributed to the State fish and wildlife agencies in 21 States and Washington, D.C. within the historic range of *Puma concolor cougar*, as mapped in the recovery plan (USFWS 1982). Despite thousands of unconfirmed reports of pumas in State wildlife agency files throughout the 21-State region, this review of the status of *Puma concolor cougar* revealed no convincing evidence that a wild, breeding population of pumas survived within the historic range of this subspecies. The review found that although there have been thousands of sightings, most are of mistaken identity. The review concludes that the subspecies *Puma concolor cougar* is extinct, and the only action recommended as a result of this review is for the U.S. Fish and Wildlife Service to prepare a proposed rule to de-list *Puma concolor cougar* from the ESA (USFWS 2011).

#### *Puma concolor* in the United States

In the United States, with the exception of *Puma concolor coryi* and *Puma concolor cougar* which are federally endangered, management of *Puma concolor* populations is under the authority of individual State fish and wildlife agencies, which manage the species to maintain sustainable population levels. With the exception of California, most States in the western United States where viable populations of *Puma concolor* occur, allow sport-hunting of the species (Pierce and Bleich 2003). Management objectives for *Puma concolor* may vary within different parts of a State depending on the population status of the species, prey densities, and differences in habitats and

associated human tolerance levels for the species. In some areas with important ungulate resources and potentially high levels of human conflict, *Puma concolor* populations are managed by increasing harvest limits in order to reduce *Puma concolor* population levels (Day 2011; Kujala 2011; Lackey and Woolstenhulme 2011; Shannon and Bunnell 2011; Thompson *et. al.*, 2011; Winslow 2011).

#### *Puma concolor* in Canada

*Puma concolor* (and all subspecies) is legally protected in all provinces and territories of Canada through provincial and territorial legislation, including wildlife acts and endangered species legislation.

In Canada, hunting or trapping of *Puma concolor* is permitted in British Columbia and Alberta, where cougar harvest is conducted with the goal of long-term population sustainability. In these provinces, *Puma concolor* is harvested as a big game species under the authorization of hunting permits or licenses in accordance with the provincial wildlife acts. The adaptive management framework for cougar is designed to provide the level of control necessary to maintain self-sustaining populations of *Puma concolor* throughout its range while minimizing threats to human safety and predation of pets and livestock. Jurisdictional management strategies are reviewed annually, and adjusted as necessary. Policy and procedures are in place in all range jurisdictions to address animal control and human safety issues.

Inspection of all human caused mortalities (hunted, accidentally trapped, killed by landowners, killed as problem wildlife or found dead) is mandatory and harvest is monitored closely during the hunting season in relation to the established quotas. Harvest controls include hunter bag limits, gender-specific quotas and season length, which may be varied by geographical management unit to ensure local populations are sustainably harvested.

The adaptive management systems throughout Canada allow for strict control of harvest and are reactive to changing conditions, with the aim of ensuring sustainable harvest and maintaining biodiversity. Should *Puma concolor* (including any of the subspecies) ever become established again in eastern Canada, conservation and management would fall under the purview of existing legislation and regulations for *Puma concolor*.

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## 8.2 Population monitoring

In the United States, the endangered *Puma concolor coryi* population is monitored through track and sign surveys, trail cameras, and radiotelemetry (USFWS 2008). Reported sightings or other signs indicating the potential presence of *Puma concolor cougar* are collected through established sightings networks (USFWS 2011). For other *Puma concolor* populations in the United States, population status and trends are monitored using track and sign surveys, radiotelemetry, trail cameras, harvest statistics, and other mortality records (Lackey and Woolstenhulme 2011; Pierce and Bleich 2003; Thompson *et. al.*, 2011; USFWS 2011).

Where *Puma concolor* is hunted in Canada, harvest statistics are collected through mandatory reporting by hunters, unsuccessful hunters and hunting guides and outfitters on behalf of their non-resident clients. Biological samples, such as premolar teeth, are obtained from hunted animals to monitor the demographics of hunted populations. Where the species is not hunted, population information is collected through established sightings networks, including jurisdictions where the presence of a cougar breeding population has not been confirmed.

## 8.3 Control measures

### 8.3.1 International

In Canada, all wildlife acts require export permits for export of *Puma concolor* out of the province or territory of harvest, including international export.

Other than CITES we are not aware of any specific international control measures for *Puma concolor coryi* or *Puma concolor cougar*. However, U.S. domestic regulation of these subspecies prohibits (among other things) import, export, and shipment in foreign commerce by persons subject to U.S. jurisdiction of the species without a permit

### 8.3.2 Domestic

In the United States, at the federal level, *Puma concolor coryi* and *Puma concolor cougar* are listed as Endangered under the U.S. Endangered Species Act of 1973, as amended, and also subject to the Lacey Act of 1900, as amended 22 May 2008. At the State level, *Puma concolor coryi* is managed as endangered by the States of Florida, Georgia, Louisiana, and Mississippi, and is not subject to harvest (USFWS 2008).

At the State level, the following States consider *Puma concolor cougar* to be extirpated and do not have an open hunting season for the subspecies: Connecticut, Delaware, Illinois, Indiana, Kentucky, Maine, Maryland, Missouri, New Hampshire, New Jersey, New York, Ohio, Rhode Island, and Tennessee. The following States have additional regulations in place to protect *Puma concolor cougar* as a threatened or endangered species: Maryland, Massachusetts, Michigan, Missouri, New York, North Carolina, South Carolina, Vermont, Virginia, and West Virginia (USFWS 2011).

In Canada, provincial and territorial governments are responsible for the management of *Puma concolor* (and any of its subspecies), and it is legally protected through various provincial and territorial wildlife or species protection acts. Under these acts, certain uses of Canadian wildlife are allowed under specific regulations and only with the provision of licenses or permits. Generally, without such a license, the catch, possession, trade, sale,

disturbance or destruction of wildlife is prohibited. Hunters are made aware of these controls through the annual publication of Hunter Regulation summaries. There is high confidence in the effectiveness of these measures.

#### 8.4 Captive breeding and artificial propagation

##### *Puma concolor coryi*

Between 1991 and 1992, ten *Puma concolor coryi* kittens were brought into captivity for the purpose of establishing a captive-breeding program, with the goal of re-establishing the subspecies in unoccupied portions of its historic range. However, plans to establish a captive-breeding program were halted in 1992, and in 1994, a genetic restoration plan was developed for the subspecies, which involved introducing wild-captured animals from western *Puma concolor* populations into the *Puma concolor coryi* population. Although a captive-breeding program was not established, the kittens that had been captured from the wild were maintained in captivity for conservation education purposes (USFWS 2008). Based on zoo taxon reports, no *Puma concolor coryi* have been born in captivity since 1986.

##### *Puma concolor cougar*

There are no known live *P. c. cougar*.

##### *Puma concolor*

International trade of live, captive-bred *Puma concolor* from western North America occurs and the species is found in many zoo collections

#### 8.5 Habitat conservation

Habitat is conserved through a variety of national, provincial/State conservation programs.

#### 8.6 Safeguards

Management and protection for *Puma concolor coryi* is independent of listing in CITES. Regardless of any reclassification under CITES, the subspecies will continue to be regulated by the U.S. Endangered Species Act of 1973, as amended, as well as regulations by the States of Florida, Georgia, Louisiana, and Mississippi. *Puma concolor cougar* is considered extinct. Should it be re-discovered, it would be afforded protections under existing provincial, territorial and State legislation, and it would be protected as a CITES Appendix II species under the Appendix II listing for *Puma concolor*. Management and protection of any *Puma concolor* found throughout North America would occur under existing provincial, territorial and State legislation, and the species will continue to be listed in Appendix II of CITES.

#### 9. Information on similar species

There is no scientific evidence that *Puma concolor cougar* exists. There is no need to ensure adequate controls are in place to protect this subspecies from trade that occurs for other Felidae (see also section 8.6 for controls at the species level that would include all subspecies).

Other North American *Puma concolor* are on Appendix II. They were recognized in 1979 as being placed on Appendix II as “look-alike” species, to protect the North American Appendix I *Puma concolor coryi* and *Puma concolor cougar* (per Article II, Paragraph 2(b); CoP2 Plen. 2.16).

#### 10. Consultations

This proposal concerns two *Puma concolor* subspecies with ranges solely in Canada and the United States. Information for this proposal was provided by both range states and is incorporated throughout this document.

## 11. Additional remarks

The current listing of the two subspecies on Appendix I with all other subspecies in North America on Appendix II is inconsistent with CITES guidelines for split-listing, which advise that listings below the species level should be on the basis of national or regional populations rather than subspecies; split-listings that place some populations of a species in the Appendices, and the rest outside the Appendices, should normally not be permitted (Annex 3 of CITES Resolution Conf. 9.24. [Rev. CoP16]).

This proposal is consistent with other proposals accepted by the Conference of the Parties, which sought to transfer populations to Appendix II because of intensive management and protection with no trade, and situations involving split-listings, for example: CoP16 Prop. 1 (*Rupicapra pyrenaica ornata*), CoP16 Prop. 20 (*Tympanuchus cupido attwateri*), CoP14, Prop. 23 (*Nolina interrata*), CoP13 Prop. 43 (*Cattleya trianaei*), and CoP12 Prop. 48 (*Dudleya traskiae*).

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Table 1. *Puma concolor coryi* records in the UNEP-WCMC CITES trade database (1977-2011).

Species name in CITES trade database	(Re) Exporting Countries	Importing Countries	Number of trade records	Source/Purpose	Notes
<i>Puma concolor coryi</i>	JP	CN	2 live	C/Z	Very likely errors in reporting or identification: There are no records of live <i>P. concolor coryi</i> ever being exported from the U.S., and so there would be no animals to serve as foundation stock for a captive population(s) on a different continent. Japan does not have any documents related to the shipment.
<i>Puma concolor coryi</i>	CA	NZ	1 skin	I/-	Very likely reporting error. CA has no record of any permits issued for <i>P.c. coryi</i> but does have a record for <i>Puma concolor</i> in 1996 (source W), for export of a hunting trophy (mount) to NZ – it is Canada's only record of cougar trade between CA and NZ in 1996, and is very likely the same trade event as that reported by NZ. Therefore, the subspecies reported by NZ is most likely an error.
<i>Puma concolor coryi</i>	US	PH	3 live	F/T	The U.S. has confirmed an error in the species reported. U.S. trade records show this export is that of an Appendix II cougar ( <i>Puma concolor</i> ). The U.S. is submitting a correction to UNEP-WCMC.
<i>Puma concolor coryi</i>	AU	FR	1 trophy	-/O	This record is that of a 2002 re-export of a U.S.-origin pre-convention trophy. The U.S. does not have historical records available to confirm whether a pre-convention trophy of <i>P. c. coryi</i> was ever exported from the U.S.
<i>Puma concolor coryi</i>	US	DE	2 specimens	W/S	2009 export of museum specimens (bone) for scientific research.

Table 2. *Puma concolor cougar* records in the UNEP-WCMC CITES trade database (1977-2011).

Species name in CITES trade database	(Re) Exporting Countries	Importing Countries	Number of trade records	Source/Purpose	Notes
<i>Puma concolor cougar</i>	CA, US	US, CA	1 skull	O/S	Export and re-export of a 1935-1938 wild-caught putative <i>P. concolor cougar</i> , for genetic research.
<i>Puma concolor cougar</i>	CA	US	2 (1 trophy, 1 skin)	W/-	Very likely errors in reporting or identification: According to the UNEP-WCMC CITES trade database, this trade occurred in 1995 and 1996. Canada has no record of these exports of wild <i>P. concolor cougar</i> and the U.S. does not maintain export records this far back. Most likely the specimens were not <i>P. concolor cougar</i> and instead originated from western Canada, well

Species name in CITES trade database	(Re) Exporting Countries	Importing Countries	Number of trade records	Source/Purpose	Notes
					outside the range of <i>P. c. cougar</i> .
<i>Puma concolor cougar</i>	CA	LU	1 skin, 1 skull (1 individual)	W	Reporting error. The permit information indicates "cougar ( <i>Felis concolor</i> )" and this information was reported incorrectly to WCMC as being of the Appendix I <i>couguar</i> subspecies.
<i>Puma concolor cougar</i>	US (origin Canada)	DE	2 specimens	W/S	2009 export of museum specimens (bone) for scientific research.
<i>Puma concolor cougar</i>	US	DE	48 specimens	W/S	2009 export of museum specimens (bone) for scientific research.
<i>Puma concolor cougar</i>	RU, LV, UA	AM, AZ, KZ, LV, RU	19 (probably some re-exports of the same individuals)	C/Q,Z	Very Likely errors in reporting or identification: <i>P. concolor cougar</i> has been extinct for over a century and thus is very unlikely to have served as foundation stock for a captive population(s) on a different continent.
<i>Puma concolor cougar</i>	MX (origin unknown)	US	1 claw	I/P	2008 seizure due to violation of the US Lacey Act. Very Likely an error in reporting or identification.